



Pacific Sun Dairy

2023 Annual Report

<u>X</u> Report Form	<u>NA</u> Attachment H
<u>X</u> Attachment A	<u>NA</u> Attachment I
<u>X</u> Attachment B	<u>NA</u> Attachment J
<u>X</u> Attachment C	<u>X</u> Manure Tracking Manifests
<u>X</u> Attachment D	<u>NA</u> New or Revised Waste Water Agreements
<u>X</u> Attachment E	<u>X</u> Groundwater Monitoring Samples
<u>X</u> Attachment F	<u>NA</u> Monitoring Well Report
<u>X</u> Attachment G	<u>NA</u> Owner/Operator Change Form

Enclosed are the required documents to be submitted to the Regional Water Quality Control Board Central Valley Region in compliance with Order No. R5-2013-0122 Waste Discharge Requirements, General Order for Existing Milk Cow Dairies for July 1, 2024.

(See attached delivery confirmation)

Annual Report

Pacific Sun Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy Pacific Sun Dairy
Facility Address 9086 Avenue 144, Tipton CA 93272

Owner/Operator as of 12/31/2023

Operator Name Paul Beno
Operator Phone (559) 358-0348
Owner Name Stanley Vanden Brink
Owner Phone (559) 624-1150

1. Beginning and end dates of the annual reporting period: crops harvested January 1, 2023 through December 31, 2023.
2. Maximum and average number and type of animals (see Attachment A).
3. Estimated amount of total manure and process wastewater generated by the facility (see Attachment A).
4. Estimated amount of total manure and process wastewater applied to each land application area (see Attachment B).
5. Quantified ratio of total nitrogen applied to land application areas and total nitrogen removed by crop harvest (see Attachment B).
6. Estimated amount of total manure and process wastewater transferred to other persons by the facility (see Attachment C).
7. Total number of acres and the Assessor Parcel Numbers for all land application areas that were not used for application of manure or process wastewater (see Attachment D).
8. Total number of acres and the Assessor Parcel Numbers for all land application areas that were used for land application of manure and process wastewater (see Attachment D).
9. Summary of manure and process wastewater discharges from the production area
Provide a summary of all manure and wastewater discharges from the production area to surface water or to land areas (land application areas or otherwise) when not in accordance with the facility's Nutrient Management Plan, that occurred during the annual reporting period, including the date, time, location, approximate volume, a map showing discharge and sample locations, rationale for sample locations, and method of measuring discharge flows:
☒ No discharges occurred during the reporting period.
☐ Yes. Number of discharges occurred (see Attachment H).

Pacific Sun Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

10. Summary of storm water discharges from the production area

Provide a summary of all storm water discharges from the production area to surface water, that occurred during the annual reporting period, including the date, time, approximate volume, duration, location, a map showing discharge and sample locations, rationale for sample locations, and method of measuring discharge flows:

☒ No discharges occurred during the reporting period.

☐ Yes. _____ Number of discharges occurred (see Attachment I).

11. Summary of discharges from the land application area

Provide a summary of all discharges from the land application area to surface water, that occurred during the annual reporting period, including the date, time, approximate volume, location, source of discharge (i.e. tailwater, wastewater or blended wastewater), a map showing discharge and sample locations, rationale for sample locations, and method of measuring discharge flows:

☒ No discharges occurred during the reporting period.

☐ Yes. _____ Number of discharges occurred (see Attachment J).

12. Nutrient Management Plan update

Has the NMP been updated, and if so, was it updated by a Certified Nutrient Management Specialist?

☐ No.

☒ Yes, the new NMP was developed and approved by a Certified Nutrient Management Specialist.

13. Manure/Process Wastewater Tracking Manifests

Did you sell, give away, or otherwise remove manure or process wastewater from your property?

☐ No.

☒ Yes, see attached manifests.

14. Written Agreements

Any process wastewater transferred to a third party that receives process wastewater from your dairy for its own use must have a written agreement consistent with State requirements. Attach copies of revised and/or new agreements not submitted previously. Do not resubmit agreements submitted previously.

☒ Not applicable; no written agreements.

☐ No changes in agreement(s).

☐ Yes, a new or revised agreement is attached.

15. Laboratory Analyses for Discharges

If you answered Yes to items #9, 10, or 11 above, attach copies of all laboratory analyses for all discharges (manure, process wastewater or tailwater), surface water (upstream and downstream of a discharge), and storm water, including chain-of-custody forms and laboratory quality assurance/quality control results, as applicable. (Results for Manure and process wastewater, storm water, and/or storm water are provided).

☒ Not Applicable.

☐ Yes, provided with Attachment H, I, or J for #9, 10 and 11, respectively.

16. Tabulated Nutrient Analytical Data

Attach tabulated analytical data for samples of manure, process wastewater, irrigation water, soil, and plant tissue. The data shall be tabulated to clearly show sample dates, constituents analyzed, constituent concentrations, and detection limits (see Attachment E).

Pacific Sun Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

17. Record-Keeping Results

Attach results of the Record-Keeping Requirements for the production and land application areas specified in Record-Keeping Requirements. These include:

- * Records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction.
- * Records of the date, time, and estimated volume of any overflow or bypass of the wastewater storage or conveyance structures.
- * Expected and actual crop yields (see Attachment F).
- * Identification of crop, acreage, and dates of planting and harvest for each field (see Attachment F).
- * Dates, locations, and approximate weight and moisture content of manure applied to each field (see Attachment B).
- * Dates, locations, and volume of process wastewater applied to each field (see Attachment B).
- * Whether precipitation occurred, or standing water was present at the time of manure and process wastewater applications and for 24 hours prior to and following applications (see Attachment G).
- * Total amount of nitrogen, phosphorus, and potassium actually applied to each field, including documentation of calculations for the total amount applied (see Attachment B).

18. Groundwater Monitoring Section

- ☒ Groundwater monitoring results are attached.
- ☐ Monitoring Well results are attached, if applicable.

A. All dischargers must attach groundwater information for supply wells and subsurface (tile) drainage systems including the location of sample collection and all field and laboratory data, including all laboratory analyses (including chain-of-custody forms and laboratory quality assurance/quality control results).

B. Dischargers who have monitoring well systems shall include all laboratory analyses (including chain-of-custody forms and laboratory quality assurance/quality control results) and tabular and graphical summaries of the monitoring data. Data shall be tabulated to clearly show the sample dates, constituents analyzed, constituent concentrations, detection limits, depth to groundwater and groundwater elevations. Graphical summaries of groundwater gradients and flow directions shall also be included. Each groundwater monitoring report shall include a summary data table for all historical and current groundwater elevations and analytical results. The groundwater monitoring results shall be certified by a California registered professional.

19. Storm Water Reporting Section

- ☒ No significant discharges of storm water occurred from the land application areas.
- ☐ Yes, significant discharge(s) of storm water occurred from land application areas. The following information shall be submitted for those discharges.
- ☐ It was not possible to collect any of the required samples or perform visual observations due to adverse climatic conditions.

20. Mortality Management Practices

- * Dead cows are picked up and disposed of by rendering service.

Pacific Sun Dairy 2023
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

"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."

DocuSigned by:

Paul Beno

7CF254D409A74C6...

Signature of Operator of Facility

Paul Beno

Print Name

6/28/2024

Title and Date

DocuSigned by:

Stanley Vanden Brink

4A655E28D8A5487...

Signature of Owner of Facility

Stanley Vanden Brink

Print Name

6/28/2024

Title and Date

Pacific Sun Dairy 2023

Estimated Manure and Nutrients Generated (Attachment A)

Animal Type	Maximum No. of Head	Average No. of Head*	Housing Type	Weight	Total Manure Produced (tons/year)	NITROGEN	PHOSPHORUS	POTASSIUM	SALTS
						Net (LB) Available for Land Application	Net (LB) Available for Land Application	Net (LB) Available for Land Application	Net (LB) Available for Land Application
Hol Milk Cows	1,200	1,170	Milk Flushed Lane	1,400	29,693.30	422,779.50	72,598.50	98,221.50	771,252.30
Hol Dry Cows	255	248	Flushed	1,450	3,618.84	45,260.00	6,336.40	29,871.60	63,870.91
Hol Heifers(15-24)	410	399	Flushed	1,000	4,164.97	55,341.30	8,738.10	26,214.30	102,760.06
Hol Heifers (7-14)	345	336	Flushed	750	3,231.40	31,886.40	5,396.16	18,396.00	40,563.18
Hol Calves (4-6)	138	134	Flushed	300	464.64	6,847.40	1,956.40	3,912.80	3,208.50
Hol Calves (0-3)	45	43	Calves Dry Scrape	150	149.10	313.90	156.95	627.80	377.78
	2,393	2,330			41,322.27	562,428.50	95,182.51	177,244.00	982,032.72

* The Average No. of Head is used to calculate manure and nutrient production

Estimated Amount of Total Process Wastewater and Nutrients Generated

Total Gallons of Process Wastewater Generated***	Average TKN Concentration (mg/L)*	Average Total Phosphorus Concentration (mg/L)*	Average Potassium Concentration (mg/L)*	Average Total Dissolved Solids (mg/L)*	Total Nitrogen Generated (lb)**	Total Phosphorus Generated (lb)**	Total Potassium Generated (lb)**	Total Salt Generated (lb)**
24,289,521	242.25	31.82	224.25	1,745.00	49,014.86	6,439.21	45,372.89	353,068.84

* The average Total Kjeldahl Nitrogen, Total Phosphorus, Total Potassium, and Total Salt concentrations are based on an average of all process wastewater sample results for the year.

** The total pounds of Nitrogen, Phosphorus, Potassium and Total Dissolved Solids generated = Average Concentration (mg/L) X Total Gallons of Wastewater Generated X 8.33 X 0.000001.

*** The total gallons of process wastewater generated is calculated as the total gallons of process wastewater applied to all land application areas (Attachment B) plus the total gallons of process wastewater transferred offsite (Attachment C).

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 1

Wheat, 85 Acres Planted on 11/10/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			1,190				
01/06/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22		mg/L			2,424	0	0	68,254	
03/04/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22		mg/L			2,424	0	0	68,254	
05/10/2023	Harvest	19.40	Tons	64.50	1.28	0.29	1.30	%						14,986
Acre Inches Applied:		10.00		Totals:						6,038	0	0	136,508	14,986
Season Nitrogen Ratio: 1.25				Lbs Per Acre:						71	0	0	1,606	176

Field Name: 1

Corn, 85 Acres Planted on 06/23/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
06/04/2023	Corral Solids: Main Corral	8.00	Tons	9.18	1.04	0.27	0.57	%	680	12,845	3,335	7,016	0	
06/08/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22		mg/L			2,424	0	0	68,254	
07/16/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22		mg/L			2,424	0	0	68,254	
07/27/2023	Ground Water: Well Avg	5.50	Acre Inches		25.22		mg/L			2,667	0	0	75,080	
08/14/2023	Ground Water: Well Avg	5.80	Acre Inches		25.22		mg/L			2,813	0	0	79,175	
08/28/2023	Ground Water: Well Avg	5.50	Acre Inches		25.22		mg/L			2,667	0	0	75,080	
09/11/2023	Harvest	28.90	Tons	62.60	1.18	0.25	0.65	%						21,682
Acre Inches Applied:		26.80		Totals:				680		25,841	3,335	7,016	365,843	21,682
Season Nitrogen Ratio: 1.19				Lbs Per Acre:						304	39	83	4,304	255

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 2

Wheat, 68 Acres Planted on 11/10/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00					952				
01/11/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					1,939	0	0	54,603	
05/09/2023	Harvest	19.60	Tons		59.00	1.35	0.31	1.30						14,754
Acre Inches Applied:		5.00			Totals:					2,891	0	0	54,603	14,754
Season Nitrogen Ratio: 0.89					Lbs Per Acre:					43	0	0	803	217

Field Name: 2

Corn, 68 Acres Planted on 06/21/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
06/05/2023	Corral Solids: Main Corral	8.00	Tons		9.18	1.04	0.27	0.57	544	10,276	2,668	5,613	0	
06/09/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					1,939	0	0	54,603	
07/17/2023	Ground Water: Well Avg	5.60	Acre Inches		25.22					2,173	0	0	61,156	
07/28/2023	Ground Water: Well Avg	5.80	Acre Inches		25.22					2,250	0	0	63,340	
08/15/2023	Ground Water: Well Avg	5.80	Acre Inches		25.22					2,250	0	0	63,340	
08/29/2023	Ground Water: Well Avg	5.75	Acre Inches		25.22					2,230	0	0	62,794	
09/10/2023	Harvest	30.00	Tons		68.50	1.40	0.22	1.10						17,993
Acre Inches Applied:		27.95			Totals:				544	21,119	2,668	5,613	305,233	17,993
Season Nitrogen Ratio: 1.17					Lbs Per Acre:					311	39	83	4,489	265

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 3

Wheat, 85 Acres Planted on 11/08/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00					1,190				
01/16/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					2,424	0	0	68,254	
03/03/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					2,424	0	0	68,254	
05/04/2023	Harvest	19.00	Tons		71.70	1.65	0.49	2.36						15,082
Acre Inches Applied:		10.00			Totals:					6,038	0	0	136,508	15,082
Season Nitrogen Ratio: 1.25					Lbs Per Acre:					71	0	0	1,606	177

Field Name: 3

Milo, 85 Acres Planted on 06/20/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
05/10/2023	Corral Solids: Main Corral	8.00	Tons		9.18	1.04	0.27	0.57	680	12,845	3,335	7,016	0	
05/14/2023	Ground Water: Well Avg	4.60	Acre Inches		25.22					2,230	0	0	62,794	
07/01/2023	Ground Water: Well Avg	4.60	Acre Inches		25.22					2,230	0	0	62,794	
08/15/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					2,182	0	0	61,429	
09/18/2023	Ground Water: Well Avg	4.60	Acre Inches		25.22					2,230	0	0	62,794	
10/15/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					2,182	0	0	61,429	
11/11/2023	Harvest	24.30	Tons		59.70	1.74	0.23	1.95						28,967
Acre Inches Applied:		22.80			Totals:				680	23,900	3,335	7,016	311,239	28,967
Season Nitrogen Ratio: 0.83					Lbs Per Acre:					281	39	83	3,662	341

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 4

Wheat, 47 Acres Planted on 11/17/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			658				
01/16/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22		mg/L			1,340	0	0	37,741	
03/08/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22		mg/L			1,340	0	0	37,741	
05/24/2023	Harvest	18.75	Tons	69.10	1.11	0.22	1.12	%						6,045
Acre Inches Applied:		10.00		Totals:						3,339	0	0	75,481	6,045
Season Nitrogen Ratio: 1.40				Lbs Per Acre:						71	0	0	1,606	129

Field Name: 4

Milo, 47 Acres Planted on 06/25/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
05/29/2023	Corral Solids: Main Corral	6.00	Tons	9.18	1.04	0.27	0.57	%	282	5,327	1,383	2,909	0	
06/01/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			1,206	0	0	33,966	
07/12/2023	Ground Water: Well Avg	4.80	Acre Inches		25.22		mg/L			1,287	0	0	36,231	
08/16/2023	Ground Water: Well Avg	4.75	Acre Inches		25.22		mg/L			1,274	0	0	35,853	
09/19/2023	Ground Water: Well Avg	4.80	Acre Inches		25.22		mg/L			1,287	0	0	36,231	
10/16/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			1,206	0	0	33,966	
11/12/2023	Harvest	24.20	Tons	61.50	1.63	0.22	2.28	%						14,275
Acre Inches Applied:		23.35		Totals:				282		11,587	1,383	2,909	176,248	14,275
Season Nitrogen Ratio: 0.81				Lbs Per Acre:						247	29	62	3,750	304

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 5

Wheat, 53 Acres Planted on 11/03/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			742				
01/15/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			1,361	0	0	38,303	
01/15/2023	Waste Water: Main Lagoon	1.00	Acre Inches		280.00	42.30	272.00	mg/L	1,439,178	3,356	507	3,261	23,737	
03/10/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			1,361	0	0	38,303	
03/10/2023	Waste Water: Main Lagoon	1.00	Acre Inches		280.00	42.30	272.00	mg/L	1,439,178	3,356	507	3,261	23,737	
05/25/2023	Harvest	20.40	Tons		73.90	2.74	0.46	2.08	%					15,464
Acre Inches Applied:		11.00			Totals:				2,878,356	10,176	1,014	6,522	124,079	15,464
Season Nitrogen Ratio: 1.01					Lbs Per Acre:					192	19	123	2,341	292

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 5

Corn, 53 Acres Planted on 06/15/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
05/30/2023	Ground Water: Well Avg	3.20	Acre Inches		25.22					967	0	0	27,238	
05/30/2023	Waste Water: Main Lagoon	1.00	Acre Inches		311.00	37.40	262.00		1,439,178	3,729	448	3,141	11,389	
06/28/2023	Ground Water: Well Avg	4.00	Acre Inches		25.22					1,209	0	0	34,047	
07/13/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					1,512	0	0	42,558	
07/13/2023	Waste Water: Main Lagoon	1.00	Acre Inches		214.00	36.70	213.00		1,439,178	2,566	440	2,554	27,693	
07/26/2023	Ground Water: Well Avg	4.55	Acre Inches		25.22					1,376	0	0	38,728	
08/14/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					1,512	0	0	42,558	
08/14/2023	Waste Water: Main Lagoon	1.00	Acre Inches		214.00	36.70	213.00		1,439,178	2,566	440	2,554	27,693	
08/24/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					1,361	0	0	38,303	
09/10/2023	Harvest	31.20	Tons		66.70	1.39	0.22	1.02						15,308
Acre Inches Applied:		29.25			Totals:				4,317,534	16,796	1,328	8,248	290,207	15,308
Season Nitrogen Ratio: 1.10					Lbs Per Acre:					317	25	156	5,476	289

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 6

Wheat, 51 Acres Planted on 11/14/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			714				
01/16/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			1,309	0	0	36,857	
01/16/2023	Waste Water: Main Lagoon	1.00	Acre Inches		280.00	42.30	272.00	mg/L	1,384,869	3,230	488	3,138	22,841	
03/18/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			1,309	0	0	36,857	
03/18/2023	Waste Water: Main Lagoon	1.00	Acre Inches		280.00	42.30	272.00	mg/L	1,384,869	3,230	488	3,138	22,841	
05/25/2023	Harvest	19.60	Tons		73.70	2.49	0.46	2.26	%					13,092
Acre Inches Applied:		11.00		Totals:					2,769,739	9,792	976	6,276	119,397	13,092
Season Nitrogen Ratio: 1.15				Lbs Per Acre:						192	19	123	2,341	257

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 6

Corn, 51 Acres Planted on 06/16/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
05/31/2023	Ground Water: Well Avg	4.00	Acre Inches		25.22					1,164	0	0	32,762	
05/31/2023	Waste Water: Main Lagoon	0.50	Acre Inches		311.00	37.40	262.00		692,435	1,794	216	1,511	5,479	
06/29/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					1,309	0	0	36,857	
07/14/2023	Ground Water: Well Avg	4.85	Acre Inches		25.22					1,411	0	0	39,724	
07/14/2023	Waste Water: Main Lagoon	1.00	Acre Inches		214.00	36.70	213.00		1,384,869	2,469	423	2,457	26,648	
07/27/2023	Ground Water: Well Avg	4.90	Acre Inches		25.22					1,425	0	0	40,133	
08/15/2023	Ground Water: Well Avg	4.90	Acre Inches		25.22					1,425	0	0	40,133	
08/15/2023	Waste Water: Main Lagoon	1.00	Acre Inches		214.00	36.70	213.00		1,384,869	2,469	423	2,457	26,648	
08/26/2023	Ground Water: Well Avg	4.25	Acre Inches		25.22					1,236	0	0	34,810	
09/10/2023	Harvest	30.45	Tons		66.70	1.25	0.20	0.94						12,928
Acre Inches Applied:		29.90			Totals:				3,462,173	14,703	1,062	6,425	283,195	12,928
Season Nitrogen Ratio: 1.14					Lbs Per Acre:					288	21	126	5,553	254

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 7

Wheat, 80 Acres Planted on 11/02/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			1,120				
01/14/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22		mg/L			2,054	0	0	57,815	
01/14/2023	Waste Water: Main Lagoon	1.00	Acre Inches		280.00	42.30	272.00	mg/L	2,172,344	5,066	766	4,922	35,830	
03/13/2023	Ground Water: Well Avg	4.00	Acre Inches		25.22		mg/L			1,826	0	0	51,391	
03/13/2023	Waste Water: Main Lagoon	1.50	Acre Inches		280.00	42.30	272.00	mg/L	3,258,516	7,600	1,148	7,383	53,744	
05/24/2023	Harvest	18.30	Tons		73.90	2.48	0.44	2.06	%					18,952
Acre Inches Applied:		11.00		Totals:					5,430,860	17,666	1,914	12,306	198,780	18,952
Season Nitrogen Ratio: 1.37				Lbs Per Acre:						221	24	154	2,485	237

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 7

Corn, 80 Acres Planted on 06/14/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units		Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
05/28/2023	Ground Water: Well Avg	4.15	Acre Inches		25.22					1,894	0	0	53,318	
05/28/2023	Waste Water: Main Lagoon	0.50	Acre Inches		311.00	37.40	262.00		1,086,172	2,814	338	2,370	8,595	
06/26/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					2,282	0	0	64,239	
07/11/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					2,054	0	0	57,815	
07/11/2023	Waste Water: Main Lagoon	1.00	Acre Inches		214.00	36.70	213.00		2,172,344	3,873	664	3,854	41,801	
07/24/2023	Ground Water: Well Avg	5.00	Acre Inches		25.22					2,282	0	0	64,239	
08/12/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					2,054	0	0	57,815	
08/12/2023	Waste Water: Main Lagoon	1.00	Acre Inches		214.00	36.70	213.00		2,172,344	3,873	664	3,854	41,801	
08/22/2023	Ground Water: Well Avg	4.50	Acre Inches		25.22					2,054	0	0	57,815	
09/11/2023	Harvest	31.50	Tons		71.50	1.39	0.25	1.51						19,966
Acre Inches Applied:		30.15			Totals:				5,430,860	23,177	1,666	10,079	447,439	19,966
Season Nitrogen Ratio: 1.16					Lbs Per Acre:					290	21	126	5,593	250

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

Summary of Nutrient Applications, Removal, and Balance

	<u>Total N (Lbs)</u>	<u>Total P (Lbs)</u>	<u>Total K (Lbs)</u>	<u>Total Salts (Lbs)</u>	<u>Total Manure Applied</u>
<i>Solid Manure</i>	41,293.54	10,719.95	22,553.82	0.00	2,186.00 tons
<i>Process Wastewater</i>	51,989.74	7,961.07	49,856.39	400,478.05	24,289,521.35 gallons
<i>Irrigation Water</i>	93,214.47				
<i>Fertilizer / Total Imports</i>	0.00				
<i>Atmospheric Deposition</i>	6,566.00				
Total Nitrogen Applied	193,063.75				
<i>Crop Nitrogen Removal</i>	229,495.55				
Nitrogen Balance	(36,431.80)				
Nitrogen Ratio	0.84				

▣ Nutrient applications shown in Attachment B are on a calendar year basis.

▣ Lab sample data results for applications are based on the sample taken closest to the application date. Lab sample data results are shown on 100% dry basis for manure applications and harvest events.

▣ Well Avg: Irrigation source representing the average nutrient values of all irrigation wells sampled for the facility during the reporting year.

** Book Value: No sample data results were available. For manure applications and plant tissue harvests, the calculations were based off book values.

Pacific Sun Dairy 2023

Nutrient Applications (Attachment B)

FIELD NITROGEN RATIO Calculation:

"Field Nitrogen Ratio" = "Total Nitrogen Applied to Field" / "Total Nitrogen Extracted from Field at Harvest"

ATMOSHERIC DEPOSITION Applied (lbs) Calculation:

"Nitrogen Applied (Lbs)" = "14 Lbs (per year) * "Acres Planted"

HARVEST Nitrogen Extraction (Lbs) Calculation:

"Nitrogen Extracted (Lbs)" = ("Yield" (tons per acre) * 2000) * ((100 - "% Moisture") / 100 * "Lab Sample Data Nitrogen Value" / 100) * "Acres Planted"

IRRIGATION Nitrogen and Salts Applied (Lbs) Calculations:

"Nitrogen Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ("Lab Sample Data Nitrogen Value" * 0.000001) * "Acres Planted"

"Salts Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ("Lab Sample Data TDS Value" * 0.000001) * "Acres Planted"

PROCESS WASTEWATER Nitrogen, Phosphorus, Potassium and Salts Applied (Lbs) Calculations:

Nitrogen Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ("Lab Sample Data Nitrogen Value" * 0.000001) * "Acres Planted"

Phosphorus Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ("Lab Sample Data Phosphorus Value" * 0.000001) * "Acres Planted"

Potassium Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ("Lab Sample Data Potassium Value" * 0.000001) * "Acres Planted"

Salt Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ("Lab Sample Data TDS Value" * 0.000001) * "Acres Planted"

SOLID MANURE (Corral, Separator, or Compost) Nitrogen, Phosphorus, Potassium and Salts Applied (Lbs) Calculations:

Nitrogen Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ((100 - "% Moisture")/100 * "Lab Sample Data Nitrogen Value"/100) * "Acres Planted"

Phosphorus Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ((100 - "% Moisture")/100 * "Lab Sample Data Phosphorus Value"/100) * "Acres Planted"

Potassium Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ((100 - "% Moisture")/100 * "Lab Sample Data Potassium Value"/100) * "Acres Planted"

Salt Applied (Lbs)" = "Lbs Applied per Acre" (see below) * ((100 - "% Moisture")/100 * "Lab Sample Data Ash Value"/100) * "Acres Planted"

"Lbs Applied per Acre" Calculations:

If "Application Units" = Tons, Then "Lbs Applied per Acre" = "Application Amount" (per Acre) * 2000

If "Application Units" = Acres Inches, Then "Lbs Applied per Acre" = "Application Amount" (per Acre) * 8.33 * 27,154.3

If "Application Units" = Acre Feet, Then Lbs Applied per Acre" = "Application Amount" (per Acre) * 8.33 * 325,851

If "Application Units" = Gallons, Then "Lbs Applied per Acre" = "Application Amount" (per Acre) * 8.33

Pacific Sun Dairy 2023

Estimated Manure and Process Wastewater/Nutrients Transferred Off-Site (Attachment C)

A. ESTIMATED TOTAL MANURE TRANSFERRED OFFSITE

Total Manure Exported (tons)*	Total Nitrogen Exported (lbs)**	Total Phosphorus Exported (lbs)**	Total Potassium Exported (lbs)**	Total Salts Exported (lbs)**
4,588	86,660.44	22,498.38	47,329.93	0.00

* The Total Manure (tons) should be calculated as the sum of all manure transferred offsite as reported in all the Manure/Process Wastewater Tracking Manifests for the reporting period.

** Total (N, P, K, Salts) (lbs) = Sum of (N, P, K, Salts) for each manure export event based on (Manure(tons) x 2000lb/ton) x ((100-moisture%)/100) x (N, P, K, and Ash) Concentration (% dry weight) / 100 using the samples closest in date to the export event.

B. ESTIMATED TOTAL PROCESS WASTEWATER TRANSFERRED OFFSITE

Total Process Wastewater Exported (gal)*	Total Nitrogen Exported (lbs)**	Total Phosphorus Exported (lbs)**	Total Potassium Exported (lbs)**	Total TDS Exported (lbs)**

* The Total Manure (gals) should be calculated as the sum of all manure transferred offsite as reported in all the Manure/Process Wastewater Tracking Manifests for the reporting period.

** Total (Nitrogen, Phosphorus, Potassium, TDS) (lbs) = Sum of (Nitrogen, Phosphorus, Potassium, TDS) for each wastewater export event based on (Process Wastewater(gals) x 8.33lb/gal) x (N03-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.

Pacific Sun Dairy 2023

Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
1	x228 x010 x003 xxxx	85	Manure
2	x228 x010 x003 xxxx	68	Manure
3	x228 x010 x020 xxxx	85	Manure
4	x228 x010 x019 xxxx	47	Manure
5	x228 x250 x007 xxxx, x228 x250 x015 xxxx	53	Process Wastewater
6	x228 x250 x007 xxxx, x228 x250 x015 xxxx	51	Process Wastewater
7	x293 x070 x004 xxxx, x293 x070 x022 xxxx	80	Process Wastewater
		469	

Production Area APN(s): x228 x250 x007 xxxx, x228 x250 x015 xxxx

Pacific Sun Dairy 2023

Lab Results Summary (Attachment E)

Process Wastewater

(mg/l/ppm unless noted otherwise)

(mg/l/ppm unless noted otherwise)									General Minerals						
Sample Date:	TKN	TP	TK	EC (umhos/cm)	NH4N	NO3N	TDS	pH (units)	CA	MG	NA	HCO3	CO3	SO4	CL
03/09/2023	280.00	42.30	272.00	2,980	91.20		1,980.00								
04/19/2023	311.00	37.40	262.00	1,430	142.00	0.28	950.00	7.05							
07/18/2023	214.00	36.70	213.00	3,480	195.00		2,310.00								
11/02/2023	164.00	10.90	150.00	2,620	139.00		1,740.00								
Averages:	242.25	31.82	224.25	2,628	141.80	0.28	1,745.00	7.05							

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/14/2023	1.04	0.27	0.57	9.18						%
11/02/2023	2.06	0.60	1.59	29.80						%
Averages:	1.55	0.44	1.08	19.49						

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
1	1	Wheat	05/10/2023	25.60	5.74	26.00	64.50	11.10
1	2	Corn	10/04/2023	23.60	4.96	13.02	62.60	4.76

Pacific Sun Dairy 2023

Lab Results Summary (Attachment E)

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
2	1	Wheat	05/09/2023	27.00	6.20	26.00	59.00	10.20
2	2	Corn	11/10/2023	28.00	4.34	22.00	68.50	5.07
3	1	Wheat	05/04/2023	33.00	9.88	47.20	71.70	9.93
3	2	Milo	11/27/2023	34.80	4.56	39.00	59.70	13.30
4	1	Wheat	05/24/2023	22.20	4.50	22.40	69.10	11.90
4	2	Milo	11/27/2023	32.60	4.44	45.60	61.50	12.60
5	1	Wheat	05/25/2023	54.80	9.14	41.60	73.90	10.70
5	2	Corn	11/10/2023	27.80	4.32	20.40	66.70	5.04
6	1	Wheat	05/25/2023	49.80	9.28	45.20	73.70	11.90
6	2	Corn	11/10/2023	25.00	4.00	18.80	66.70	4.52
7	1	Wheat	05/24/2023	49.60	8.90	41.20	73.90	11.00
7	2	Corn	09/11/2023	27.80	5.00	30.20	71.50	6.95

Well / Irrigation Water

(mg/l/ppm unless noted otherwise)

Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	General Minerals						
							CA	MG	NA	HCO3	CO3	SO4	CL

Dairy

Pacific Sun Dairy 2023

Lab Results Summary (Attachment E)

Well / Irrigation Water

(mg/l/ppm unless noted otherwise)

(mg/ppm unless noted otherwise)								General Minerals						
	Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	CA	MG	NA	HCO3	CO3	SO4	CL
Dairy														
DW1	12/20/2023	1.90		311										
DW2	Out of Service						Out of service							
Averages:		1.90		311										
Irrigation														
W3	Out of Service						Out of service							
W4	10/13/2023	24.40		848		560.00	24.40							
W5	02/09/2023	30.80		1,400		1,010.00	30.80	125.00	18.00	184.00	480.00	0.00	42.40	43.00
W6	02/17/2023	39.00		1,290		920.00	39.00	116.00	18.00	162.00	480.00	0.00	40.20	47.00
W7	Out of Service						Out of service							
W8	02/17/2023	31.90		1,210		840.00	31.90	109.00	19.00	144.00	430.00	0.00	36.20	66.00
W9	02/09/2023	0.00		288		220.00	0.00							
W10							Did not Run							
W11							Out of service							
W3A	Out of Service						Out of service							
Averages:		25.22		1,007		710.00	25.22	116.67	18.33	163.33	463.33	0.00	39.60	52.00

* NH4N was non-detectable unless a value is shown

Pacific Sun Dairy 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field:	1							
	1	Wheat	85	11/10/2022	05/10/2023	19.0	1649.0	19.4
	2	Corn	85	06/23/2023	09/11/2023	28.6	2456.5	28.9
Field:	2							
	1	Wheat	68	11/10/2022	05/09/2023	19.0	1332.8	19.6
	2	Corn	68	06/21/2023	09/10/2023	29.0	2040.0	30.0
Field:	3							
	1	Wheat	85	11/08/2022	05/04/2023	19.3	1615.0	19.0
	2	Milo	85	06/20/2023	11/11/2023	25.0	2065.5	24.3
Field:	4							
	1	Wheat	47	11/17/2022	05/24/2023	18.1	881.2	18.8
	2	Milo	47	06/25/2023	11/12/2023	25.0	1137.4	24.2
Field:	5							
	1	Wheat	53	11/03/2022	05/25/2023	20.0	1081.2	20.4
	2	Corn	53	06/15/2023	09/10/2023	31.0	1653.6	31.2
Field:	6							
	1	Wheat	51	11/14/2022	05/25/2023	18.4	999.6	19.6
	2	Corn	51	06/16/2023	09/10/2023	30.0	1553.0	30.4
Field:	7							
	1	Wheat	80	11/02/2022	05/24/2023	17.9	1464.0	18.3
	2	Corn	80	06/14/2023	09/11/2023	31.2	2520.0	31.5

Pacific Sun Dairy 2023

Weather Data (Attachment G)

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	Light	None	Light	None	None	None	None	None	None	None	None	None
2	Light	None	None	None	None	None	None	None	None	None	None	None
3	None	None	None	None	None	None	None	None	None	None	None	None
4	Light	None	None	None	Light	None	None	None	None	None	None	None
5	Heavy	Light	Light	None	None	None	None	None	None	None	None	None
6	None	None	None	None	None	None	None	None	None	None	None	None
7	None	None	None	None	None	SWP	None	None	None	None	None	None
8	None	None	None	None	None	None	None	None	None	None	None	None
9	SWP	None	Light	None	None	None	None	None	None	None	None	None
10	Light	None	SWP	None	None	None	None	None	None	None	None	None
11	None	None	None	None	None	None	None	None	None	None	None	None
12	None	None	None	None	None	None	None	None	None	None	None	None
13	None	None	None	None	None	None	None	None	None	None	None	None
14	Heavy	None	SWP	None	None	None	None	None	None	None	None	None
15	Light	None	Heavy	None	None	None	None	None	None	None	None	None
16	Heavy	None	None	None	None	None	None	None	None	None	None	None
17	None	None	None	None	None	None	None	None	None	None	None	None
18	None	None	None	None	None	None	None	None	None	None	None	None
19	None	None	Light	None	None	None	None	Light	None	None	None	None
20	None	None	None	None	None	None	None	SWP	None	None	None	None
21	None	None	SWP	None	None	None	None	None	None	None	None	None
22	None	Light	Light	None	None	None	None	None	None	None	None	None
23	None	None	None	None	None	None	None	None	None	Heavy	None	None
24	None	SWP	None	None	None	None	None	None	None	None	None	None
25	None	SWP	None	None	None	None	None	None	None	None	None	None
26	None	None	None	None	None	None	None	None	None	None	None	None
27	None	Light	None	None	None	None	None	None	None	None	None	None
28	None	Heavy	Light	None	None	None	None	None	None	None	None	None
29	Light		Heavy	None	None	None	None	None	None	None	None	None
30	None		Light	None	None	None	None	None	None	None	None	Light
31	None		None		None		None	None		None		None

*Note: SWP = Standing Water Present

Manure/Process Wastewater Tracking Manifest For Existing Milk Cow Dairies

Instructions:

- 1) Complete one manifest for each hauling event, for each destination. A hauling event may last for several days, as long as the manure is being hauled to the same destination.
- 2) If there are multiple destinations, complete a separate form for each destination.
- 3) The operator must obtain the signature of the hauler upon completion of each manure-hauling event.
- 4) The operator shall submit copies of manure/process wastewater tracking manifest(s) with the Annual Monitoring Report for Existing Milk Cow Dairies.

Operator Information:

Name of Operator: Paul Beno

Name of Dairy Facility: Pacific Sun Dairy

Facility Address: 9086 Avenue 144 Tipton 93272
Number and Street City Zip Code

Contact Person Name: Paul Beno (559) 752-4806
Name Phone Number

Manure/Process Wastewater Hauler Information:

Name of Hauling Company/Person: Cain Trucking, Inc.

Address of Hauling Company /Person: 23004 Road 140 Tulare 93274
Number and Street City Zip Code

Contact Person: _____
Name Phone Number

Destination Information:

☒ Composting Facility ☐ Broker / Farmer / Other (identify) _____ (please circle one)

Contact information of : Composting Facility, Broker, Farmer, or Other (as identified above):

Cain Trucking, Inc. 23004 Road 140 Tulare 93274
Name Number and Street City Zip Code Phone Number

Manure/Process Wastewater Destination Address or Assessor's Parcel Number:

7559 Ave. 152 Tipton 93272
Number and Street City Zip Code Assessor's Parcel Number

Dates Hauled: July 12th - 14th, 2023

Amount Hauled:

Enter the amount of manure hauled in tons or cubic yards (indicate the units used), the manure solids content (if amount reported in tons) or manure density (if amount reported in cubic yards), and the method used to calculate the amount:

- Manure: 4,587.50 ☒ Tons ☐ Cubic Yards (indicate which units used)
- Manure Moisture % : 9.2%
- Method used to determine amount of manure: _____

Enter the amount of process wastewater hauled in gallons and the method used to determine the amount.

- Process Wastewater: _____ Gallons
- Method used to determine volume of process wastewater: _____

Written Agreement:

Does the Operator have a written agreement (in compliance with Land Application Specification C.2 of Waste Discharge Requirements General Order No. R5-2007-0035) with any party that receives process wastewater from the Operator for its own use? (please check one)

☐ Yes ☐ No

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.

 (Operator shall provide initials here to acknowledge this requirement).

Certification:

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, 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 a fine and imprisonment for knowing violations.

Operator's Signature: Paul Beno Date: 2/08/2024

Hauler's Signature: Paul Beno Date: 6/28/2024
DocuSigned by: 7CF254D409A74C6...

March 21, 2023

Innovative Ag Services, LLC
 1201 Delta View Road Suite 5
 Hanford, CA 93230
Lab No. : VI 2340853**Customer No. : 4018573****Reference : 40169**

Laboratory Report

Introduction: This report package contains a total of 6 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
W9	02/09/2023	02/09/2023	VI 2340853-001	AGW
W5	02/09/2023	02/09/2023	VI 2340853-002	AGW

Sampling and Receipt Information:

All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples were received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the associated Chain of Custody and Condition Upon Receipt Form.


Quality Control: All samples were prepared and analyzed according to established quality control criteria. Any exceptions are noted in the Quality Control Section of this report.

Test Summary

	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
EPA 200.7	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
EPA 300.0	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
EPA 351.2	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2540 C	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

Certification: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above and in the QC Section. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature. This report shall not be reproduced except in full, without the written approval of the laboratory.

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**

 Digitally signed by Kelly A. Dunnahoo, B.S.
 Title: Laboratory Director
 Date: 2023-03-21

Section: Case Narrative

Page 1 of 6

Page 1 of 6

Corporate Offices & Laboratory

 853 Corporation Street
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 CA ELAP Certification No. 2810

March 21, 2023

Innovative Ag Services, LLC
 1201 Delta View Road Suite 5
 Hanford, CA 93230

Description : W9
 Project : 0241 Pacific Sun Dairy

Lab No. : VI 2340853-001
 Customer No. : 4018573
 Reference : 40169
 Sampled On : February 9, 2023 at 13:00
 Sampled By : Sean
 Received On : February 9, 2023 at 15:00
 Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	02/23/2023	09:54	sta	EPA 351.2	02/26/2023	20:56	lcr
Nitrate Nitrogen	ND	0.4	mg/L		1	U	02/10/2023	13:50	lfs	SM 4500-NO3 F	02/10/2023	15:13	lfs
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	UI	02/23/2023	09:54	sta	EPA 351.2	02/26/2023	20:56	lcr
Nitrate + Nitrite as N	ND	0.4	mg/L		1	U	02/10/2023	13:50	lfs	SM 4500-NO3 F	02/10/2023	15:13	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	02/23/2023	09:54	sta	EPA 351.2	02/26/2023	20:56	lcr
Conductivity	288	1	umhos/cm		1		02/22/2023	12:54	sta		02/22/2023	12:54	sta
Solids, Total Dissolved (TDS)	220	20	mg/L		1		02/13/2023	11:52	ctl	SM 2540 C	02/14/2023	12:21	ctl

DQF Flags Definition:

- U Constituent results were non-detect.
- I The MS/MSD did not meet QC criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution

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March 21, 2023

Innovative Ag Services, LLC
 1201 Delta View Road Suite 5
 Hanford, CA 93230

Description : W5
 Project : 0241 Pacific Sun Dairy

Lab No. : VI 2340853-002
 Customer No. : 4018573
 Reference : 40169
 Sampled On : February 9, 2023 at 13:10
 Sampled By : Sean
 Received On : February 9, 2023 at 15:00
 Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO ₃)	400	10	mg/L		1		02/13/2023	17:38	amm	SM 4500-H+B	02/14/2023	02:16	amm
Bicarbonate	480	10	mg/L		1		02/13/2023	17:38	amm	SM 4500-H+B	02/14/2023	02:16	amm
Carbonate	ND	10	mg/L		1	U	02/13/2023	17:38	amm	SM 4500-H+B	02/14/2023	02:16	amm
Hydroxide	ND	10	mg/L		1	U	02/13/2023	17:38	amm	SM 4500-H+B	02/14/2023	02:16	amm
Chloride	43	1	mg/L		1		02/10/2023	14:20	ldm	EPA 300.0	02/11/2023	03:55	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	02/23/2023	09:54	sta	EPA 351.2	02/26/2023	19:55	lcr
Nitrate Nitrogen	30.8	0.4	mg/L		1		03/09/2023	15:00	lfs	SM 4500-NO ₃ F	03/09/2023	16:54	lfs
Nitrogen, Total as Nitrogen	30.8	0.5	mg/L		1	l	02/23/2023	09:54	sta	EPA 351.2	02/26/2023	19:55	lcr
Nitrate + Nitrite as N	30.8	0.4	mg/L		1		03/09/2023	15:00	lfs	SM 4500-NO ₃ F	03/09/2023	16:54	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	02/23/2023	09:54	sta	EPA 351.2	02/26/2023	19:55	lcr
Conductivity	1400	1	umhos/cm		1		02/13/2023	17:38	amm	SM 4500-H+B	02/14/2023	02:16	amm
Sulfate Sulfur	42.4	0.17	mg/L		1		02/10/2023	14:20	ldm	EPA 300.0	02/11/2023	03:55	ldm
Solids, Total Dissolved (TDS)	1010	20	mg/L		1		02/13/2023	11:31	ctl	SM 2540 C	02/14/2023	13:09	ctl
Calcium	125	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	17:49	ac
Magnesium	18	1	mg/L		1	l	02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	17:49	ac
Sodium	184	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	17:49	ac

DQF Flags Definition:

- U Constituent results were non-detect.
- l The MS/MSD did not meet QC criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution

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March 21, 2023
Innovative Ag Services, LLC

Lab No. : VI 2340853
 Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals Calcium	200.7	02/23/2023:202002EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	-71.2 %	<¼	
			MSD	mg/L	12.00	50.4 %	<¼	
		(CC 2380566-001)	MSRPD	mg/L	0.8000	15.7 %	≤20.0	
			MS	mg/L	12.00	-81.6 %	<¼	
			MSD	mg/L	12.00	-76.0 %	<¼	
			MSRPD	mg/L	0.8000	0.8 %	≤20.0	
Magnesium	200.7	02/23/2023:202002EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	99.5 %	85-115	
			MS	mg/L	12.00	13.9 %	75-125	435
			MSD	mg/L	12.00	71.5 %	75-125	435
		(CC 2380566-001)	MSRPD	mg/L	0.8000	15.5 %	≤20	
			MS	mg/L	12.00	-4.1 %	75-125	435
			MSD	mg/L	12.00	-11.4 %	75-125	435
			MSRPD	mg/L	0.8000	1.9 %	≤20	
Sodium	200.7	02/23/2023:202002EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	98.4 %	85-115	
			MS	mg/L	12.00	-162 %	<¼	
			MSD	mg/L	12.00	1540 %	<¼	
		(CC 2380566-001)	MSRPD	mg/L	0.8000	15.8 %	≤20.0	
			MS	mg/L	12.00	-2490 %	<¼	
			MSD	mg/L	12.00	-3160 %	<¼	
			MSRPD	mg/L	0.8000	7.6 %	≤20.0	

Definition

<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
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March 21, 2023

Innovative Ag Services, LLC

Lab No. : VI 2340853

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO ₃)	2320B	02/13/2023:201597AMM	ND	mg/L		0.2%	10	435
Bicarbonate	2320B	(VI 2340773-001)	Dup	mg/L		0.1%	10	
E. C.	2320B	(VI 2340773-001)	Dup	umhos/cm		0.2%	5	
	2510B	02/22/2023:201944STA	Blank	umhos/cm		ND	<1	
		(VI 2341053-002)	Dup	umhos/cm		0.5%	5	
Solids, Total Dissolved	2540CE	02/13/2023:201554CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	990.8	103 %	90-110	
			Dup	mg/L		0.1%	5	
			Dup	mg/L		1.4%	5	
		(VI 2340853-002)	Blank	mg/L		ND	<20	
			LCS	mg/L	990.8	102 %	90-110	
			Dup	mg/L		2.9%	5	
			Dup	mg/L		1.1%	5	
Chloride	300.0	02/10/2023:201534LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.9 %	90-110	
			MS	mg/L	50.00	92.0 %	85-121	
			MSD	mg/L	50.00	97.6 %	85-121	
		(STK2331919-001)	MSRPD	mg/L	10.00	5.6%	≤19	
			MS	mg/L	50.00	92.0 %	85-121	
			MSD	mg/L	50.00	92.4 %	85-121	
			MSRPD	mg/L	10.00	0.4%	≤19	
		(STK2331880-001)	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	101 %	90-110	
			MS	mg/L	100.0	92.7 %	82-124	
			MSD	mg/L	100.0	98.4 %	82-124	
Sulfate Sulfur	300.0	02/10/2023:201534LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	101 %	90-110	
			MS	mg/L	100.0	92.7 %	82-124	
			MSD	mg/L	100.0	98.4 %	82-124	
		(STK2331919-001)	MSRPD	mg/L	10.00	5.6%	≤23	
			MS	mg/L	100.0	95.5 %	82-124	
			MSD	mg/L	100.0	96.2 %	82-124	
			MSRPD	mg/L	10.00	0.6%	≤23	
		(STK2331880-001)	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	95.8%	73-124	
			MS	mg/L	12.00	83.8%	54-136	
			MSD	mg/L	12.00	82.7%	54-136	
Nitrogen, Total Kjeldahl	351.2	02/23/2023:201997STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	95.8%	73-124	
			MS	mg/L	12.00	83.8%	54-136	
			MSD	mg/L	12.00	82.7%	54-136	
		(SP 2302092-001)	MSRPD	mg/L	12.00	1.4%	≤27	
			MS	mg/L	12.00	44.2%	<1/4	
			MSD	mg/L	12.00	34.0%	54-136	435
			MSRPD	mg/L	12.00	26.2%	≤27	
		(VI 2340853-002)	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	95.3%	80-120	
			MS	mg/L	5.609	100%	66-125	
			MSD	mg/L	5.609	97.2%	66-125	
Nitrate + Nitrite as N	4500NO3F	02/10/2023:201493LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	95.3%	80-120	
			MS	mg/L	5.609	100%	66-125	
			MSD	mg/L	5.609	97.2%	66-125	
	4500NO3F	03/09/2023:202614LFS	MSRPD	mg/L	5.609	2.2%	≤30.4	
			Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.3%	80-120	
			MS	mg/L	5.609	101%	66-125	
			MSD	mg/L	5.609	102%	66-125	
			MSRPD	mg/L	5.609	1.0%	≤30.4	
Nitrate Nitrogen	4500NO3F	02/10/2023:201493LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	95.3%	80-120	
			MS	mg/L	5.609	100%	66-125	

March 21, 2023
Innovative Ag Services, LLC

Lab No. : VI 2340853
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
		(CH 2370927-001)	MSD	mg/L	5.609	97.2%	66-125	
			MSRPD	mg/L	5.609	2.2%	≤30.4	
	4500NO3F	03/09/2023:202614LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.3%	80-120	
			MS	mg/L	5.609	101%	66-125	
		(CH 2371569-001)	MSD	mg/L	5.609	102%	66-125	
			MSRPD	mg/L	5.609	1.0%	≤30.4	

Definition

- Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
- Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
- LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
- MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

Explanation

- 435 : Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.



Laboratory Analysis Work Order

N° 40169

ID: # 0241

2340853

LABORATORY: FEEL

SITE NAME: PACIFIC SUN DAIRY

Authorized Copy Release to:

Billing: JR

Innovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

- W1 EC, NO₃N (Dom)
~~W2~~ EC, NO₃N, TDS, TN (Irr) *W2*
 W3 NH₄-N (Ammonium)
 W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)
~~W5~~ EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM) *W5*
 W6 NO₃N, NO₂ (Dom ILRP, Annually)
 W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
 W8 Other: _____

Process Waste Water (lagoon)

- L1 EC, NH₄N, TKN, TP, TK, TDS (Quarterly)
 L2 EC, NO₃N, NH₄N, TKN, TP, TK, TDS, pH (Annually)
 L3 L1 + Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Biennially)
 L4 Other: _____

Manure

- M1 TN, TP, TK, %M (2/year)
 M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
 M3 Other: _____

Plant Tissue

- P1 TN, NO₃N, PO₄P, K (Mid Season - Wheat)
 P2 TN, P, K (Mid-season - Corn)
 P3 TN, TP, TK, Ash, %M (At Harvest)
 P4 TN, %M
 P5 % Moisture
 P6 NIR
 P7 Other: _____

Soil

- S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO₃N, PO₄P, K-AA, Zn, Mn, Fe, Cu, SO₄S
 S2 S1 + CEC, CaCO₃, OM, C:N, TN
 S3 NO₃N, NH₄N
 S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
						NH ₃ N*	pH	Temp
1	<u>W9</u>	<u>W10</u>	<u>W2</u>	<u>2/9/23 1:00</u>	<u>SEAN</u>	<u>9</u>		
2	<u>W5</u>	<u>W2</u>	<u>W5</u>	<u>2/9/23 1:10</u>	<u>SEAN</u>	<u>9</u>		
3								
4								
5								
6								
7								
8								

* Field Test of ammonium nitrogen may only be made by a trained technician. Positive test to be analyzed for ammonium nitrogen by the laboratory.

All samples are to follow the procedures noted in the Sampling & Analysis Plan of the NMP and the RWQCB specifications. Any samples taken outside of these procedures shall provide the procedures on the notes below. Additionally, if any preservatives are used in the collections or processing of samples, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	<u>[Signature]</u>	<u>JR</u>	<u>2/9/23 1500</u>	<u>2/9/23 3:00</u>
2 nd	<u>[Signature]</u>	<u>FEEL</u>	<u>2/9/23 1500</u>	<u>2/9/23 1730</u>
3 rd	<u>[Signature]</u>	<u>JR</u>	<u>2/9/23 1730</u>	
4 th	<u>[Signature]</u>	<u>JR</u>	<u>2/9/23 1730</u>	

LABORATORY USE ONLY

Logged In By: _____ Total Samples: _____ Laboratory #: _____

GLS WAC 2/10/23 1215

March 15, 2023

Innovative Ag Services, LLC
 1201 Delta View Road Suite 5
 Hanford, CA 93230
Lab No. : VI 2341046**Customer No. : 4018573****Reference : 40175**

Laboratory Report

Introduction: This report package contains a total of 6 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: Results for each sample submitted.
Quality Control	(3 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
W8	02/17/2023	02/17/2023	VI 2341046-001	AGW
W6	02/17/2023	02/17/2023	VI 2341046-002	AGW

Sampling and Receipt Information:

All samples were received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. All samples were received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the associated Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to established quality control criteria. Any exceptions are noted in the Quality Control Section of this report.

Test Summary

EPA 200.7	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
EPA 300.0	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
EPA 351.2	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2540 C	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

Certification: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above and in the QC Section. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature. This report shall not be reproduced except in full, without the written approval of the laboratory.

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**

 Digitally signed by Kelly A. Dunnahoo, B.S.
 Title: Laboratory Director
 Date: 2023-03-16

Section: Case Narrative

Page 1 of 6

Page 1 of 6

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March 15, 2023

Innovative Ag Services, LLC
 1201 Delta View Road Suite 5
 Hanford, CA 93230

Description : W8
 Project : 0241 Pacific Sun Dairy

Lab No. : VI 2341046-001
 Customer No. : 4018573
 Reference : 40175
 Sampled On : February 17, 2023 at 14:00
 Sampled By : Sean
 Received On : February 17, 2023 at 15:00
 Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO ₃)	350	10	mg/L		1		02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:11	amm
Bicarbonate	430	10	mg/L		1		02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:11	amm
Carbonate	ND	10	mg/L		1	U	02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:11	amm
Hydroxide	ND	10	mg/L		1	U	02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:11	amm
Chloride	66	1	mg/L		1	lb	02/22/2023	17:18	ldm	EPA 300.0	02/22/2023	19:50	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	03/08/2023	09:10	lcr	EPA 351.2	03/09/2023	17:04	lcr
Nitrate Nitrogen	31.9	0.4	mg/L		1		02/24/2023	11:00	lfs	SM 4500-NO ₃ F	02/24/2023	12:47	lfs
Nitrogen, Total as Nitrogen	31.9	0.5	mg/L		1	l	03/08/2023	09:10	lcr	EPA 351.2	03/09/2023	17:04	lcr
Nitrate + Nitrite as N	31.9	0.4	mg/L		1		02/24/2023	11:00	lfs	SM 4500-NO ₃ F	02/24/2023	12:47	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	03/08/2023	09:10	lcr	EPA 351.2	03/09/2023	17:04	lcr
Conductivity	1210	1	umhos/cm		1		02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:11	amm
Sulfate Sulfur	36.2	0.17	mg/L		1	l	02/22/2023	17:18	ldm	EPA 300.0	02/22/2023	19:50	ldm
Solids, Total Dissolved (TDS)	840	20	mg/L		1	I	02/20/2023	12:31	ctl	SM 2540 C	02/21/2023	10:49	ctl
Calcium	109	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	14:53	ac
Magnesium	19	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	14:53	ac
Sodium	144	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	14:53	ac

DQF Flags Definition:

- U Constituent results were non-detect.
- l The MS/MSD did not meet QC criteria.
- b The Blank was positive for constituent but less than the PQL
- I The RPD for the laboratory duplicate exceeded laboratory criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution

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March 15, 2023

Innovative Ag Services, LLC
 1201 Delta View Road Suite 5
 Hanford, CA 93230

Description : W6
 Project : 0241 Pacific Sun Dairy

Lab No. : VI 2341046-002
 Customer No. : 4018573
 Reference : 40175
 Sampled On : February 17, 2023 at 14:10
 Sampled By : Sean
 Received On : February 17, 2023 at 15:00
 Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO ₃)	390	10	mg/L		1		02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:37	amm
Bicarbonate	480	10	mg/L		1		02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:37	amm
Carbonate	ND	10	mg/L		1	U	02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:37	amm
Hydroxide	ND	10	mg/L		1	U	02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:37	amm
Chloride	47	1	mg/L		1	lb	02/22/2023	12:20	ldm	EPA 300.0	02/22/2023	15:09	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	03/08/2023	09:10	lcr	EPA 351.2	03/09/2023	17:06	lcr
Nitrate Nitrogen	39.0	0.4	mg/L		1		02/24/2023	13:00	lfs	SM 4500-NO ₃ F	02/24/2023	13:50	lfs
Nitrogen, Total as Nitrogen	39.0	0.5	mg/L		1	l	03/08/2023	09:10	lcr	EPA 351.2	03/09/2023	17:06	lcr
Nitrate + Nitrite as N	39.0	0.4	mg/L		1		02/24/2023	13:00	lfs	SM 4500-NO ₃ F	02/24/2023	13:50	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	03/08/2023	09:10	lcr	EPA 351.2	03/09/2023	17:06	lcr
Conductivity	1290	1	umhos/cm		1		02/20/2023	21:40	amm	SM 4500-H+B	02/21/2023	00:37	amm
Sulfate Sulfur	40.2	0.17	mg/L		1	l	02/22/2023	12:20	ldm	EPA 300.0	02/22/2023	15:09	ldm
Solids, Total Dissolved (TDS)	920	20	mg/L		1	I	02/20/2023	12:31	ctl	SM 2540 C	02/21/2023	11:11	ctl
Calcium	116	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	15:00	ac
Magnesium	18	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	15:00	ac
Sodium	162	1	mg/L		1		02/23/2023	06:49	ejc	EPA 200.7	02/27/2023	15:00	ac

DQF Flags Definition:

- U Constituent results were non-detect.
- l The MS/MSD did not meet QC criteria.
- b The Blank was positive for constituent but less than the PQL
- I The RPD for the laboratory duplicate exceeded laboratory criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution

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March 15, 2023

Innovative Ag Services, LLC

Lab No. : VI 2341046

Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals Calcium	200.7	02/23/2023:201999EJC (SP 2302213-001) (SP 2302382-001)	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	103 %	85-115	
			MS	mg/L	12.00	72.1 %	<¼	
			MSD	mg/L	12.00	126 %	<¼	
			MSRPD	mg/L	0.8000	3.4%	≤20.0	
			MS	mg/L	12.00	-14.1 %	<¼	
			MSD	mg/L	12.00	22.2 %	<¼	
			MSRPD	mg/L	0.8000	4.1%	≤20.0	
			Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	99.4 %	85-115	
Magnesium	200.7	02/23/2023:201999EJC (SP 2302213-001) (SP 2302382-001)	MS	mg/L	12.00	71.6 %	<¼	
			MSD	mg/L	12.00	94.9 %	75-125	
			MSRPD	mg/L	0.8000	1.6%	≤20	
			MS	mg/L	12.00	-21.4 %	<¼	
			MSD	mg/L	12.00	-9.2 %	<¼	
			MSRPD	mg/L	0.8000	2.1%	≤20	
Sodium	200.7	02/23/2023:201999EJC (SP 2302213-001) (SP 2302382-001)	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101 %	85-115	
			MS	mg/L	12.00	565 %	<¼	
			MSD	mg/L	12.00	-594 %	<¼	
			MSRPD	mg/L	0.8000	11.8%	≤20.0	
			MS	mg/L	12.00	-811 %	<¼	
			MSD	mg/L	12.00	-827 %	<¼	
			MSRPD	mg/L	0.8000	1.2%	≤20.0	

Definition

<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

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March 15, 2023

Innovative Ag Services, LLC

Lab No. : VI 2341046

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO ₃)	2320B	02/20/2023:201884AMM	ND	mg/L		0.7%	10	
Bicarbonate	2320B	(CH 2371138-006)	Dup	mg/L		0.7%	10	
E. C.	2320B	(CH 2371138-006)	Dup	umhos/cm		0%	5	
Solids, Total Dissolved	2540CE	02/20/2023:201833CTL	Blank	mg/L		ND	<20	
		(STK2332053-010)	LCS	mg/L	991.7	103 %	90-110	
		(STK2332053-010)	Dup	mg/L		5.6%	5	440
			Dup	mg/L		1.7%	5	
Chloride	300.0	02/22/2023:201979LDM	Blank	mg/L		1	<1	
	300.0	02/22/2023:202112LDM	Blank	mg/L		1	<1	
			LCS	mg/L	25.00	100 %	90-110	
	300.0	02/22/2023:201979LDM	LCS	mg/L	25.00	105 %	90-110	
			MS	mg/L	50.00	81.4 %	85-121	435
	300.0	02/22/2023:202112LDM	MS	mg/L	50.00	87.6 %	85-121	
		(VI 2341046-002)	MSD	mg/L	50.00	83.9 %	85-121	435
	300.0	(VI 2341046-001)	MSD	mg/L	50.00	86.3 %	85-121	
	300.0	02/22/2023:202112LDM	MSRPD	mg/L	10.00	2.0%	≤19	
	300.0	02/22/2023:201979LDM	MSRPD	mg/L	10.00	2.3%	≤19	
			MS	mg/L	50.00	88.3 %	85-121	
	300.0	02/22/2023:202112LDM	MS	mg/L	50.00	53.4 %	85-121	435
		(SP 2302541-001)	MSD	mg/L	50.00	53.4 %	85-121	435
	300.0	(SP 2302483-001)	MSD	mg/L	50.00	84.7 %	85-121	
			MSRPD	mg/L	10.00	1.8%	≤19	
	300.0	02/22/2023:202112LDM	MSRPD	mg/L	10.00	0.0%	≤19	
Sulfate Sulfur	300.0	02/22/2023:202112LDM	Blank	mg/L		ND	<0.5	
	300.0	02/22/2023:201979LDM	Blank	mg/L		ND	<0.5	
	300.0	02/22/2023:202112LDM	LCS	mg/L	50.00	102 %	90-110	
	300.0	02/22/2023:201979LDM	LCS	mg/L	50.00	109 %	90-110	
			MS	mg/L	100.0	87.4 %	82-124	
	300.0	02/22/2023:202112LDM	MS	mg/L	100.0	84.2 %	82-124	
		(VI 2341046-002)	MSD	mg/L	100.0	80.2 %	82-124	435
	300.0	(VI 2341046-001)	MSD	mg/L	100.0	92.6 %	82-124	
			MSRPD	mg/L	10.00	2.6%	≤23	
	300.0	02/22/2023:202112LDM	MSRPD	mg/L	10.00	1.9%	≤23	
			MS	mg/L	100.0	62.6 %	82-124	435
	300.0	02/22/2023:201979LDM	MS	mg/L	100.0	60.0 %	82-124	435
	300.0	(SP 2302541-001)	MSD	mg/L	100.0	62.6 %	82-124	435
	300.0	(SP 2302483-001)	MSD	mg/L	100.0	66.7 %	82-124	435
			MSRPD	mg/L	10.00	1.7%	≤23	
	300.0	02/22/2023:202112LDM	MSRPD	mg/L	10.00	0.005%	≤23	
Nitrogen, Total Kjeldahl	351.2	03/08/2023:202492LCR	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	90.8%	73-124	
			MS	mg/L	12.00	46.1%	<¼	
		(VI 2341047-001)	MSD	mg/L	12.00	74.3%	54-136	
			MSRPD	mg/L	12.00	47.3%	≤27	435
			MS	mg/L	12.00	83.0%	54-136	
		(VI 2341047-003)	MSD	mg/L	12.00	41.6%	54-136	435
			MSRPD	mg/L	12.00	67.2%	≤27	435
Nitrate + Nitrite as N	4500NO3F	02/24/2023:202037LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.1%	80-120	
			MS	mg/L	5.609	93.7%	66-125	

March 15, 2023

Innovative Ag Services, LLC

Lab No. : VI 2341046

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Nitrate Nitrogen	4500NO3F	(SP 2302700-001)	MSD	mg/L	5.609	94.5%	66-125	
			MSRPD	mg/L	5.609	0.4%	≤30.4	
			Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	96.4%	80-120	
		(SP 2302733-001)	MS	mg/L	5.609	95.5%	66-125	
			MSD	mg/L	5.609	94.5%	66-125	
			MSRPD	mg/L	5.609	0.6%	≤30.4	
			Blank	mg/L		ND	<0.4	
		(SP 2302700-001)	LCS	mg/L	11.22	97.1%	80-120	
			MS	mg/L	5.609	93.7%	66-125	
			MSD	mg/L	5.609	94.5%	66-125	
			MSRPD	mg/L	5.609	0.4%	≤30.4	
		(SP 2302733-001)	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	96.4%	80-120	
			MS	mg/L	5.609	95.5%	66-125	
			MSD	mg/L	5.609	94.5%	66-125	
			MSRPD	mg/L	5.609	0.6%	≤30.4	

Definition

Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
440	: Sample nonhomogeneity may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

**Laboratory Analysis Work Order****N° 40175**ID: # 02412341046LABORATORY: FGLSITE NAME: Pacific Sun DairyBilling: IAS

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:**Irrigation/Ground Water (ELAP Standards)****W1** EC, NO₃N (Dom)**W2** EC, NO₃N, TDS, TN (Irr)**W3** NH₄-N (Ammonium)**W4** EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)**W5** EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)**W6** NO₃N, NO₂ (Dom ILRP, Annually)**W7** Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)**W8** Other: _____**Process Waste Water (lagoon)****L1** EC, NH₄N, TKN, TP, TK, TDS (Quarterly)**L2** EC, NO₃N, NH₄N, TKN, TP, TK, TDS, pH (Annually)**L3** L1 + Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Biennially)**L4** Other: _____**Manure****M1** TN, TP, TK, %M (2/year)**M2** TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)**M3** Other: _____**Plant Tissue****P1** TN, NO₃N, PO₄P, K (Mid Season - Wheat)**P2** TN, P, K (Mid-season - Corn)**P3** TN, TP, TK, Ash, %M (At Harvest)**P4** TN, %M**P5** % Moisture**P6** NIR**P7** Other: _____**Soil****S1** SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO₃N, PO₄P, K-AA, Zn, Mn, Fe, Cu, SO₄S**S2** S1 + CEC, CaCO₃, OM, C:N, TN**S3** NO₃N, NH₄N**S4** Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
						NH ₃ N *	pH	Temp
1	W8	IRR	W5	2/17/23 2:00	SEAN	✓		
2	W6	IRR	W5	2/17/23 2:10	SEAN	✓		
3								
4								
5								
6								
7								
8								

* Field Test of ammonium nitrogen may only be made by a trained technician. Positive test to be analyzed for ammonium nitrogen by the laboratory.

All samples are to follow the procedures noted in the Sampling & Analysis Plan of the NMP and the RWQCB specifications. Any samples taken outside of these procedures shall provide the procedures on the notes below. Additionally, if any preservatives are used in the collections or processing of samples, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st		FGL	2/17/23 1500	2/17/23 3:00
2 nd		FGL	2/17/23 1500	2/17/23 1730
3 rd		FGL	2/17/23 1730	
4 th		FGL	2/17/23 1730	

LABORATORY USE ONLY

Logged In By: _____

Total Samples: _____

Laboratory #: _____

601
2/17/23
W5

November 6, 2023

Innovative Ag Services, LLC
 1201 Delta View Road
 Suite 5
 Hanford, CA 93230

Lab No. : VI 2346949**Customer No. : 4018573****Reference : 41500**

Laboratory Report

Introduction: This report package contains a total of 3 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
W4	10/13/2023	10/13/2023	VI 2346949-001	AGW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the associated Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to established quality control criteria. Any exceptions are noted in the Quality Control Section of this report.

Test Summary

EPA 351.2	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2320 B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2540 C	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

Certification: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above and in the QC Section. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature. This report shall not be reproduced except in full, without the written approval of the laboratory.

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**
 Digitally signed by Kelly A. Dunnahoo, B.S.
 Title: Laboratory Director
 Date: 2023-11-07

November 6, 2023

Innovative Ag Services, LLC

1201 Delta View Road

Suite 5

Hanford, CA 93230

Description : W4

Project : 0241 Pacific Sun Dairy

Lab No. : VI 2346949-001

Customer No. : 4018573

Reference : 41500

Sampled On : October 13, 2023 at 11:00

Sampled By : Zeke

Received On : October 13, 2023 at 15:50

Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	10/27/2023	07:29	sta	EPA 351.2	11/03/2023	16:38	lcr
Nitrate Nitrogen	24.4	0.4	mg/L		1		10/17/2023	13:00	lfs	SM 4500-NO3 F	10/17/2023	15:45	lfs
Nitrogen, Total as Nitrogen	24.4	0.5	mg/L		1	1	10/27/2023	07:29	sta	Calc.	11/03/2023	16:38	lcr
Nitrate + Nitrite as N	24.4	0.4	mg/L		1		10/17/2023	13:00	lfs	SM 4500-NO3 F	10/17/2023	15:45	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	10/27/2023	07:29	sta	EPA 351.2	11/03/2023	16:38	lcr
Conductivity	848	1	umhos/cm		1		10/19/2023	09:41	krh	SM 2320 B	10/19/2023	14:39	krh
Solids, Total Dissolved (TDS)	560	20	mg/L		1		10/17/2023	10:30	ctl	SM 2540 C	10/18/2023	11:00	ctl

DQF Flags Definition:

- U Constituent results were non-detect.
- 1 The MS/MSD did not meet QC criteria.

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution

Corporate Offices & Laboratory

853 Corporation Street

Santa Paula, CA 93060

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Env FAX: (805)525-4172 / Ag FAX: (805)392-2063

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FAX: (209)942-0423

CA ELAP Certification No. 1563

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TEL: (559)734-9473

FAX: (559)734-8435

CA ELAP Certification No. 2810

November 6, 2023
Innovative Ag Services, LLC

 Lab No. : VI 2346949
 Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2346815-001)	Dup	umhos/cm		0.1%	5	
Solids, Total Dissolved	2540CE	10/17/2023:211713CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	103%	90-110	
		(VI 2346950-002)	Dup	mg/L		2.09%	5	
		(VI 2346950-002)	Dup	mg/L		0.6%	5	
Nitrogen, Total Kjeldahl	351.2	10/27/2023:212161STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	92.2%	73-124	
			MS	mg/L	12.00	78.8%	<1/4	406
		(STK2354204-006)	MSD	mg/L	12.00	82.0%	<1/4	
			MSRPD	mg/L		4.1%	≤20	
			MS	mg/L	12.00	87.2%	90-110	435
		(STK2354204-008)	MSD	mg/L	12.00	88.1%	90-110	435
			MSRPD	mg/L		1.0%	≤20	
Nitrate + Nitrite as N	4500NO3F	10/17/2023:211742LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	101%	80-120	
			MS	mg/L	5.609	89.1%	66-125	
		(VI 2346971-001)	MSD	mg/L	5.609	91.9%	66-125	
			MSRPD	mg/L		1.0%	≤30.4	
Nitrate Nitrogen	4500NO3F	10/17/2023:211742LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	101%	80-120	
			MS	mg/L	5.609	89.1%	66-125	
		(VI 2346971-001)	MSD	mg/L	5.609	91.9%	66-125	
			MSRPD	mg/L		1.0%	≤30.4	

Definition

- Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
- DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.
- Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
- LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
- MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

Explanation

- 406 : Matrix Spike (MS) not within the Acceptance Range (AR) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.
- 435 : Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.



Laboratory Analysis Work Order

N° 41500

ID: # 0241
SITE NAME: PACIFIC SUN DAIRY
Billing: IAS

5.9°C ID# 2346949
Roe TH407

LABORATORY: F6L
Authorized Copy Release to:
 Innovative Ag Services LLC
 (559) 587-2800

ANALYSIS TO BE COMPLETED:
Irrigation/Ground Water (ELAP Standards)

- W1** EC, NO₃N (Dom)
W2 EC, NO₃N, TDS, TN (Irr)
W3 NH₄-N (Ammonium)
W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)
W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)
W6 NO₃N, NO₂ (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
W8 Other: _____

Plant Tissue

- P1** TN, NO₃N, PO₄P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Process Waste Water (lagoon)

- L1** EC, NH₄N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO₃N, NH₄N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Biennially)
L4 Other: _____

Manure

- M1** TN, TP, TK, %M (2/year)
M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
M3 Other: _____

Soil

- S1** SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO₃N, PO₄P, K-AA, Zn, Mn, Fe, Cu, SO₄S
S2 S1 + CEC, CaCO₃, OM, C:N, TN
S3 NO₃N, NH₄N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
						NH ₃ N *	pH	Temp
1	W4	IRR	W2	10-13-23 11:00	Zeke			
2								
3								
4								
5								
6								
7								
8								

* Field Test of ammonium nitrogen may only be made by a trained technician. Positive test to be analyzed for ammonium nitrogen by the laboratory.

All samples are to follow the procedures noted in the Sampling & Analysis Plan of the NMP and the RWQCB specifications. Any samples taken outside of these procedures shall provide the procedures on the notes below. Additionally, if any preservatives are used in the collections or processing of samples, please note below.

NOTES:

10/14/23
 10/16

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st		IAS		10-13-23 / 2:00
2 nd		FGL	10-13-23 15:35	
3 rd		FGL		10-13-23 15:50
4 th		FGL	10-13-2023 1550	

LABORATORY USE ONLY

Logged In By: GLS
 10-13-2023

Total Samples: 1730

Laboratory #: _____

January 2, 2024

Innovative Ag Services, LLC
 1201 Delta View Road
 Suite 5
 Hanford, CA 93230

Lab No. : VI 2348759**Customer No. : 4018573****Reference : 42229**

Laboratory Report

Introduction: This report package contains a total of 3 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
WI DW1	12/20/2023	12/20/2023	VI 2348759-001	DW

Sampling and Receipt Information:

The Sample was received in acceptable condition and within temperature requirements, unless noted on the Condition Upon Receipt (CUR) form. The Sample was received, prepared and analyzed within the method specified holding times. All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the associated Chain of Custody and Condition Upon Receipt Form.


Quality Control: All samples were prepared and analyzed according to established quality control criteria. Any exceptions are noted in the Quality Control Section of this report.

Test Summary

SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

Certification: I certify that this data package is in compliance with ELAP standards, both technically and for completeness, except for any conditions listed above and in the QC Section. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature. This report shall not be reproduced except in full, without the written approval of the laboratory.

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.
 Title: Laboratory Director
 Date: 2024-01-03

January 2, 2024

Innovative Ag Services, LLC

1201 Delta View Road

Suite 5

Hanford, CA 93230

Description : W1

Project : 0241 Pacific Sun Dairy

Lab No. : VI 2348759-001

Customer No. : 4018573

Reference : 42229

Sampled On : December 20, 2023 at 14:23

Sampled By : Frank

Received On : December 20, 2023 at 16:04

Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	1.9	0.4	mg/L	10	1		12/21/2023	13:00	lfs	SM 4500-NO3 F	12/21/2023	15:07	lfs
Conductivity	311	1	umhos/cm	1600 ²	1		12/28/2023	09:35	krh	SM 4500-H+B	12/28/2023	11:01	krh

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level, Dil.=Dilution

MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

Corporate Offices & Laboratory

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CA ELAP Certification No. 2775

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TEL: (559)734-9473

FAX: (559)734-8435

CA ELAP Certification No. 2810

January 2, 2024

Innovative Ag Services, LLC

Lab No. : VI 2348759

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2348743-001)	Dup	umhos/cm		0.6%	5	
Nitrate Nitrogen	4500NO3F	12/21/2023:214418LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	98.6%	80-120	
			MS	mg/L	5.609	99.8%	66-125	
		(SP 2320889-001)	MSD	mg/L	5.609	101%	66-125	
			MSRPD	mg/L		0.8%	≤30.4	

Definition

Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND	: Non-detect - Result was below the DQO listed for the analyte.

Corporate Offices & Laboratory

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 CA ELAP Certification No. 2670

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 FAX: (805)783-2912
 CA ELAP Certification No. 2775

Office & Laboratory

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 Visalia, CA 93291
 TEL: (559)734-9473
 FAX: (559)734-8435
 CA ELAP Certification No. 2810

**Laboratory Analysis Work Order**

N° 42229

ID: # 0241

2348759

LABORATORY: FCLSITE NAME: Pacific Sun DairyBilling: IAS

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:**Irrigation/Ground Water (ELAP Standards)**

- W1 EC, NO₃N (Dom)
 W2 EC, NO₃N, TDS, TN (Irr)
 W3 NH₄-N (Ammonium)
 W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)
 W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)
 W6 NO₃N, NO₂ (Dom ILRP, Annually)
 W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
 W8 Other: _____

201 17.5C # 14407

Process Waste Water (lagoon)

- L1 EC, NH₄N, TKN, TP, TK, TDS (Quarterly)
 L2 EC, NO₃N, NH₄N, TKN, TP, TK, TDS, pH (Annually)
 L3 L1 + Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Biennially)
 L4 Other: _____

Manure

- M1 TN, TP, TK, %M (2/year)
 M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)
 M3 Other: _____

Plant Tissue

- P1 TN, NO₃N, PO₄P, K (Mid Season - Wheat)
 P2 TN, P, K (Mid-season - Corn)
 P3 TN, TP, TK, Ash, %M (At Harvest)
 P4 TN, %M
 P5 % Moisture
 P6 NIR
 P7 Other: _____

Soil

- S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO₃N, PO₄P, K-AA, Zn, Mn, Fe, Cu, SO₄S
 S2 S1 + CEC, CaCO₃, OM, C:N, TN
 S3 NO₃N, NH₄N
 S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
						NH ₃ N*	pH	Temp
1	DW1	Dam	LI1	12/20 2:23	Frank	—		
2								
3								
4								
5								
6								
7								
8								

* Field Test of ammonium nitrogen may only be made by a trained technician. Positive test to be analyzed for ammonium nitrogen by the laboratory.

All samples are to follow the procedures noted in the Sampling & Analysis Plan of the NMP and the RWQCB specifications. Any samples taken outside of these procedures shall provide the procedures on the notes below. Additionally, if any preservatives are used in the collections or processing of samples, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	<u>[Signature]</u>	<u>IAS</u>		12/20/23 3:30
2 nd	<u>AJB</u>	<u>FCL</u>	12/20/23 1532	
3 rd	<u>AJB</u>	<u>FCL</u>		12/20/23 1604
4 th	<u>[Signature]</u>		12/20/23 1604	

LABORATORY USE ONLY

Logged In By: [Signature]Total Samples: 20/23Laboratory #: 601