



# Cowlifornia Dairy LLC

## 2023 Annual Report

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

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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

## Cowlifornia Dairy LLC 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

### Facility Information:

Name of Dairy	Cowlifornia Dairy LLC
Facility Address	3742 Highway 198, Hanford CA 93230

### Owner/Operator as of 12/31/2023

Operator Name	Cowlifornia Dairy LLC
Operator Phone	(559) 707-3766
Owner Name	John de Jong Inc.
Owner Phone	(559) 707-3766

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).

**Cowlifornia Dairy LLC 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).

**Cowlifornia Dairy LLC 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.

**Cowlifornia Dairy LLC 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:



02B1EA0E959941F...

Signature of Operator of Facility

DocuSigned by:



02B1EA0E959941F...

Signature of Owner of Facility

Cowlifornia Dairy LLC

Print Name

6/25/2024

Title and Date

John.de Jong Inc.

Print Name

6/25/2024

Title and Date



INNOVATIVE AG SERVICES

## Cowlifornia Dairy LLC 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			
Hol Milk Cows	850	828	Milk Flushed Lane	1,400	21,013.72	299,197.80	51,377.40	69,510.60	545,809.32
Hol Dry Cows	63	61	Flushed	1,450	890.12	11,132.50	1,558.55	7,347.45	15,710.18
Hol Heifers(15-24)	220	214	Flushed	1,000	2,233.84	29,681.80	4,686.60	14,059.80	55,114.42
Hol Heifers (7-14)	150	146	Flushed	750	1,404.12	13,855.40	2,344.76	7,993.50	17,625.67
Hol Calves (4-6)	125	121	Dry Scrape	300	419.57	6,183.10	1,766.60	3,533.20	2,897.22
Jer Milk Cows	850	828	Milk Flushed Lane	1,000	19,253.89	214,576.20	36,266.40	48,355.20	389,863.80
Jer Dry Cows	64	62	Flushed	1,100	817.59	8,146.80	1,131.50	5,431.20	11,315.00
Jer Heifers (15-24)	220	214	Flushed	700	2,022.95	29,681.80	4,686.60	14,059.80	55,458.10
Jer Heifers (7-14)	150	146	Flushed	600	1,332.18	13,855.40	2,131.60	7,993.50	17,585.70
Jer Calves (4-6)	125	121	Dry Scrape	300	419.57	6,183.10	1,766.60	3,533.20	3,091.55
	<b>2,817</b>	<b>2,741</b>			<b>49,807.55</b>	<b>632,493.90</b>	<b>107,716.61</b>	<b>181,817.45</b>	<b>1,114,470.96</b>

\* 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)**
27,980,605	367.00	62.60	548.25	4,140.00	85,539.79	14,590.71	127,785.26	964,944.75

\* 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).



## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 1

Wheat, 99 Acres Planted on 12/12/2022

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.								
11/15/2022	Corral Solids: Main Corral	5.00	Tons	50.10	1.79	0.80	2.59	%	495		8,843	3,962	12,795	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,386				
01/05/2023	Surface Water: People's	4.46	Acre Inches		0.00			mg/L			0	0	0	0	
01/05/2023	Waste Water: Main Lagoon	0.30	Acre Inches		319.00	69.10	593.00	mg/L		806,483	2,143	464	3,984	23,244	
03/04/2023	Surface Water: People's	4.73	Acre Inches		0.00			mg/L			0	0	0	0	
03/04/2023	Waste Water: Main Lagoon	0.47	Acre Inches		319.00	69.10	593.00	mg/L		1,263,490	3,357	728	6,241	36,416	
05/01/2023	Surface Water: People's	4.69	Acre Inches		0.00			mg/L			0	0	0	0	
05/01/2023	Waste Water: Main Lagoon	0.40	Acre Inches		406.00	74.90	684.00	mg/L		1,075,310	3,636	671	6,127	42,279	
05/16/2023	Harvest	23.70	Tons	65.30	1.21	0.26	1.13	%						19,703	
<b>Acre Inches Applied:</b>		<b>15.05</b>		<b>Totals:</b>					<b>495</b>	<b>3,145,283</b>	<b>19,365</b>	<b>5,825</b>	<b>29,147</b>	<b>101,939</b>	<b>19,703</b>
<b>Season Nitrogen Ratio:</b>				<b>Lbs Per Acre:</b>						<b>196</b>	<b>59</b>	<b>294</b>	<b>1,030</b>	<b>199</b>	

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 1

Corn, 99 Acres Planted on 07/14/2023

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.									
07/01/2023	Corral Solids: Main Corral	4.00	Tons	25.90	1.64	0.73	2.45	%	396	9,625	4,267	14,379	0	0		
07/26/2023	Surface Water: People's	5.93	Acre Inches		0.00			mg/L		0	0	0	0	0		
07/26/2023	Waste Water: Main Lagoon	0.45	Acre Inches	350.00	57.30	414.00		mg/L	1,209,724	3,527	577	4,172	44,742			
08/10/2023	Fertilize - UN32	25.00	Gallons		32.00	0.00	0.00	%		6,597	0	0	0	0		
08/10/2023	Surface Water: People's	6.57	Acre Inches		0.00			mg/L		0	0	0	0	0		
08/25/2023	Surface Water: People's	6.44	Acre Inches		0.00			mg/L		0	0	0	0	0		
09/08/2023	Ground Water: Well Avg	6.63	Acre Inches		0.02			mg/L		4	0	0	28,580			
09/22/2023	Ground Water: Well Avg	5.70	Acre Inches		0.02			mg/L		3	0	0	24,571			
09/22/2023	Waste Water: Main Lagoon	0.43	Acre Inches	393.00	49.10	502.00		mg/L	1,155,959	3,784	473	4,834	37,939			
10/03/2023	Harvest	24.70	Tons	72.10	1.25	0.27	1.06	%						17,056		
Acre Inches Applied:		32.15							Totals:	396	2,365,683	23,540	5,317	23,385	135,832	17,056
Season Nitrogen Ratio:		1.38							Lbs Per Acre:		238	54	236	1,372	172	

# Cowlifornia Dairy LLC 2023

## Nutrient Applications (Attachment B)

Field Name: 2

Corn, 49 Acres Planted on 05/16/2023

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.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00		%			686				
04/28/2023	Corral Solids: Main Corral	5.00	Tons	25.90	1.64	0.73	2.45	%	245		5,954	2,640	8,896	0
05/28/2023	Surface Water: People's	6.05	Acre Inches		0.00			mg/L			0	0	0	0
05/28/2023	Waste Water: Main Lagoon	0.46	Acre Inches		406.00	74.90	684.00	mg/L		612,058	2,070	382	3,487	24,065
06/12/2023	Fertilize - UN32	30.00	Gallons		32.00	0.00	0.00	%			3,919	0	0	0
06/12/2023	Surface Water: People's	6.89	Acre Inches		0.00			mg/L			0	0	0	0
06/27/2023	Surface Water: People's	6.63	Acre Inches		0.00			mg/L			0	0	0	0
07/11/2023	Ground Water: Well Avg	7.02	Acre Inches		0.02			mg/L			2	0	0	14,978
07/25/2023	Ground Water: Well Avg	5.58	Acre Inches		0.02			mg/L			1	0	0	11,906
07/25/2023	Waste Water: Main Lagoon	0.42	Acre Inches		350.00	57.30	414.00	mg/L		558,835	1,629	267	1,927	20,669
08/04/2023	Ground Water: Well Avg	5.87	Acre Inches		0.02			mg/L			1	0	0	12,524
09/02/2023	Harvest	30.70	Tons	68.60	1.22	0.22	1.35	%						11,525
Acre Inches Applied:		38.92		Totals:				245	1,170,893	14,263	3,288	14,310	84,141	11,525
Season Nitrogen Ratio:		1.24		Lbs Per Acre:						291	67	292	1,717	235

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 3

Wheat, 13 Acres Planted on 12/11/2022

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.								
11/20/2022	Corral Solids: Main Corral	5.00	Tons	50.10	1.79	0.80	2.59	%		65	1,161	520	1,680	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			182				
01/04/2023	Surface Water: People's	3.85	Acre Inches		0.00			mg/L			0	0	0	0	
01/04/2023	Waste Water: Main Lagoon	0.38	Acre Inches		319.00	69.10	593.00	mg/L			134,142	356	77	663	
03/03/2023	Surface Water: People's	5.95	Acre Inches		0.00			mg/L			0	0	0	0	
03/03/2023	Waste Water: Main Lagoon	0.59	Acre Inches		319.00	69.10	593.00	mg/L			208,273	553	120	1,029	
04/30/2023	Surface Water: People's	5.60	Acre Inches		0.00			mg/L			0	0	0	0	
04/30/2023	Waste Water: Main Lagoon	0.55	Acre Inches		406.00	74.90	684.00	mg/L			194,153	657	121	1,106	
05/15/2023	Harvest	21.20	Tons	65.50	1.16	0.30	1.28	%						2,206	
Acre Inches Applied:		16.92		Totals:					65	536,569	2,910	838	4,478	17,503	2,206
Season Nitrogen Ratio:		1.32		Lbs Per Acre:						224	64	344	1,346	170	

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 3

Corn, 13 Acres Planted on 07/14/2023

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.								
06/25/2023	Corral Solids: Main Corral	4.00	Tons	25.90	1.64	0.73	2.45	%	52	1,264	560	1,888	0		
07/26/2023	Surface Water: People's	5.90	Acre Inches		0.00			mg/L		0	0	0	0		
07/26/2023	Waste Water: Main Lagoon	0.25	Acre Inches	350.00	57.30	414.00		mg/L		88,251	257	42	304	3,264	
08/10/2023	Fertilize - UN32	20.00	Gallons		32.00	0.00	0.00	%		693	0	0	0		
08/10/2023	Surface Water: People's	7.62	Acre Inches		0.00			mg/L		0	0	0	0		
08/25/2023	Surface Water: People's	6.77	Acre Inches		0.00			mg/L		0	0	0	0		
09/08/2023	Ground Water: Well Avg	8.04	Acre Inches		0.02			mg/L		1	0	0	4,551		
09/22/2023	Ground Water: Well Avg	4.33	Acre Inches		0.02			mg/L		0	0	0	2,451		
09/22/2023	Waste Water: Main Lagoon	0.33	Acre Inches	393.00	49.10	502.00		mg/L		116,492	381	48	487	3,823	
10/02/2023	Ground Water: Well Avg	4.23	Acre Inches		0.02			mg/L		0	0	0	2,394		
10/13/2023	Harvest	20.20	Tons	67.50	1.12	0.25	0.90	%						1,912	
Acre Inches Applied:		37.47		Totals:					52	204,743	2,597	650	2,680	16,484	1,912
Season Nitrogen Ratio:		1.36		Lbs Per Acre:						200	50	206	1,268	147	

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 4

Wheat, 44 Acres Planted on 12/10/2022

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.								
11/20/2022	Corral Solids: Main Corral	5.00	Tons	50.10	1.79	0.80	2.59	%	220		3,930	1,761	5,687	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			616				
01/03/2023	Surface Water: People's	4.34	Acre Inches		0.00			mg/L			0	0	0	0	
01/03/2023	Waste Water: Main Lagoon	0.43	Acre Inches		319.00	69.10	593.00	mg/L		513,759	1,365	296	2,538	14,807	
03/02/2023	Surface Water: People's	4.96	Acre Inches		0.00			mg/L			0	0	0	0	
03/02/2023	Waste Water: Main Lagoon	0.49	Acre Inches		319.00	69.10	593.00	mg/L		585,447	1,556	337	2,892	16,874	
04/29/2023	Surface Water: People's	4.86	Acre Inches		0.00			mg/L			0	0	0	0	
04/29/2023	Waste Water: Main Lagoon	0.48	Acre Inches		406.00	74.90	684.00	mg/L		573,499	1,940	358	3,267	22,549	
05/14/2023	Harvest	24.10	Tons	65.50	1.15	0.37	1.42	%						8,414	
Acre Inches Applied:		15.56		Totals:					220	1,672,705	9,407	2,751	14,384	54,230	8,414
Season Nitrogen Ratio: 1.12				Lbs Per Acre:						214	63	327	1,232	191	

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 4

Corn, 44 Acres Planted on 06/02/2023

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.								
05/22/2023	Corral Solids: Main Corral	4.50	Tons	25.90	1.64	0.73	2.45	%	198		4,812	2,133	7,189	0	
06/14/2023	Surface Water: People's	6.08	Acre Inches		0.00			mg/L			0	0	0	0	
06/14/2023	Waste Water: Main Lagoon	0.46	Acre Inches		406.00	74.90	684.00	mg/L		549,603	1,859	343	3,131	21,609	
06/29/2023	Fertilize - UN32	30.00	Gallons		32.00	0.00	0.00	%			3,519	0	0	0	
06/29/2023	Surface Water: People's	6.96	Acre Inches		0.00			mg/L			0	0	0	0	
07/14/2023	Surface Water: People's	6.68	Acre Inches		0.00			mg/L			0	0	0	0	
07/28/2023	Ground Water: Well Avg	7.10	Acre Inches		0.02			mg/L			2	0	0	13,603	
08/11/2023	Ground Water: Well Avg	5.55	Acre Inches		0.02			mg/L			1	0	0	10,633	
08/11/2023	Waste Water: Main Lagoon	0.42	Acre Inches		350.00	57.30	414.00	mg/L		501,811	1,463	239	1,731	18,560	
08/21/2023	Ground Water: Well Avg	5.82	Acre Inches		0.02			mg/L			1	0	0	11,150	
09/01/2023	Harvest	21.10	Tons	66.00	1.33	0.25	1.23	%						8,397	
<b>Acre Inches Applied:</b>		<b>39.07</b>		<b>Totals:</b>					<b>198</b>	<b>1,051,414</b>	<b>11,657</b>	<b>2,715</b>	<b>12,051</b>	<b>75,555</b>	<b>8,397</b>
<b>Season Nitrogen Ratio:</b>		<b>1.39</b>		<b>Lbs Per Acre:</b>					<b>265</b>	<b>62</b>	<b>274</b>	<b>1,717</b>	<b>191</b>		



## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

**Field Name:** 5

Wheat, 89 Acres Planted on 12/11/2022

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.								
11/18/2022	Corral Solids: Main Corral	10.00	Tons	50.10	1.79	0.80	2.59	%	890		15,899	7,124	23,005	0	
12/29/2022	Surface Water: People's	4.45	Acre Inches		0.00			mg/L			0	0	0	0	
12/29/2022	Waste Water: Main Lagoon	0.44	Acre Inches		341.00	62.50	411.00	mg/L		1,063,362	3,021	554	3,641	38,266	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,246				
02/25/2023	Surface Water: People's	4.75	Acre Inches		0.00			mg/L			0	0	0	0	
02/25/2023	Waste Water: Main Lagoon	0.47	Acre Inches		319.00	69.10	593.00	mg/L		1,135,864	3,018	654	5,611	32,738	
04/24/2023	Surface Water: People's	4.70	Acre Inches		0.00			mg/L			0	0	0	0	
04/24/2023	Waste Water: Main Lagoon	0.47	Acre Inches		406.00	74.90	684.00	mg/L		1,135,864	3,841	708	6,472	44,659	
05/15/2023	Harvest	22.10	Tons	58.80	1.47	0.30	1.09	%						23,824	
<b>Acre Inches Applied:</b>		<b>15.28</b>		<b>Totals:</b>					890	3,335,091	27,025	9,040	38,728	115,663	23,824
<b>Season Nitrogen Ratio:</b> 1.13				<b>Lbs Per Acre:</b>						304	102	435	1,300	268	

# Cowlifornia Dairy LLC 2023

## Nutrient Applications (Attachment B)

Field Name: 5

Corn, 89 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.								
06/10/2023	Corral Solids: Main Corral	5.00	Tons	25.90	1.64	0.73	2.45	%	445	10,815	4,794	16,158	0		
07/07/2023	Surface Water: People's	5.94	Acre Inches		0.00			mg/L		0	0	0	0		
07/07/2023	Waste Water: Main Lagoon	0.45	Acre Inches		350.00	57.30	414.00	mg/L		1,087,530	3,171	519	3,750	40,223	
07/22/2023	Fertilize - UN32	30.00	Gallons		32.00	0.00	0.00	%		7,117	0	0	0		
07/22/2023	Surface Water: People's	6.60	Acre Inches		0.00			mg/L		0	0	0	0		
08/06/2023	Surface Water: People's	6.46	Acre Inches		0.00			mg/L		0	0	0	0		
08/20/2023	Ground Water: Well Avg	6.67	Acre Inches		0.02			mg/L		4	0	0	0	25,848	
09/03/2023	Ground Water: Well Avg	5.68	Acre Inches		0.02			mg/L		3	0	0	0	22,011	
09/03/2023	Waste Water: Main Lagoon	0.46	Acre Inches		350.00	57.30	414.00	mg/L		1,111,697	3,241	530	3,834	41,116	
09/13/2023	Ground Water: Well Avg	6.04	Acre Inches		0.02			mg/L		3	0	0	0	23,407	
09/24/2023	Harvest	27.80	Tons	71.60	1.25	0.24	1.15	%						17,567	
Acre Inches Applied:		38.30		Totals:					445	2,199,227	24,354	5,844	23,743	152,606	17,567
Season Nitrogen Ratio: 1.39				Lbs Per Acre:						274	66	267	1,715	197	

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

**Field Name:** 6

Wheat, 86 Acres Planted on 12/11/2022

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.								
11/18/2022	Corral Solids: Main Corral	5.00	Tons	50.10	1.79	0.80	2.59	%	430		7,682	3,442	11,115	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,204				
01/10/2023	Surface Water: People's	4.44	Acre Inches		0.00			mg/L			0	0	0	0	
01/10/2023	Waste Water: Main Lagoon	0.44	Acre Inches		319.00	69.10	593.00	mg/L		1,027,519	2,730	592	5,076	29,615	
03/09/2023	Surface Water: People's	4.76	Acre Inches		0.00			mg/L			0	0	0	0	
03/09/2023	Waste Water: Main Lagoon	0.47	Acre Inches		319.00	69.10	593.00	mg/L		1,097,577	2,916	632	5,421	31,634	
05/06/2023	Surface Water: People's	4.71	Acre Inches		0.00			mg/L			0	0	0	0	
05/06/2023	Waste Water: Main Lagoon	0.47	Acre Inches		406.00	74.90	684.00	mg/L		1,097,577	3,712	685	6,254	43,154	
05/15/2023	Harvest	26.60	Tons	68.80	1.11	0.30	1.93	%						15,845	
<b>Acre Inches Applied:</b>		<b>15.29</b>		<b>Totals:</b>					430	3,222,672	18,244	5,350	27,866	104,403	<b>15,845</b>
<b>Season Nitrogen Ratio:</b>		<b>1.15</b>		<b>Lbs Per Acre:</b>						212	62	324	1,214	<b>184</b>	

# Cowlifornia Dairy LLC 2023

## Nutrient Applications (Attachment B)

Field Name: 6

Corn, 86 Acres Planted on 06/28/2023

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.								
06/18/2023	Corral Solids: Main Corral	5.00	Tons	25.90	1.64	0.73	2.45	%	430		10,451	4,633	15,613	0	
07/10/2023	Surface Water: People's	5.95	Acre Inches		0.00			mg/L			0	0	0	0	
07/10/2023	Waste Water: Main Lagoon	0.45	Acre Inches	350.00	57.30	414.00		mg/L		1,050,871	3,064	501	3,624	38,867	
07/25/2023	Fertilize - UN32	30.00	Gallons		32.00	0.00	0.00	%			6,877	0	0	0	
07/25/2023	Surface Water: People's	6.61	Acre Inches		0.00			mg/L			0	0	0	0	
08/09/2023	Surface Water: People's	6.47	Acre Inches		0.00			mg/L			0	0	0	0	
08/23/2023	Ground Water: Well Avg	6.69	Acre Inches		0.02			mg/L			3	0	0	25,052	
09/06/2023	Ground Water: Well Avg	5.68	Acre Inches		0.02			mg/L			3	0	0	21,270	
09/06/2023	Waste Water: Main Lagoon	0.43	Acre Inches	350.00	57.30	414.00		mg/L		1,004,166	2,927	479	3,463	37,139	
09/16/2023	Ground Water: Well Avg	6.03	Acre Inches		0.02			mg/L			3	0	0	22,580	
09/27/2023	Harvest	29.00	Tons	72.50	1.27	0.27	1.18	%						17,421	
Acre Inches Applied:		38.31		Totals:					430	2,055,037	23,328	5,613	22,701	144,907	17,421
Season Nitrogen Ratio:		1.34		Lbs Per Acre:						271	65	264	1,685	203	

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 7

Wheat, 101 Acres Planted on 12/11/2022

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.								
11/19/2022	Corral Solids: Main Corral	5.00	Tons	50.10	1.79	0.80	2.59	%	505		9,021	4,042	13,053	0	
12/28/2022	Surface Water: People's	4.46	Acre Inches		0.00			mg/L			0	0	0	0	
12/28/2022	Waste Water: Main Lagoon	0.44	Acre Inches		341.00	62.50	411.00	mg/L		1,206,737	3,428	628	4,132	43,425	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,414				
02/24/2023	Surface Water: People's	4.73	Acre Inches		0.00			mg/L			0	0	0	0	
02/24/2023	Waste Water: Main Lagoon	0.47	Acre Inches		319.00	69.10	593.00	mg/L		1,289,015	3,425	742	6,367	37,152	
04/23/2023	Surface Water: People's	4.69	Acre Inches		0.00			mg/L			0	0	0	0	
04/23/2023	Waste Water: Main Lagoon	0.46	Acre Inches		406.00	74.90	684.00	mg/L		1,261,589	4,266	787	7,188	49,603	
05/15/2023	Harvest	23.00	Tons	64.20	1.46	0.30	1.17	%						24,283	
Acre Inches Applied:		15.25		Totals:					505	3,757,340	21,554	6,199	30,740	130,180	24,283
Season Nitrogen Ratio:		0.89		Lbs Per Acre:						213	61	304	1,289	240	

# Cowlifornia Dairy LLC 2023

## Nutrient Applications (Attachment B)

Field Name: 7

Corn, 101 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	Corral Solids: Main Corral	5.00	Tons	25.90	1.64	0.73	2.45	%	505		12,274	5,441	18,337	0	
06/28/2023	Surface Water: People's	5.93	Acre Inches		0.00			mg/L			0	0	0	0	
06/28/2023	Waste Water: Main Lagoon	0.45	Acre Inches		350.00	57.30	414.00	mg/L		1,234,163	3,599	589	4,256	45,646	
07/13/2023	Fertilize - UN32	30.00	Gallons		32.00	0.00	0.00	%			8,077	0	0	0	
07/13/2023	Surface Water: People's	6.56	Acre Inches		0.00			mg/L			0	0	0	0	
07/28/2023	Surface Water: People's	6.44	Acre Inches		0.00			mg/L			0	0	0	0	
08/11/2023	Ground Water: Well Avg	6.62	Acre Inches		0.02			mg/L			4	0	0	29,113	
08/25/2023	Ground Water: Well Avg	5.70	Acre Inches		0.02			mg/L			3	0	0	25,067	
08/25/2023	Waste Water: Main Lagoon	0.43	Acre Inches		350.00	57.30	414.00	mg/L		1,179,311	3,438	563	4,067	43,617	
09/04/2023	Ground Water: Well Avg	6.06	Acre Inches		0.02			mg/L			3	0	0	26,651	
09/15/2023	Harvest	26.90	Tons	65.90	1.20	0.22	1.03	%						22,235	
Acre Inches Applied:		38.19		Totals:					505	2,413,474	27,397	6,592	26,660	170,094	22,235
Season Nitrogen Ratio:		1.23		Lbs Per Acre:							271	65	264	1,684	220

## Cowlifornia Dairy LLC 2023

### Nutrient Applications (Attachment B)

Field Name: 8

Almonds, 98 Acres Planted on 11/11/2015

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.							
11/12/2022	Ground Water: Well Avg	3.32	Acre Inches		1.83				135	0	0	17,785	
12/17/2022	Fertilize (10-34-0)	15.00	Pounds		10.00	34.00	0.00	%		147	500	0	0
12/17/2022	Ground Water: Well Avg	3.28	Acre Inches		1.83			mg/L		133	0	0	17,571
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%		1,372			
01/21/2023	Ground Water: Well Avg	3.18	Acre Inches		0.02			mg/L		2	0	0	13,570
02/18/2023	Ground Water: Well Avg	3.32	Acre Inches		0.02			mg/L		2	0	0	14,167
03/17/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%		3,918	0	0	0
03/17/2023	Ground Water: Well Avg	3.28	Acre Inches		0.02			mg/L		2	0	0	13,996
04/14/2023	Ground Water: Well Avg	3.25	Acre Inches		0.02			mg/L		2	0	0	13,868
05/09/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%		3,918	0	0	0
05/09/2023	Ground Water: Well Avg	3.38	Acre Inches		0.02			mg/L		2	0	0	14,423
06/03/2023	Ground Water: Well Avg	3.42	Acre Inches		0.02			mg/L		2	0	0	14,594
06/28/2023	Ground Water: Well Avg	3.32	Acre Inches		0.02			mg/L		2	0	0	14,167
07/23/2023	Ground Water: Well Avg	3.08	Acre Inches		0.02			mg/L		2	0	0	13,143
08/17/2023	Ground Water: Well Avg	3.28	Acre Inches		0.02			mg/L		2	0	0	13,996
09/13/2023	Harvest	2.57	Tons		16.90	1.81	0.22	1.75	%				7,576
Acre Inches Applied:		36.11		Totals:					9,641	500	0	161,281	7,576
Season Nitrogen Ratio:		1.27		Lbs Per Acre:					98	5	0	1,646	77

# Cowlifornia Dairy LLC 2023

## Nutrient Applications (Attachment B)

Field Name: 9

Corn, 36 Acres Planted on 05/06/2023

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.							
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00				504				
04/21/2023	Corral Solids: Main Corral	6.00	Tons	25.90	1.64	0.73	2.45	%	216	5,250	2,327	7,843	0
05/18/2023	Surface Water: People's	6.14	Acre Inches		0.00			mg/L		0	0	0	0
05/18/2023	Waste Water: Main Lagoon	0.46	Acre Inches		406.00	74.90	684.00	mg/L		449,675	1,521	280	2,562
06/02/2023	Fertilize - UN32	30.00	Gallons		32.00	0.00	0.00	%		2,879	0	0	0
06/02/2023	Surface Water: People's	7.12	Acre Inches		0.00			mg/L		0	0	0	0
06/17/2023	Surface Water: People's	6.77	Acre Inches		0.00			mg/L		0	0	0	0
07/01/2023	Ground Water: Well Avg	7.29	Acre Inches		0.02			mg/L		1	0	0	11,427
07/15/2023	Ground Water: Well Avg	5.49	Acre Inches		0.02			mg/L		1	0	0	8,606
07/15/2023	Waste Water: Main Lagoon	0.41	Acre Inches		350.00	57.30	414.00	mg/L		400,797	1,169	191	1,382
07/25/2023	Ground Water: Well Avg	5.73	Acre Inches		0.02			mg/L		1	0	0	8,982
08/05/2023	Harvest	29.50	Tons	66.00	1.28	0.29	1.02	%					9,244
Acre Inches Applied:		39.41		Totals:			216	850,473	11,326	2,799	11,787	61,519	9,244
Season Nitrogen Ratio:		1.23		Lbs Per Acre:					315	78	327	1,709	257

**Cowlifornia Dairy LLC 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>	
Solid Manure	106,980.52	47,645.53	157,636.43	0.00	5,092.00	tons
Process Wastewater	83,021.74	15,177.05	125,022.12	977,699.54	27,980,605.35	gallons
Irrigation Water	334.76					
Fertilizer / Total Imports	47,661.32					
Atmospheric Deposition	8,610.00					
<b>Total Nitrogen Applied</b>	<b>246,608.34</b>					
Crop Nitrogen Removal	207,207.82					
<b>Nitrogen Balance</b>	<b>39,400.52</b>					
<b>Nitrogen Ratio</b>	<b>1.19</b>					

- Nutrient applications shown in Attachment B are on a crop 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.

## Cowlifornia Dairy LLC 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

**Cowlifornia Dairy LLC 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)**

\* 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.

**Cowlifornia Dairy LLC 2023**  
**Land Application Area Description Technical Report (Attachment D)**

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
1	x014 x280 x013 x000	99	Both
2	x014 x280 x013 x000	49	Both
3	x014 x280 x013 x000	13	Both
4	x016 x080 x026 x000	44	Both
5	x016 x080 x028 x000	89	Both
6	x016 x080 x027 x000, x016 x080 x028 x000	86	Both
7	x016 x080 x027 x000	101	Both
8	x016 x080 x027 x000	98	None
9	x016 x080 x027 x000	36	Both
		615	

Production Area APN(s): x014 x280 x013 x000

## Cowlifornia Dairy LLC 2023

### Lab Results Summary (Attachment E)

#### **Process Wastewater**

(mg/l/ppm unless noted otherwise)

Sample Date:	TKN	TP	TK	EC (umhos/cm)	NH4N	NO3N	TDS	pH (units)	General Minerals					
									CA	MG	NA	HCO3	CO3	SO4
02/13/2023	319.00	69.10	593.00	5,210	166.00		3,460.00							
06/09/2023	406.00	74.90	684.00	7,110	379.00	0.01	4,720.00	7.46						
07/12/2023	350.00	57.30	414.00	6,680	314.00		4,440.00							
11/06/2023	393.00	49.10	502.00	5,940	389.00		3,940.00							
<b>Averages:</b>	<b>367.00</b>	<b>62.60</b>	<b>548.25</b>	<b>6,235</b>	<b>312.00</b>	<b>0.01</b>	<b>4,140.00</b>	<b>7.46</b>						

#### **Manure - Corral Solids**

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/08/2023	1.64	0.73	2.45	25.90						%
11/06/2023	2.10	0.64	2.41	38.40						%
<b>Averages:</b>	<b>1.87</b>	<b>0.68</b>	<b>2.43</b>	<b>32.15</b>						

#### **Plant Tissue**

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
1	1	Wheat	05/16/2023	24.20	5.26	22.60	65.30	8.65
1	2	Corn	10/03/2023	25.00	5.36	21.20	72.10	5.72



## Cowlifornia Dairy LLC 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	Corn	08/15/2023	24.40	4.30	27.00	68.60	6.67
3	1	Wheat	05/15/2023	23.20	5.98	25.60	65.50	9.57
3	2	Corn	10/13/2023	22.40	5.08	18.00	67.50	4.92
4	1	Wheat	05/14/2023	23.00	7.44	28.40	65.50	10.50
4	2	Corn	09/01/2023	26.60	5.00	24.60	66.00	5.61
5	1	Wheat	05/15/2023	29.40	5.94	21.80	58.80	7.66
5	2	Corn	09/24/2023	25.00	4.86	23.00	71.60	5.71
6	1	Wheat	05/15/2023	22.20	5.90	38.60	68.80	10.30
6	2	Corn	09/27/2023	25.40	5.48	23.60	72.50	5.63
7	1	Wheat	05/15/2023	29.20	6.06	23.40	64.20	7.28
7	2	Corn	09/15/2023	24.00	4.46	20.60	65.90	5.49
8	1	Almonds	09/13/2023	36.20	4.44	35.00	16.90	10.20
9	1	Corn	08/05/2023	25.60	5.82	20.40	66.00	6.25

#### **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



# Cowlifornia Dairy LLC 2023

## Lab Results Summary (Attachment E)

### **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
<b>Dairy</b>														
DW-1	03/02/2023	0.00		186		140.00		2.00	0.00	43.00	20.00	30.00	2.10	14.00
	<b>Averages:</b>	0.00		186		140.00		2.00	0.00	43.00	20.00	30.00	2.10	14.00
<b>Irrigation</b>														
IWD-6	10/16/2023	0.00		327		230.00	0.00	13.00	2.00	53.00	60.00	0.00	7.70	50.00
IWD-7	10/04/2023	0.10		378		270.00	0.00	12.00	1.00	67.00	90.00	0.00	7.90	47.00
IWE-37	09/14/2023	0.00		190		110.00	0.00	2.00	0.00	42.00	40.00	20.00	2.30	12.00
IWE-38								Did not run						
IWE-39	06/21/2023	0.00		337		160.00	0.00							
IWE-41								Did not run						
	<b>Averages:</b>	0.02		308		192.50	0.00	9.00	1.00	54.00	63.33	6.67	5.97	36.33
<b>Surface Water</b>														
People's Ditch, Hanford	07/07/2023	0.00		24		0.00	0.00							
	<b>Averages:</b>	0.00		24		0.00	0.00							

\* NH4N was non-detectable unless a value is shown

**Cowlifornia Dairy LLC 2023**  
**Planting and Harvest Information (Attachment F)**

Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
<b>Field: 1</b>							
	1 Wheat	99	12/12/2022	05/16/2023	16.6	2346.3	23.7
	2 Corn	99	07/14/2023	10/03/2023	27.4	2445.3	24.7
<b>Field: 2</b>							
	1 Corn	49	05/16/2023	09/02/2023	28.1	1504.3	30.7
<b>Field: 3</b>							
	1 Wheat	13	12/11/2022	05/15/2023	22.0	275.6	21.2
	2 Corn	13	07/14/2023	10/13/2023	27.0	262.6	20.2
<b>Field: 4</b>							
	1 Wheat	44	12/10/2022	05/14/2023	23.6	1060.4	24.1
	2 Corn	44	06/02/2023	09/01/2023	28.4	928.4	21.1
<b>Field: 5</b>							
	1 Wheat	89	12/11/2022	05/15/2023	20.2	1966.9	22.1
	2 Corn	89	06/25/2023	09/24/2023	30.0	2474.2	27.8
<b>Field: 6</b>							
	1 Wheat	86	12/11/2022	05/15/2023	24.2	2287.6	26.6
	2 Corn	86	06/28/2023	09/27/2023	27.1	2494.0	29.0
<b>Field: 7</b>							
	1 Wheat	101	12/11/2022	05/15/2023	17.2	2323.0	23.0
	2 Corn	101	06/16/2023	09/15/2023	26.1	2716.9	26.9
<b>Field: 8</b>							
	1 Almonds	98	11/11/2015	09/13/2023	2.6	251.9	2.6
<b>Field: 9</b>							
	1 Corn	36	05/06/2023	08/05/2023	28.1	1062.0	29.5

# Cowlifornia Dairy LLC 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



March 15, 2023

Lab No. : VI 2341301

Customer No. : 4018573

Reference : 40259

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

## Laboratory Report

**Introduction:** This report package contains a total of 4 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 | (2 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
DW-1	03/02/2023	03/02/2023	VI 2341301-001	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

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)
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)

**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



March 15, 2023

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

Description : DW-1  
 Project : 0009 Cowlifornia Dairy LLC

Lab No. : VI 2341301-001  
 Customer No. : 4018573  
 Reference : 40259  
 Sampled On : March 2, 2023 at 10:40  
 Sampled By : Alex  
 Received On : March 2, 2023 at 16:00  
 Matrix : Drinking Water

### Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Alkalinity (as CaCO <sub>3</sub> )	60	10	mg/L		1		03/08/2023	18:36	amm	SM 4500-H+B	03/08/2023	21:41	amm
Bicarbonate	20	10	mg/L		1		03/08/2023	18:36	amm	SM 4500-H+B	03/08/2023	21:41	amm
Carbonate	30	10	mg/L		1		03/08/2023	18:36	amm	SM 4500-H+B	03/08/2023	21:41	amm
Hydroxide	30	10	mg/L		1		03/08/2023	18:36	amm	SM 4500-H+B	03/08/2023	21:41	amm
Chloride	14	1	mg/L	500 <sup>2</sup>	1	I	03/03/2023	11:29	ldm	EPA 300.0	03/03/2023	21:36	ldm
Nitrate Nitrogen	ND	0.1	mg/L	10	1	U	03/03/2023	11:29	ldm	EPA 300.0	03/03/2023	21:36	ldm
Conductivity	186	1	umhos/cm	1600 <sup>2</sup>	1		03/08/2023	18:36	amm	SM 4500-H+B	03/08/2023	21:41	amm
Sulfate Sulfur	2.10	0.17	mg/L		1		03/03/2023	11:29	ldm	EPA 300.0	03/03/2023	21:36	ldm
Solids, Total Dissolved (TDS)	140	20	mg/L	1000 <sup>2</sup>	1		03/06/2023	10:15	ctl	SM 2540 C	03/07/2023	11:30	ctl
Calcium	2	1	mg/L		1	h	03/06/2023	02:50	ejc	EPA 200.7	03/06/2023	14:59	ac
Magnesium	ND	1	mg/L		1	Uh	03/06/2023	02:50	ejc	EPA 200.7	03/06/2023	14:59	ac
Potassium	ND	1	mg/L		1	Uh	03/06/2023	02:50	ejc	EPA 200.7	03/06/2023	14:59	ac
Sodium	43	1	mg/L		1	h	03/06/2023	02:50	ejc	EPA 200.7	03/06/2023	14:59	ac

## DQF Flags Definition:

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

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

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



March 15, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2341301  
 Customer No. : 4018573

### Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Metals</b>								
Calcium	200.7	03/06/2023:202374EJC (SP 2303142-001) (VI 2341168-005)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 0.8000 12.00 12.00 0.8000	ND 103 % 84.6 % 105 % 2.7% 134 % 161 % 8.6%	<1 85-115 75-125 75-125 ≤20.0 75-125 75-125 ≤20.0	
Magnesium	200.7	03/06/2023:202374EJC (SP 2303142-001) (VI 2341168-005)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 0.8000 12.00 12.00 0.8000	ND 99.2 % 101 % 104 % 0.9% 126 % 147 % 10.0%	<1 85-115 75-125 75-125 ≤20 75-125 75-125 ≤20	435 435
Potassium	200.7	03/06/2023:202374EJC (SP 2303142-001) (VI 2341168-005)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 0.8000 12.00 12.00 0.8000	ND 94.9 % 109 % 112 % 2.3% 129 % 180 % 9.9%	<1 85-115 75-125 75-125 ≤20.0 75-125 75-125 ≤20.0	435 435
Sodium	200.7	03/06/2023:202374EJC (SP 2303142-001) (VI 2341168-005)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 0.8000 12.00 12.00 0.8000	ND 103 % 94.8 % 107 % 2.1% 125 % 146 % 8.9%	<1 85-115 75-125 75-125 ≤20.0 75-125 75-125 ≤20.0	435

#### 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.
- 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.

March 15, 2023

Innovative Ag Services, LLC

Lab No. : VI 2341301  
Customer No. : 4018573

## Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
Alkalinity (as CaCO3)	2320B	03/08/2023:202548AMM	ND	mg/L		4.55%	10	435
Bicarbonate	2320B	(STK2332876-001)	Dup	mg/L		4.58%	10	
E. C.	2320B	(STK2332876-001)	Dup	umhos/cm		0%	5	
Solids, Total Dissolved	2540CE	03/06/2023:202401CTL (STK2332812-001) (STK2332812-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	992.0	ND 97.5% 1.53% 1.22%	<20 90-110 5 5	
Chloride	300.0	03/03/2023:202390LDM (STK2332495-001) (STK2332483-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	25.00 50.00 50.00 50.00 10.00 50.00 50.00 10.00	ND 96.8 % 81.2 % 87.1 % 3.4% 96.3 % 98.2 % 1.7%	<1 90-110 85-121 85-121 ≤19 85-121 85-121 ≤19	435
Nitrate Nitrogen	300.0	03/03/2023:202390LDM (STK2332495-001) (STK2332483-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	20.00 40.00 40.00 10.00 10.00 40.00 40.00 10.00	ND 96.9 % 94.3 % 101 % 6.8% 95.6 % 97.5 % 1.5%	<0.4 90-110 85-119 85-119 ≤19 85-119 85-119 ≤19	
Sulfate Sulfur	300.0	03/03/2023:202390LDM (STK2332495-001) (STK2332483-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	50.00 100.0 100.0 10.00 10.00 100.0 100.0 10.00	ND 96.5 % 88.5 % 95.0 % 5.1% 97.4 % 99.5 % 2.0%	<0.5 90-110 82-124 82-124 ≤23 82-124 82-124 ≤23	

**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 analyted. 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

Nº 40259

ID: # 0009

23/1301

SITE NAME: California Dairy LLCBilling: IAS

## ANALYSIS TO BE COMPLETED:

### Irrigation/Ground Water (ELAP Standards)

W1 EC, NO<sub>3</sub>N (Dom)W2 EC, NO<sub>3</sub>N, TDS, TN (Irr)W3 NH<sub>4</sub>-N (Ammonium)

20 7.4

W4 EC, NO<sub>3</sub>N, Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl, TDS (Dom, GM)W5 EC, NO<sub>3</sub>N, TDS, TN, Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Irr, GM)W6 NO<sub>3</sub>N, NO<sub>2</sub> (Dom ILRP, Annually)W7 Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>, Cl + Lab Filtering (GWM)

W8 Other: \_\_\_\_\_

### Plant Tissue

P1 TN, NO<sub>3</sub>N, PO<sub>4</sub>P, 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: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N*	pH	Temp
1 DW-1	Dom	W4	3/2 10:40	Alex	→		
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 &amp; 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 <sup>st</sup>	Alma P.	IAS		3/2/23 2:10
2 <sup>nd</sup>	✓	FGL	3-2-23 15:45	
3 <sup>rd</sup>	✓	FGL		3-2-23 16:08
4 <sup>th</sup>	✓		3/2/23 16:00	

LABORATORY USE ONLY	Logged In By:	Total Samples:	Laboratory #:
	BLJ	2/3	112

GLS MLC 3/3/23 1222



July 11, 2023

**Lab No.** : VI 2343956  
**Customer No.** : 4018573  
**Reference** : 40951

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

### 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
IWE-39	06/21/2023	06/21/2023	VI 2343956-001	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 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: EHB

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



July 11, 2023

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

Description : IWE-39  
 Project : 0009 Cowlifornia Dairy

Lab No. : VI 2343956-001  
 Customer No. : 4018573  
 Reference : 40951  
 Sampled On : June 21, 2023 at 10:30  
 Sampled By : Henry  
 Received On : June 21, 2023 at 16:12  
 Matrix : Ag Water

### Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	07/03/2023	12:54	sta	EPA 351.2	07/06/2023	18:43	lcr
Nitrate Nitrogen	ND	0.4	mg/L		1	U	06/22/2023	12:30	lfs	SM 4500-NO3 F	06/22/2023	13:56	lfs
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	U	07/03/2023	12:54	sta	Calc.	07/06/2023	18:43	lcr
Nitrate + Nitrite as N	ND	0.4	mg/L		1	U	06/22/2023	12:30	lfs	SM 4500-NO3 F	06/22/2023	13:56	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	07/03/2023	12:54	sta	EPA 351.2	07/06/2023	18:43	lcr
Conductivity	337	1	umhos/cm		1		07/05/2023	14:10	amm	SM 4500-H+B	07/05/2023	22:08	sta
Solids, Total Dissolved (TDS)	160	20	mg/L		1		06/22/2023	16:15	ctl	SM 2540 C	06/23/2023	11:25	ctl

DQF Flags Definition:

U Constituent results were non-detect.

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



July 11, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2343956  
 Customer No. : 4018573

### Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
E. C.	2320B	(VI 2344352-001)	Dup	umhos/cm		0.6%	5	
Solids, Total Dissolved	2540CE	06/22/2023:206884CTL (VI 2343952-036) (VI 2343952-036)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	993.7	ND 100% 1.16% 1.13%	<20 90-110 5 5	
Nitrogen, Total Kjeldahl	351.2	07/03/2023:207257STA (VI 2343915-003) (VI 2343914-003)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 1.9% 12.00 12.00 90.6% 3.0%	ND 94.2% 95.3% 93.4% 1.9% 93.4% 54-136 54-136 54-136 54-136 ≤27 ≤27	<0.5 73-124 54-136 54-136 54-136 54-136 ≤27 ≤27	
Nitrate + Nitrite as N	4500NO3F	06/22/2023:206873LFS (SP 2310526-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 5.609	ND 99.9% 96.0% 96.4% 0.2%	<0.4 80-120 66-125 66-125 ≤30.4	
Nitrate Nitrogen	4500NO3F	06/22/2023:206873LFS (SP 2310526-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 5.609	ND 99.9% 96.0% 96.4% 0.2%	<0.4 80-120 66-125 66-125 ≤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.

234 3954



## Laboratory Analysis Work Order

Nº 40951

ID: # 0009

R01  
15.3°

SITE NAME: California Dairy

Billing: IAS

## ANALYSIS TO BE COMPLETED:

## Irrigation/Ground Water (ELAP Standards)

W1 EC, NO<sub>3</sub>N (Dom)W2 EC, NO<sub>3</sub>N, TDS, TN (Irr)W3 NH<sub>4</sub>-N (Ammonium)W4 EC, NO<sub>3</sub>N, Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl, TDS (Dom, GM)W5 EC, NO<sub>3</sub>N, TDS, TN, Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Irr, GM)W6 NO<sub>3</sub>N, NO<sub>2</sub> (Dom ILRP, Annually)W7 Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>, Cl + Lab Filtering (GWM)

W8 Other: \_\_\_\_\_

## Plant Tissue

P1 TN, NO<sub>3</sub>N, PO<sub>4</sub>P, 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: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N *	pH	Temp
1 IWE-39	Tr	WE	10:30 6/21	Henry	—		
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 &amp; 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:

GLS 6/21/23  
CPA 0934

## CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 <sup>st</sup>		IAS		2:00 6/21/23
2 <sup>nd</sup>	ADR	FGI	6/21/23 1555	
3 <sup>rd</sup>	ADR	FGI		6/21/23 1612
4 <sup>th</sup>	SRO	FGI	6/21/23 1612	
	CPG	FGI	6/21/23 1730	
	GLS	GLS	6/21/23 1730	
LABORATORY USE ONLY		Total Samples:		Laboratory #:
Logged In By:				



October 4, 2023

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

**Lab No.** : VI 2346278  
**Customer No.** : 4018573  
**Reference** : 41352

### Laboratory Report

**Introduction:** This report package contains a total of 5 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 | (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
IWE-37	09/14/2023	09/14/2023	VI 2346278-001	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 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)

**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: EHB

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.  
 Title: Laboratory Director  
 Date: 2023-10-05

Section: Case Narrative

Page 1 of 5

Page 1 of 5

**Corporate Offices & Laboratory**  
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 Santa Paula, CA 93060  
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 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063  
 CA ELAP Certification No. 1573

**Office & Laboratory**  
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 Stockton, CA 95215  
 TEL: (209)942-0182  
 FAX: (209)942-0423  
 CA ELAP Certification No. 1563

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 FAX: (530)343-3807  
 CA ELAP Certification No. 2670

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

**Office & Laboratory**  
 9415 W. Goshen Avenue  
 Visalia, CA 93291  
 TEL: (559)734-8473  
 FAX: (559)734-8435  
 CA ELAP Certification No. 2810



October 4, 2023

**Innovative Ag Services, LLC**

1201 Delta View Road  
Suite 5  
Hanford, CA 93230

Description : IWE-37  
Project : 0009 Cowlifornia Dairy LLC

Lab No. : VI 2346278-001

Customer No. : 4018573

Reference : 41352

Sampled On : September 14, 2023 at 13:50

Sampled By : Zeke

Received On : September 14, 2023 at 16:05

Matrix : Ag Water

**Sample Results - Inorganic**

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Alkalinity (as CaCO <sub>3</sub> )	70	10	mg/L		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	02:26	amm
Bicarbonate	40	10	mg/L		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	02:26	amm
Carbonate	20	10	mg/L		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	02:26	amm
Hydroxide	20	10	mg/L		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	02:26	amm
Chloride	12	1	mg/L		1		09/15/2023	15:07	ldm	EPA 300.0	09/16/2023	04:19	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	09/28/2023	10:26	sta	EPA 351.2	10/03/2023	20:40	lcr
Nitrate Nitrogen	ND	0.1	mg/L		1	J	09/15/2023	15:07	ldm	EPA 300.0	09/16/2023	04:19	ldm
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	UJ	09/28/2023	10:26	sta	Calc.	10/03/2023	20:40	lcr
Nitrate + Nitrite as N	ND	0.1	mg/L		1	J	09/15/2023	15:07	ldm	EPA 300.0	09/16/2023	04:19	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	09/28/2023	10:26	sta	EPA 351.2	10/03/2023	20:40	lcr
Conductivity	190	1	umhos/cm		1		09/20/2023	17:39	amm	SM 4500-H+B	09/21/2023	02:26	amm
Sulfate Sulfur	2.30	0.17	mg/L		1	b	09/15/2023	15:07	ldm	EPA 300.0	09/16/2023	04:19	ldm
Solids, Total Dissolved (TDS)	110	20	mg/L		1		09/19/2023	09:45	ctl	SM 2540 C	09/20/2023	11:00	ctl
Calcium	2	1	mg/L		1		09/19/2023	09:20	ejc	EPA 200.7	09/20/2023	18:11	ac
Magnesium	ND	1	mg/L		1	U	09/19/2023	09:20	ejc	EPA 200.7	09/20/2023	18:11	ac
Sodium	42	1	mg/L		1		09/19/2023	09:20	ejc	EPA 200.7	09/20/2023	18:11	ac

## DQF Flags Definition:

U Constituent results were non-detect.

1 The MS/MSD did not meet QC criteria.

J Reported value is estimated; detected at a concentration below the RL and above the laboratory MDL.

b The Blank was positive for constituent but less than the PQL

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



October 4, 2023

Innovative Ag Services, LLC

Lab No. : VI 2346278  
 Customer No. : 4018573

## Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	09/19/2023:210515EJC	Blank	mg/L		ND	<1	
		(STK2352436-004)	LCS	mg/L	12.00	104%	85-115	
			MS	mg/L	12.00	105%	75-125	
			MSD	mg/L	12.00	97.4%	75-125	
			MSRPD	mg/L		3.8%	≤20.0	
		(CC 2383155-001)	MS	mg/L	12.00	83.6%	75-125	
			MSD	mg/L	12.00	54.6%	<1/4	
			MSRPD	mg/L		4.2%	≤20.0	
Magnesium	200.7	09/19/2023:210515EJC	Blank	mg/L		ND	<1	
		(STK2352436-004)	LCS	mg/L	12.00	105%	85-115	
			MS	mg/L	12.00	88.7%	75-125	
			MSD	mg/L	12.00	78.6%	75-125	
			MSRPD	mg/L		1.6%	≤20	
		(CC 2383155-001)	MS	mg/L	12.00	87.5%	75-125	
			MSD	mg/L	12.00	59.4%	<1/4	
			MSRPD	mg/L		4.0%	≤20	
Sodium	200.7	09/19/2023:210515EJC	Blank	mg/L		ND	<1	
		(STK2352436-004)	LCS	mg/L	12.00	114%	85-115	
			MS	mg/L	12.00	50.7%	<1/4	406
			MSD	mg/L	12.00	-41.4%	<1/4	
			MSRPD	mg/L		4.0%	≤20.0	
		(CC 2383155-001)	MS	mg/L	12.00	87.1%	75-125	
			MSD	mg/L	12.00	68.5%	<1/4	
			MSRPD	mg/L		3.6%	≤20.0	

## 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.
- 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.

October 4, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2346278  
 Customer No. : 4018573

**Quality Control - Wet Chem**

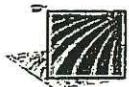
Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
Alkalinity (as CaCO3)	2320B	09/20/2023:210530AMM	ND	mg/L		0.4%	10	406
Bicarbonate	2320B	(SP 2315663-001)	Dup	mg/L		0.3%	10	
E. C.	2320B	(SP 2315663-001)	Dup	umhos/cm		0%	5	
Solids, Total Dissolved	2540CE	09/19/2023:210493CTL	Blank	mg/L		ND	<20 90-110	
			LCS	mg/L	991.5	99.7%		
			Dup	mg/L		0.8%		5
			Dup	mg/L		0.7%		5
Chloride	300.0	09/15/2023:210455LDM	Blank	mg/L		ND	<1 90-110 67-117 67-117 67-117 67-117 67-117 67-117	
			LCS	mg/L	25.00	102 %		
			MS	mg/L	50.00	97.7 %		
			MSD	mg/L	50.00	98.0 %		
			MSRPD	mg/L	10.00	0.2%		≤7
			MS	mg/L	50.00	100 %		
			MSD	mg/L	50.00	100 %		
			MSRPD	mg/L	10.00	0.1%		≤7
Nitrate + Nitrite as N	300.0	09/15/2023:210455LDM	Blank	mg/L		ND	<0.4 90-110 86-112 86-112 86-112 86-112 86-112 86-112	
			LCS	mg/L	20.00	102 %		
			MS	mg/L	40.00	89.4 %		
			MSD	mg/L	40.00	89.5 %		
			MSRPD	mg/L	10.00	0.03%		≤7
			MS	mg/L	40.00	101 %		
			MSD	mg/L	40.00	100 %		
			MSRPD	mg/L	10.00	0.3%		≤7
Nitrate Nitrogen	300.0	09/15/2023:210455LDM	Blank	mg/L		ND	<0.4 90-110 86-112 86-112 86-112 86-112 86-112 86-112	
			LCS	mg/L	20.00	102 %		
			MS	mg/L	40.00	89.4 %		
			MSD	mg/L	40.00	89.5 %		
			MSRPD	mg/L	10.00	0.03%		≤7
			MS	mg/L	40.00	101 %		
			MSD	mg/L	40.00	100 %		
			MSRPD	mg/L	10.00	0.3%		≤7
Sulfate Sulfur	300.0	09/15/2023:210455LDM	Blank	mg/L		1	<0.5 90-110 18-165 18-165 18-165 18-165 18-165 18-165	
			LCS	mg/L	50.00	102 %		
			MS	mg/L	100.0	98.3 %		
			MSD	mg/L	100.0	98.7 %		
			MSRPD	mg/L	10.00	0.3%		≤7
			MS	mg/L	100.0	98.1 %		
			MSD	mg/L	100.0	98.0 %		
			MSRPD	mg/L	10.00	0.02%		≤7
Nitrogen, Total Kjeldahl	351.2	09/28/2023:210923STA	Blank	mg/L		ND	<0.5 73-124 <1/4 <1/4 ≤20 90-110 90-110 ≤20	
			LCS	mg/L	12.00	91.9%		
			MS	mg/L	12.00	77.4%		
			MSD	mg/L	12.00	80.1%		
			MSRPD	mg/L		3.5%		
			MS	mg/L	12.00	86.4%		
			MSD	mg/L	12.00	90.3%		
			MSRPD	mg/L		4.4%		

**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**

- 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

Nº 41352

ID: # 0009

2346278

LABORATORY: F6LSITE NAME: COWLIFORNIA DAIRYBilling: IAS

## ANALYSIS TO BE COMPLETED:

### Irrigation/Ground Water (ELAP Standards)

- W1 EC, NO<sub>3</sub>N (Dom)  
 W2 EC, NO<sub>3</sub>N, TDS, TN (Irr)  
 W3 NH<sub>4</sub>-N (Ammonium)  
 W4 EC, NO<sub>3</sub>N, Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl, TDS (Dom, GM)  
 W5 EC, NO<sub>3</sub>N, TDS, TN, Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Irr, GM)  
 W6 NO<sub>3</sub>N, NO<sub>2</sub> (Dom ILRP, Annually)  
 W7 Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>, Cl + Lab Filtering (GWM)  
 W8 Other: \_\_\_\_\_

(Q) Q. A. C. 2023  
 (Q) Q. A. C. 2023

### Plant Tissue

- P1 TN, NO<sub>3</sub>N, PO<sub>4</sub>P, 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: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by
1 IWE-37	IRR	WS	9-14-23 1:50	ZCKe
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 <sup>st</sup>	<u>9</u>	<u>IAS</u>		9-14-23 / 2:25
2 <sup>nd</sup>	<u>ZCKe</u>	<u>F6L</u>	9-14-23 15:55	
3 <sup>rd</sup>	<u>ZCKe</u>	<u>F6L</u>		9-14-23 16:05
4 <sup>th</sup>	<u>901</u>		9-14-23 16:05	

LABORATORY USE ONLY

Logged In By: GLS Total Samples: 14/14 Laboratory #: 1145

GLS inc 9/15/23 1145



October 19, 2023

**Lab No.** : VI 2346746  
**Customer No.** : 4018573  
**Reference** : 41461

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

### Laboratory Report

**Introduction:** This report package contains a total of 5 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 | (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
IWD-7	10/04/2023	10/04/2023	VI 2346746-001	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 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)

**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: 2023-10-20

Section: Case Narrative

Page 1 of 5

Page 1 of 5

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 CA ELAP Certification No. 2810



October 19, 2023

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

Description : IWD-7  
 Project : 0009 Cowlifornia Dairy LLC

Lab No. : VI 2346746-001  
 Customer No. : 4018573  
 Reference : 41461  
 Sampled On : October 4, 2023 at 13:25  
 Sampled By : Zeke  
 Received On : October 4, 2023 at 16:17  
 Matrix : Ag Water

### Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Alkalinity (as CaCO <sub>3</sub> )	80	10	mg/L		1		10/10/2023	12:37	amm	SM 4500-H+B	10/10/2023	16:02	amm
Bicarbonate	90	10	mg/L		1		10/10/2023	12:37	amm	SM 4500-H+B	10/10/2023	16:02	amm
Carbonate	ND	10	mg/L		1	U	10/10/2023	12:37	amm	SM 4500-H+B	10/10/2023	16:02	amm
Hydroxide	ND	10	mg/L		1	U	10/10/2023	12:37	amm	SM 4500-H+B	10/10/2023	16:02	amm
Chloride	47	1	mg/L		1		10/05/2023	16:00	ldm	EPA 300.0	10/06/2023	08:54	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U1	10/16/2023	06:40	lcr	EPA 351.2	10/17/2023	17:06	lcr
Nitrate Nitrogen	0.1	0.1	mg/L		1		10/05/2023	16:00	ldm	EPA 300.0	10/06/2023	08:54	ldm
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	U1	10/16/2023	06:40	lcr	Calc.	10/17/2023	17:06	lcr
Nitrate + Nitrite as N	0.1	0.1	mg/L		1		10/05/2023	16:00	ldm	EPA 300.0	10/06/2023	08:54	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U1	10/16/2023	06:40	lcr	EPA 351.2	10/17/2023	17:06	lcr
Conductivity	378	1	umhos/cm		1		10/10/2023	12:37	amm	SM 4500-H+B	10/10/2023	16:02	amm
Sulfate Sulfur	7.9	0.17	mg/L		1		10/05/2023	16:00	ldm	EPA 300.0	10/06/2023	08:54	ldm
Solids, Total Dissolved (TDS)	270	20	mg/L		1		10/09/2023	09:40	ctl	SM 2540 C	10/10/2023	09:00	ctl
Calcium	12	1	mg/L		1		10/10/2023	07:42	ejc	EPA 200.7	10/11/2023	11:37	ac
Magnesium	1	1	mg/L		1		10/10/2023	07:42	ejc	EPA 200.7	10/11/2023	11:37	ac
Sodium	67	1	mg/L		1		10/10/2023	07:42	ejc	EPA 200.7	10/11/2023	11:37	ac

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



October 19, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2346746  
 Customer No. : 4018573

### Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Metals</b>								
Calcium	200.7	10/10/2023:211410EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	104%	85-115	
			MS	mg/L	12.00	37.3%	<¼	
		(SP 2316851-001)	MSD	mg/L	12.00	6.17%	<¼	
			MSRPD	mg/L		2.1%	≤20.0	
			MS	mg/L	12.00	-28.8%	<¼	
		(SP 2316766-001)	MSD	mg/L	12.00	193%	<¼	
			MSRPD	mg/L		8.1%	≤20.0	
Magnesium	200.7	10/10/2023:211410EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	106%	85-115	
			MS	mg/L	12.00	92.5%	75-125	
		(SP 2316851-001)	MSD	mg/L	12.00	77.3%	75-125	
			MSRPD	mg/L		3.0%	≤20	
			MS	mg/L	12.00	2570%	<¼	
		(SP 2316766-001)	MSD	mg/L	12.00	3060%	<¼	
			MSRPD	mg/L		4.2%	≤20	
Sodium	200.7	10/10/2023:211410EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	103%	85-115	
			MS	mg/L	12.00	143%	<¼	
		(SP 2316851-001)	MSD	mg/L	12.00	78.2%	75-125	
			MSRPD	mg/L		3.1%	≤20.0	
			MS	mg/L	12.00	2030%	<¼	
		(SP 2316766-001)	MSD	mg/L	12.00	5570%	<¼	
			MSRPD	mg/L		3.2%	≤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.

October 19, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2346746  
 Customer No. : 4018573

**Quality Control - Wet Chem**

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
Alkalinity (as CaCO3)	2320B	10/10/2023:211404AMM	ND	mg/L		0.3%	10	
Bicarbonate	2320B	(STK2353540-008)	Dup	mg/L		0.2%	10	
E. C.	2320B	(STK2353540-008)	Dup	umhos/cm		0.1%	5	
Solids, Total Dissolved	2540CE	10/09/2023:211328CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	102%	90-110	
			Dup	mg/L		1.36%	5	
			Dup	mg/L		1.57%	5	
Chloride	300.0	10/05/2023:211326LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	100%	90-110	
			MS	mg/L	50.00	94.3%	67-117	
			MSD	mg/L	50.00	93.8%	67-117	
			MSRPD	mg/L		0.3%	≤7	
			MS	mg/L	50.00	92.3%	67-117	
			MSD	mg/L	50.00	93.0%	67-117	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	40.00	100%	86-112	
Nitrate + Nitrite as N	300.0	10/05/2023:211326LDM	MSD	mg/L	40.00	100%	86-112	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	40.00	100%	86-112	
			MSD	mg/L	40.00	100%	86-112	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	40.00	100%	86-112	
			MSD	mg/L	40.00	100%	86-112	
			MSRPD	mg/L		0.4%	≤7	
Nitrate Nitrogen	300.0	10/05/2023:211326LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	99.9%	90-110	
			MS	mg/L	40.00	102%	86-112	
			MSD	mg/L	40.00	101%	86-112	
			MSRPD	mg/L		0.4%	≤7	
			MS	mg/L	40.00	100%	86-112	
			MSD	mg/L	40.00	100%	86-112	
			MSRPD	mg/L		0.4%	≤7	
Sulfate Sulfur	300.0	10/05/2023:211326LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	101%	90-110	
			MS	mg/L	100.0	101%	18-165	
			MSD	mg/L	100.0	100%	18-165	
			MSRPD	mg/L		0.3%	≤7	
			MS	mg/L	100.0	99.0%	18-165	
			MSD	mg/L	100.0	99.5%	18-165	
			MSRPD	mg/L		0.5%	≤7	
Nitrogen, Total Kjeldahl	351.2	10/16/2023:211697LCR	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	89.7%	73-124	
			MS	mg/L	12.00	85.6%	90-110	435
			MSD	mg/L	12.00	87.6%	90-110	435
			MSRPD	mg/L		2.3%	≤20	
			MS	mg/L	12.00	83.3%	90-110	435
			MSD	mg/L	12.00	79.3%	90-110	435
			MSRPD	mg/L		2.9%	≤20	

**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

Nº 41461

ID: # 0009

2346746

LABORATORY: FSLSITE NAME: COWLIFORM DAIRY

Authorized Copy Release to:

Billing: IAS

Innovative Ag Services LLC

(559) 587-2800

## ANALYSIS TO BE COMPLETED:

### Irrigation/Ground Water (ELAP Standards)

- W1 EC, NO<sub>3</sub>N (Dom) *2014/10/4*  
 W2 EC, NO<sub>3</sub>N, TDS, TN (Irr) *2014/10/4*  
 W3 NH<sub>4</sub>-N (Ammonium) *2014/10/4*  
 W4 EC, NO<sub>3</sub>N, Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl, TDS (Dom, GM)  
 W5 EC, NO<sub>3</sub>N, TDS, TN, Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Irr, GM)  
 W6 NO<sub>3</sub>N, NO<sub>2</sub> (Dom ILRP, Annually)  
 W7 Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>, Cl + Lab Filtering (GWM)  
 W8 Other: \_\_\_\_\_

### Plant Tissue

- P1 TN, NO<sub>3</sub>N, PO<sub>4</sub>P, 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: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N*	pH	Temp
1	IWD-7	IRR	10-4 / 1:25	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: \_\_\_\_\_

### CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 <sup>st</sup>	<i>E</i>	<i>IAS</i>		10-4-23 / 1:45
2 <sup>nd</sup>	<i>AJB</i>	<i>FGL</i>	10/4/23 1602	
3 <sup>rd</sup>	<i>AJB</i>	<i>FGL</i>	10/4/23 1607	10/4/23 1607
4 <sup>th</sup>	<i>ADH</i>			

LABORATORY USE ONLY

Logged In By: GLSTotal Samples: 14/23 Laboratory #: 1732

GLS Inc 10/5/23 1128



November 6, 2023

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

**Lab No.** : VI 2346976  
**Customer No.** : 4018573  
**Reference** : 41547

### Laboratory Report

**Introduction:** This report package contains a total of 5 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 | (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
IWD-6	10/16/2023	10/16/2023	VI 2346976-001	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 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)

**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: 2023-11-08

Section: Case Narrative

Page 1 of 5

Page 1 of 5

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 CA ELAP Certification No. 2810



November 6, 2023

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

Description : IWD-6  
 Project : 0009 Cowlifornia Dairy LLC

Lab No. : VI 2346976-001  
 Customer No. : 4018573  
 Reference : 41547  
 Sampled On : October 16, 2023 at 14:00  
 Sampled By : Zeke  
 Received On : October 16, 2023 at 16:10  
 Matrix : Ag Water

### Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis				
							Date	Time	Who	Method	Date	Time	Who	
<b>Dairy Analysis</b>														
Alkalinity (as CaCO <sub>3</sub> )	60	10	mg/L		1		10/17/2023	17:45	amm	SM 4500-H+B	10/17/2023	22:49	amm	
Bicarbonate	60	10	mg/L		1		10/17/2023	17:45	amm	SM 4500-H+B	10/17/2023	22:49	amm	
Carbonate	ND	10	mg/L		1	U	10/17/2023	17:45	amm	SM 4500-H+B	10/17/2023	22:49	amm	
Hydroxide	ND	10	mg/L		1	U	10/17/2023	17:45	amm	SM 4500-H+B	10/17/2023	22:49	amm	
Chloride	50	1	mg/L		1		10/17/2023	10:09	ldm	EPA 300.0	10/17/2023	18:18	ldm	
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U1	10/27/2023	07:29	sta	EPA 351.2	11/03/2023	16:54	lcr	
Nitrate Nitrogen	ND	0.1	mg/L		1	U	10/17/2023	10:09	ldm	EPA 300.0	10/17/2023	18:18	ldm	
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	UIJ	10/27/2023	07:29	sta	Calc.	11/03/2023	16:54	lcr	
Nitrate + Nitrite as N	ND	0.1	mg/L		1	J	10/17/2023	10:09	ldm	EPA 300.0	10/17/2023	18:18	ldm	
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U1	10/27/2023	07:29	sta	EPA 351.2	11/03/2023	16:54	lcr	
Conductivity	327	1	umhos/cm		1		10/17/2023	17:45	amm	SM 4500-H+B	10/17/2023	22:49	amm	
Sulfate Sulfur	7.7	0.17	mg/L		1		10/17/2023	10:09	ldm	EPA 300.0	10/17/2023	18:18	ldm	
Solids, Total Dissolved (TDS)	230	20	mg/L		1		10/17/2023	14:45	ctl	SM 2540 C	10/18/2023	11:00	ctl	
Calcium	13	1	mg/L		1		10/18/2023	07:45	ejc	EPA 200.7	10/19/2023	12:19	ac	
Magnesium	2	1	mg/L		1		10/18/2023	07:45	ejc	EPA 200.7	10/19/2023	12:19	ac	
Sodium	53	1	mg/L		1		10/18/2023	07:45	ejc	EPA 200.7	10/19/2023	12:19	ac	

## DQF Flags Definition:

U Constituent results were non-detect.

1 The MS/MSD did not meet QC criteria.

J Reported value is estimated; detected at a concentration below the RL and above the laboratory MDL.

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



November 6, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2346976  
 Customer No. : 4018573

### Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	10/18/2023:211755EJC	Blank	mg/L		ND	<1	
		(SP 2317486-001)	LCS	mg/L	12.00	102%	85-115	
			MS	mg/L	12.00	103%	75-125	
			MSD	mg/L	12.00	95.9%	75-125	
			MSRPD	mg/L		3.0%	≤20.0	
		(SP 2317488-001)	MS	mg/L	12.00	133%	<1/4	406
			MSD	mg/L	12.00	106%	75-125	
			MSRPD	mg/L		1.1%	≤20.0	
Magnesium	200.7	10/18/2023:211755EJC	Blank	mg/L		ND	<1	
		(SP 2317486-001)	LCS	mg/L	12.00	101%	85-115	
			MS	mg/L	12.00	112%	75-125	
			MSD	mg/L	12.00	107%	75-125	
			MSRPD	mg/L		3.5%	≤20	
		(SP 2317488-001)	MS	mg/L	12.00	533%	<1/4	406
			MSD	mg/L	12.00	-156%	<1/4	
			MSRPD	mg/L		6.6%	≤20	
Sodium	200.7	10/18/2023:211755EJC	Blank	mg/L		ND	<1	
		(SP 2317486-001)	LCS	mg/L	12.00	104%	85-115	
			MS	mg/L	12.00	197%	<1/4	406
			MSD	mg/L	12.00	177%	<1/4	
			MSRPD	mg/L		2.7%	≤20.0	
		(SP 2317488-001)	MS	mg/L	12.00	1730%	<1/4	406
			MSD	mg/L	12.00	4470%	<1/4	
			MSRPD	mg/L		2.8%	≤20.0	

#### 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.
- 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.

November 6, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2346976  
 Customer No. : 4018573

**Quality Control - Wet Chem**

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
Alkalinity (as CaCO3)	2320B	10/17/2023:211747AMM	ND	mg/L		0.8%	10	406
Bicarbonate	2320B	(VI 2346976-001)	Dup	mg/L		0%	10	
Carbonate	2320B	(VI 2346976-001)	Dup	mg/L		4.08%	10	
E. C.	2320B	(VI 2346976-001)	Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	10/17/2023:211713CTL  (VI 2346950-002) (VI 2346950-002)	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	103%	90-110	
			Dup	mg/L		2.09%	5	
			Dup	mg/L		0.6%	5	
Chloride	300.0	10/17/2023:211776LDM  (SP 2317504-001)  (SP 2317495-001)	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	102%	90-110	
			MS	mg/L	50.00	89.8%	67-117	
			MSD	mg/L	50.00	90.1%	67-117	
			MSRPD	mg/L		0.2%	≤7	
			MS	mg/L	50.00	97.5%	67-117	
			MSD	mg/L	50.00	97.4%	67-117	
			MSRPD	mg/L		0.0%	≤7	
Nitrate + Nitrite as N	300.0	10/17/2023:211776LDM  (SP 2317504-001)  (SP 2317495-001)	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	101%	90-110	
			MS	mg/L	40.00	97.8%	86-112	
			MSD	mg/L	40.00	98.0%	86-112	
			MSRPD	mg/L		0.1%	≤7	
			MS	mg/L	40.00	102%	86-112	
			MSD	mg/L	40.00	102%	86-112	
			MSRPD	mg/L		0.1%	≤7	
Nitrate Nitrogen	300.0	10/17/2023:211776LDM  (SP 2317504-001)  (SP 2317495-001)	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	101%	90-110	
			MS	mg/L	40.00	97.8%	86-112	
			MSD	mg/L	40.00	98.0%	86-112	
			MSRPD	mg/L		0.1%	≤7	
			MS	mg/L	40.00	102%	86-112	
			MSD	mg/L	40.00	102%	86-112	
			MSRPD	mg/L		0.1%	≤7	
Sulfate Sulfur	300.0	10/17/2023:211776LDM  (SP 2317504-001)  (SP 2317495-001)	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	102%	90-110	
			MS	mg/L	100.0	91.7%	18-165	
			MSD	mg/L	100.0	91.7%	18-165	
			MSRPD	mg/L		0.0%	≤7	
			MS	mg/L	100.0	73.7%	18-165	
			MSD	mg/L	100.0	76.6%	18-165	
			MSRPD	mg/L		1.5%	≤7	
Nitrogen, Total Kjeldahl	351.2	10/27/2023:212161STA  (STK2354204-006)  (STK2354204-008)	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
			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
			MSD	mg/L	12.00	88.1%	90-110	435
			MSRPD	mg/L		1.0%	≤20	

**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**

- 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

Nº 41547

ID: # 00092346976SITE NAME: California DairiesBilling: IAS

## ANALYSIS TO BE COMPLETED:

### Irrigation/Ground Water (ELAP Standards)

- W1 EC, NO<sub>3</sub>N (Dom)  
 W2 EC, NO<sub>3</sub>N, TDS, TN (Irr)  
 W3 NH<sub>4</sub>-N (Ammonium)  
 W4 EC, NO<sub>3</sub>N, Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl, TDS (Dom, GM)  
 W5 EC, NO<sub>3</sub>N, TDS, TN, Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Irr, GM)  
 W6 NO<sub>3</sub>N, NO<sub>2</sub> (Dom ILRP, Annually)  
 W7 Ca, Mg, Na, K, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>, Cl + Lab Filtering (GWM)  
 W8 Other: \_\_\_\_\_
- QC 1.3°C ~~10/17/23~~

### Plant Tissue

- P1 TN, NO<sub>3</sub>N, PO<sub>4</sub>P, 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: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N*	pH	Temp
1	IWD-6	IRR	W5 10-16 / 2:00	Zuke			
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 <sup>st</sup>	<u>E</u>	IAS		10-16-23 / 3:00
2 <sup>nd</sup>	<u>ZL</u>	FGL	10-16-23 15:50	
3 <sup>rd</sup>	<u>ZL</u>	FGL		10-16-23 16:10
4 <sup>th</sup>	<u>AT</u>		10/16/23	16:10

LABORATORY USE ONLY / J

Logged In By: G.S. 10/17/23 11:50 Total Samples: 10/16/23 17:10 Laboratory #: \_\_\_\_\_