



# Williams Family Heifer Ranch

## 2023 Annual Report

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<input checked="" type="checkbox"/> Report Form	<input type="checkbox"/> NA Attachment H
<input checked="" type="checkbox"/> Attachment A	<input type="checkbox"/> NA Attachment I
<input checked="" type="checkbox"/> Attachment B	<input type="checkbox"/> NA Attachment J
<input checked="" type="checkbox"/> Attachment C	<input checked="" type="checkbox"/> Manure Tracking Manifests
<input checked="" type="checkbox"/> Attachment D	<input type="checkbox"/> NA 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"/> NA Monitoring Well Report
<input checked="" type="checkbox"/> Attachment G	<input type="checkbox"/> NA 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

## Williams Family Heifer Ranch 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	Williams Family Heifer Ranch
Facility Address	5339 Avenue 120, Corcoran CA 93212

Owner/Operator as of 12/31/2023

Operator Name	Josh & Charlene Williams
Operator Phone	(559) 799-8800
Owner Name	Andrew Atsma
Owner Phone	(559) 805-6328

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).

## Williams Family Heifer Ranch 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).



## Williams Family Heifer Ranch 2023

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### 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.

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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:



Signature of Operator of Facility

DocuSigned by:



Signature of Owner of Facility

Josh & Charlene Williams

Print Name

Andrew Atsma

Print Name

6/28/2024

Title and Date

6/28/2024

Title and Date



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## Williams Family Heifer Ranch 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	1,015	989	Milk Flushed Lane	1,400	25,099.72	357,375.15	61,367.45	83,026.55	651,938.91
Hol Dry Cows	220	214	Flushed	1,450	3,122.71	39,055.00	5,467.70	25,776.30	55,114.42
Hol Heifers(15-24)	400	390	Flushed	1,000	4,071.02	54,093.00	8,541.00	25,623.00	100,442.16
Hol Heifers (7-14)	175	170	Flushed	750	1,634.94	16,133.00	2,730.20	9,307.50	20,523.04
Hol Calves (4-6)	450	438	Flushed	300	1,518.76	22,381.80	6,394.80	12,789.60	10,487.47
Hol Calves (0-3)	90	87	CalvesFlushed	150	301.67	635.10	317.55	1,270.20	764.34
	2,350	2,288			35,748.83	489,673.05	84,818.70	157,793.15	839,270.34

\* 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)**
17,813,221	278.75	36.95	247.50	2,557.50	41,362.08	5,482.79	36,725.07	379,492.41

\* 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).



## Williams Family Heifer Ranch 2023

### Nutrient Applications (Attachment B)

Field Name: 1

Wheat, 95 Acres Planted on 12/04/2022

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)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %						1,330				
02/28/2023	Ground Water: Well Avg	4.80 Acre Inches	18.20 mg/L						1,877	0	0	62,403	
02/28/2023	Waste Water: Main Lagoon	0.50 Acre Inches	369.00 57.40 301.00 mg/L						1,289,829	3,964	617	3,234	22,026
04/01/2023	Ground Water: Well Avg	5.00 Acre Inches	18.20 mg/L						1,955	0	0	65,003	
04/01/2023	Waste Water: Main Lagoon	0.50 Acre Inches	369.00 57.40 301.00 mg/L						1,289,829	3,964	617	3,234	22,026
05/12/2023	Harvest	20.20 Tons	70.20 1.77 0.39 1.79 %										20,244
Acre Inches Applied:		10.80	Totals:						2,579,658	13,091	1,233	6,468	171,457
Season Nitrogen Ratio:		0.65	Lbs Per Acre:						138	13	68	1,805	213

# Williams Family Heifer Ranch 2023

## Nutrient Applications (Attachment B)

Field Name: 1

Corn, 95 Acres Planted on 06/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
			% Moist.	Nitrogen	Phos.	Potass.								
05/28/2023	Ground Water: Well Avg	4.00 Acre Inches		18.20		mg/L			1,565	0	0	52,002		
05/28/2023	Waste Water: Main Lagoon	0.50 Acre Inches		296.00	35.00	256.00	mg/L		1,289,829	3,181	376	2,750	27,827	
06/29/2023	Ground Water: Well Avg	4.60 Acre Inches		18.20		mg/L			1,799	0	0	59,802		
07/11/2023	Ground Water: Well Avg	4.70 Acre Inches		18.20		mg/L			1,838	0	0	61,103		
07/11/2023	Waste Water: Main Lagoon	0.50 Acre Inches		220.00	34.60	220.00	mg/L		1,289,829	2,364	371	2,364	32,125	
07/22/2023	Ground Water: Well Avg	5.00 Acre Inches		18.20		mg/L			1,955	0	0	65,003		
08/10/2023	Ground Water: Well Avg	4.50 Acre Inches		18.20		mg/L			1,760	0	0	58,503		
08/10/2023	Waste Water: Main Lagoon	0.50 Acre Inches		220.00	34.60	220.00	mg/L		1,289,829	2,364	371	2,364	32,125	
08/22/2023	Ground Water: Well Avg	5.00 Acre Inches		18.20		mg/L			1,955	0	0	65,003		
09/04/2023	Ground Water: Well Avg	4.00 Acre Inches		18.20		mg/L			1,565	0	0	52,002		
09/27/2023	Harvest	29.40 Tons	73.00	1.17	0.22	0.66	%						17,646	
<b>Acre Inches Applied:</b>		<b>33.30</b>					<b>Totals:</b>		<b>3,869,488</b>	<b>20,345</b>	<b>1,119</b>	<b>7,477</b>	<b>505,496</b>	<b>17,646</b>
<b>Season Nitrogen Ratio:</b>		<b>1.15</b>					<b>Lbs Per Acre:</b>		<b>214</b>	<b>12</b>	<b>79</b>	<b>5,321</b>	<b>186</b>	



## Williams Family Heifer Ranch 2023

### Nutrient Applications (Attachment B)

Field Name: 2

Wheat, 11 Acres Planted on 11/20/2022

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.								
10/20/2022	Ground Water: Well Avg	4.50	Acre Inches		22.35			mg/L		250	0	0	8,174		
10/20/2022	Waste Water: Main Lagoon	0.50	Acre Inches		221.00	45.80	242.00	mg/L		149,349	275	57	301	4,367	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			154				
03/02/2023	Ground Water: Well Avg	5.00	Acre Inches		18.20			mg/L		226	0	0	7,527		
03/02/2023	Waste Water: Main Lagoon	0.50	Acre Inches		369.00	57.40	301.00	mg/L		149,349	459	71	374	2,550	
04/10/2023	Ground Water: Well Avg	5.00	Acre Inches		18.20			mg/L		226	0	0	7,527		
04/10/2023	Waste Water: Main Lagoon	0.50	Acre Inches		369.00	57.40	301.00	mg/L		149,349	459	71	374	2,550	
05/26/2023	Harvest	20.00	Tons		43.30	2.02	0.20	0.73 %						5,040	
<b>Acre Inches Applied:</b>		<b>16.00</b>							<b>Totals:</b>	<b>448,046</b>	<b>2,050</b>	<b>200</b>	<b>1,050</b>	<b>32,694</b>	<b>5,040</b>
<b>Season Nitrogen Ratio:</b> 0.41									<b>Lbs Per Acre:</b>						
										186	18	95	2,972		458

# Williams Family Heifer Ranch 2023

## Nutrient Applications (Attachment B)

Field Name: 2

Corn, 11 Acres Planted on 06/18/2023

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.								
05/31/2023	Ground Water: Well Avg	4.00	Acre Inches		18.20			181		0	0	6,021		
05/31/2023	Waste Water: Main Lagoon	0.50	Acre Inches		296.00	35.00	256.00	mg/L	149,349	368	44	318	3,222	
06/30/2023	Ground Water: Well Avg	4.40	Acre Inches		18.20				199	0	0	0	6,623	
07/13/2023	Ground Water: Well Avg	5.00	Acre Inches		18.20				226	0	0	0	7,527	
07/13/2023	Waste Water: Main Lagoon	0.75	Acre Inches		220.00	34.60	220.00	mg/L	224,023	411	65	411	5,580	
07/25/2023	Ground Water: Well Avg	5.00	Acre Inches		18.20				226	0	0	0	7,527	
08/14/2023	Ground Water: Well Avg	5.20	Acre Inches		18.20				236	0	0	0	7,828	
08/14/2023	Waste Water: Main Lagoon	0.75	Acre Inches		220.00	34.60	220.00	mg/L	224,023	411	65	411	5,580	
08/29/2023	Ground Water: Well Avg	4.00	Acre Inches		18.20				181	0	0	0	6,021	
09/05/2023	Ground Water: Well Avg	4.00	Acre Inches		18.20				181	0	0	0	6,021	
09/22/2023	Harvest	30.00	Tons	54.00	1.65	0.36	1.53	%					5,009	
<b>Acre Inches Applied:</b>		<b>33.60</b>						<b>Totals:</b>	<b>597,395</b>	<b>2,620</b>	<b>173</b>	<b>1,139</b>	<b>61,950</b>	<b>5,009</b>
<b>Season Nitrogen Ratio:</b>		<b>0.52</b>						<b>Lbs Per Acre:</b>						
										238	16	104	5,632	455

## Williams Family Heifer Ranch 2023

### Nutrient Applications (Attachment B)

Field Name: 3

Wheat, 76 Acres Planted on 11/15/2022

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.								
12/25/2022	Ground Water: Well Avg	4.80	Acre Inches		18.20			mg/L		1,845	0	0	60,237		
12/25/2022	Waste Water: Main Lagoon	1.00	Acre Inches		221.00	45.80	242.00	mg/L		2,063,727	3,799	787	4,160	60,340	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,064				
03/08/2023	Ground Water: Well Avg	4.80	Acre Inches		18.20			mg/L			1,502	0	0	49,922	
03/08/2023	Waste Water: Main Lagoon	1.00	Acre Inches		369.00	57.40	301.00	mg/L		2,063,727	6,344	986	5,174	35,241	
04/11/2023	Ground Water: Well Avg	5.00	Acre Inches		18.20			mg/L			1,564	0	0	52,002	
04/11/2023	Waste Water: Main Lagoon	0.50	Acre Inches		369.00	57.40	301.00	mg/L		1,031,863	3,171	493	2,587	17,621	
05/12/2023	Harvest	21.20	Tons	70.60	1.70	0.42	1.90	%						16,106	
<b>Acre Inches Applied:</b>		<b>17.10</b>							<b>Totals:</b>	<b>5,159,317</b>	<b>19,289</b>	<b>2,267</b>	<b>11,921</b>	<b>275,363</b>	<b>16,106</b>
<b>Season Nitrogen Ratio:</b>		<b>1.20</b>							<b>Lbs Per Acre:</b>	<b>254</b>	<b>30</b>	<b>157</b>	<b>3,623</b>	<b>212</b>	

# Williams Family Heifer Ranch 2023

## Nutrient Applications (Attachment B)

Field Name: 3

Corn, 76 Acres Planted on 06/15/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
				% Moist.	Nitrogen	Phos.	Potass.							
05/20/2023	Ground Water: Well Avg	4.00	Acre Inches		18.20					1,252	0	0	41,602	
05/20/2023	Waste Water: Main Lagoon	0.50	Acre Inches		296.00	35.00	256.00	mg/L		1,031,863	2,544	301	2,200	22,262
06/28/2023	Ground Water: Well Avg	4.80	Acre Inches		18.20			mg/L			1,502	0	0	49,922
07/13/2023	Ground Water: Well Avg	4.60	Acre Inches		18.20			mg/L			1,439	0	0	47,842
07/13/2023	Waste Water: Main Lagoon	1.00	Acre Inches		220.00	34.60	220.00	mg/L		2,063,727	3,782	595	3,782	51,400
07/26/2023	Ground Water: Well Avg	5.00	Acre Inches		18.20			mg/L			1,564	0	0	52,002
08/13/2023	Ground Water: Well Avg	5.20	Acre Inches		18.20			mg/L			1,627	0	0	54,082
08/13/2023	Waste Water: Main Lagoon	1.00	Acre Inches		220.00	34.60	220.00	mg/L		2,063,727	3,782	595	3,782	51,400
08/23/2023	Ground Water: Well Avg	4.40	Acre Inches		18.20			mg/L			1,376	0	0	45,762
09/05/2023	Ground Water: Well Avg	4.10	Acre Inches		18.20			mg/L			1,283	0	0	42,642
09/22/2023	Harvest	29.80	Tons	56.10	1.49	0.37	1.58	%						29,629
<b>Acre Inches Applied:</b>		<b>34.60</b>		<b>Totals:</b>					<b>5,159,317</b>	<b>20,151</b>	<b>1,491</b>	<b>9,764</b>	<b>458,917</b>	<b>29,629</b>
<b>Season Nitrogen Ratio:</b>		<b>0.68</b>		<b>Lbs Per Acre:</b>					<b>265</b>	<b>20</b>	<b>128</b>	<b>6,038</b>	<b>390</b>	

**Williams Family Heifer Ranch 2023**  
**Nutrient Applications (Attachment B)**

Field Name: 4

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)
01/01/2023	Atmospheric Deposit	14.00 Pounds	% Moist. Nitrogen Phos. Potass. Units			1,946				
	Acre Inches Applied:	0.00		Totals:		1,946				
Season Nitrogen Ratio:			Lbs Per Acre:			14				

Season Notes: Fallow

**Williams Family Heifer Ranch 2023**  
**Nutrient Applications (Attachment B)**

Field Name: 5

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.	Units						
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			2,142			
	Acre Inches Applied:	0.00						Totals:			2,142			
Season Nitrogen Ratio:								Lbs Per Acre:			14			

Season Notes: Fallow

## Williams Family Heifer Ranch 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	0.00	0.00	0.00	0.00	tons
Process Wastewater	41,641.21	6,482.86	37,819.57	398,242.63	17,813,220.80 gallons
Irrigation Water	33,357.46				
Fertilizer / Total Imports	0.00				
Atmospheric Deposition	6,636.00				
<b>Total Nitrogen Applied</b>	<b>81,634.67</b>				
Crop Nitrogen Removal	93,673.26				
<b>Nitrogen Balance</b>	<b>(12,038.59)</b>				
<b>Nitrogen Ratio</b>	<b>0.87</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.



## Williams Family Heifer Ranch 2023 Nutrient Applications (Attachment B)

### FIELD NITROGEN RATIO Calculation:

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

### ATMOSPHERIC 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

**Williams Family Heifer Ranch 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)**
11,190	288,697.49	81,430.58	264,630.45	0.00

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

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

**B. ESTIMATED TOTAL PROCESS WASTEWATER TRANSFERRED OFFSITE**

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

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

\*\* Total (Nitrogen, Phosphorus, Potassium, TDS) (lbs) = Sum of (Nitrogen, Phosphorus, Potassium, TDS) for each wastewater export event based on (Process Wastewater(gals) x 8.33lb/gal) x (NO<sub>3</sub>-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.

**Williams Family Heifer Ranch 2023**  
**Land Application Area Description Technical Report (Attachment D)**

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
1	x293 x260 x004 xxxx, x293 x260 x006 xxxx	95	Process Wastewater
2	x293 x260 x004 xxxx	11	Process Wastewater
3	x293 x010 x003 xxxx	76	Process Wastewater
4	x293 x210 x005 xxxx, x293 x210 x007 xxxx, x293 x210 x008 xxxx, x293 x210 x009 xxxx, x293 x210 x010 xxxx, x293 x210 x011 xxxx, x293 x210 x012 xxxx, x293 x210 x013 xxxx, x293 x210 x016 xxxx	139	None
5	x044 x200 x014 x000, x044 x200 x015 x000	153	None
		<hr/>	<b>474</b>

Production Area APN(s): x293 x260 x004 xxxx



## Williams Family Heifer Ranch 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
03/09/2023	369.00	57.40	301.00	3,090	108.00		2,050.00							
06/16/2023	296.00	35.00	256.00	3,900	128.00	0.00	2,590.00	7.00						
07/10/2023	220.00	34.60	220.00	4,510	155.00		2,990.00							
11/01/2023	230.00	20.80	213.00	3,910	221.00		2,600.00							
<b>Averages:</b>	<b>278.75</b>	<b>36.95</b>	<b>247.50</b>	<b>3,852</b>	<b>153.00</b>	<b>0.00</b>	<b>2,557.50</b>	<b>7.00</b>						

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

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/12/2023	2.27	0.70	1.58	51.30						%
11/01/2023	2.75	0.70	3.18	42.70						%
<b>Averages:</b>	<b>2.51</b>	<b>0.70</b>	<b>2.38</b>	<b>47.00</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	05/12/2023	35.40	7.86	35.80	70.20	9.35
1	2	Corn	09/27/2023	23.40	4.42	13.18	73.00	6.39



## Williams Family Heifer Ranch 2023

### Lab Results Summary (Attachment E)

#### **Plant Tissue**

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
2	1	Wheat	05/26/2023	40.40	3.96	14.60	43.30	8.18
2	2	Corn	09/22/2023	33.00	7.24	30.60	54.00	8.36
3	1	Wheat	05/12/2023	34.00	8.32	38.00	70.60	9.36
3	2	Corn	09/22/2023	29.80	7.44	31.60	56.10	9.49
4	1	FALLOW						
5	1	FALLOW						

#### **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>														
DW1	02/28/2023	13.20		711										
DW2	08/16/2023	13.50		738										
<b>Averages:</b>				724										
<b>Domestic</b>														
DW3	12/20/2023	15.00		758		510.00		74.00	3.00	79.00	100.00	0.00	9.60	130.00
<b>Averages:</b>				758		510.00		74.00	3.00	79.00	100.00	0.00	9.60	130.00



**INNOVATIVE AG SERVICES**

# Williams Family Heifer Ranch 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>Irrigation</b>														
IW1	08/16/2023	23.60		829		670.00	23.60							
IW2	07/11/2023	12.80		761		540.00	12.80							
<b>Averages:</b>		18.20		795		605.00	18.20							

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

**Williams Family Heifer Ranch 2023**  
**Planting and Harvest Information (Attachment F)**

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 1								
	1	Wheat	95	12/04/2022	05/12/2023	19.9	1919.0	20.2
	2	Corn	95	06/19/2023	09/27/2023	28.9	2793.0	29.4
Field: 2								
	1	Wheat	11	11/20/2022	05/26/2023	20.2	220.0	20.0
	2	Corn	11	06/18/2023	09/22/2023	29.0	330.0	30.0
Field: 3								
	1	Wheat	76	11/15/2022	05/12/2023	20.4	1611.2	21.2
	2	Corn	76	06/15/2023	09/22/2023	29.1	2264.8	29.8



# Williams Family Heifer Ranch 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



**ATTACHMENT D**

**Manure/Process Wastewater Tracking Manifest  
For  
Existing Milk Cow Dairies**

**Instructions:**

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

**Operator Information:**

Name of Operator: Josh Williams

Name of Dairy Facility: Williams Family Dairy #2

Facility Address:	<u>5339 Avenue 120</u>	<u>Corcoran, CA</u>	<u>93212</u>
	<u>Number and Street</u>	<u>City</u>	<u>Zip Code</u>

Contact Person Name and Phone Number:	<u>Josh Williams</u>	<u>559-799-8800</u>
	<u>Name</u>	<u>Phone Number</u>

**Manure/Process Wastewater Hauler Information:**

Name of Hauling Company/Person:	<u>Gutierrez Spreading</u>
---------------------------------	----------------------------

Address of Hauling Company /Person:	<u>3612 Ave 236</u>	<u>Tulare, Ca</u>	<u>93274</u>
	<u>Number and Street</u>	<u>City</u>	<u>Zip Code</u>

Contact Person:	<u>Jesse Gutierrez</u>	<u>559-280-3719</u>
	<u>Name</u>	<u>Phone Number</u>

**Destination Information:**

Composting Facility / Broker / Farmer / Other (identify) \_\_\_\_\_ (please circle one)

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

<u>Williams Family Dairy</u>	<u>6801 Avenue 120</u>	<u>Pixley, CA</u>	<u>93256</u>	<u>559-752-7018</u>
<u>Name</u>	<u>Number and Street</u>	<u>City</u>	<u>Zip Code</u>	<u>Phone Number</u>

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

<u>Williams Family Dairy</u>	<u>6801 Avenue 120</u>	<u>Pixley, Ca 93256</u>	<u>Assessor's Parcel Number</u>
<u>Number and Street</u>	<u>City</u>	<u>Zip Code</u>	

Dates Hauled: 4/11/23-4/15/23

**Amount Hauled:**

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

Manure: 5,940 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 5,940 70.7% Corral Solids

Manure Density (if amount reported in cubic yards): \_\_\_\_\_

Attachment D

D-2

Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R  
Existing Milk Cow Dairies

Method used to determine amount of manure: Number of truck loads,

Semi = 20 tons, 10-wheeler = 10 tons

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

Process Wastewater: \_\_\_\_\_ Gallons

Method used to determine volume of process wastewater: \_\_\_\_\_  
\_\_\_\_\_

**Written Agreement:**

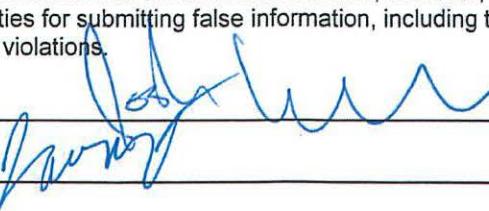
Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R) with any party that receives process wastewater from the Operator for its own use? (please check one)

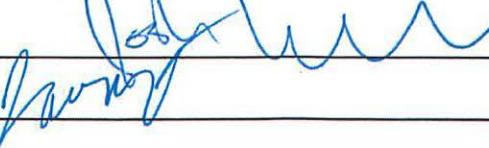
Yes       No

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.  
       (Operator shall provide initials here to acknowledge this requirement).

**Certification:**

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature:  Date: 6-26-24

Hauler's Signature:  Date: \_\_\_\_\_

**ATTACHMENT D**

**Manure/Process Wastewater Tracking Manifest  
For  
Existing Milk Cow Dairies**

**Instructions:**

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

<b>Operator Information:</b> Name of Operator: <u>Josh Williams</u>				
Name of Dairy Facility: <u>Williams Family Dairy #2</u>				
Facility Address: <u>5339 Avenue 120</u>		Corcoran, CA	93212	
Number and Street		City	Zip Code	
Contact Person Name and Phone Number: <u>Josh Williams</u>		<u>559-799-8800</u>		
Name		Phone Number		
<b>Manure/Process Wastewater Hauler Information:</b> Name of Hauling Company/Person: <u>Gutierrez Spreading</u>				
Address of Hauling Company /Person: <u>3612 Ave 236</u>		Tulare, Ca	93274	
Number and Street		City	Zip Code	
Contact Person: <u>Jesse Gutierrez</u>		<u>559-280-3719</u>		
Name		Phone Number		
<b>Destination Information:</b> Composting Facility / Broker / Farmer / Other (identify) _____ (please circle one)				
Contact information of Composting Facility, Broker, Farmer, or Other (as identified above):				
Williams Family Dairy <u>6801 Avenue 120</u>		Pixley, CA	93256	559-752-7018
Name	Number and Street	City	Zip Code	Phone Number
<b>Manure/Process Wastewater Destination Address or Assessor's Parcel Number:</b>				
Williams Family Dairy		6801 Avenue 120	Pixley, Ca 93256	
Number and Street		City	Zip Code	Assessor's Parcel Number
Dates Hauled: <u>5/11/2023</u>				
<b>Amount Hauled:</b> Enter the amount of manure hauled in tons or cubic yards (indicate the units used), the manure solids content (if amount reported in tons) or manure density (if amount reported in cubic yards), and the method used to calculate the amount:				
Manure: <u>860</u> Tons or Cubic Yards (indicate which units used)				
Manure Solids Content (if amount reported in tons): <u>860 70.7% Corral Solids</u>				
Manure Density (if amount reported in cubic yards): _____				

Attachment D

D-2

Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R  
Existing Milk Cow Dairies

Method used to determine amount of manure: Number of truck loads,  
Semi = 20 tons, 10-wheeler = 10 tons

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

Process Wastewater: \_\_\_\_\_ Gallons

Method used to determine volume of process wastewater: \_\_\_\_\_  
\_\_\_\_\_

**Written Agreement:**

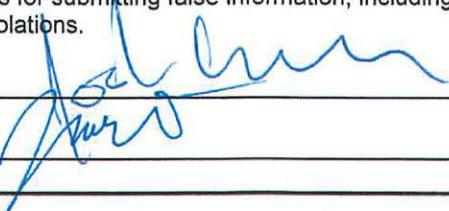
Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R) with any party that receives process wastewater from the Operator for its own use? (please check one)

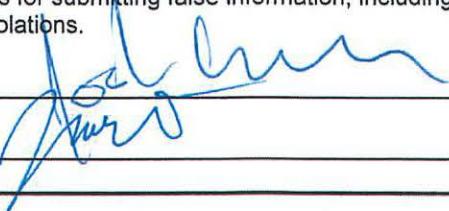
Yes \_\_\_\_\_ No \_\_\_\_\_

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.  
(Operator shall provide initials here to acknowledge this requirement).

**Certification:**

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature:  Date: 6-26-24

Hauler's Signature:  Date: \_\_\_\_\_

**ATTACHMENT D**

**Manure/Process Wastewater Tracking Manifest  
For  
Existing Milk Cow Dairies**

**Instructions:**

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

<b>Operator Information:</b> Name of Operator: <u>Josh Williams</u>				
Name of Dairy Facility: <u>Williams Family Dairy #2</u>				
Facility Address: <u>5339 Avenue 120</u>		Corcoran, CA	93212	
Number and Street		City	Zip Code	
Contact Person Name and Phone Number: <u>Josh Williams</u>		559-799-8800		
Name		Phone Number		
<b>Manure/Process Wastewater Hauler Information:</b> Name of Hauling Company/Person: <u>Gutierrez Spreading</u>				
Address of Hauling Company /Person: <u>3612 Ave 236</u>		Tulare, Ca	93274	
Number and Street		City	Zip Code	
Contact Person: <u>Jesse Gutierrez</u>		559-280-3719		
Name		Phone Number		
<b>Destination Information:</b> Composting Facility / Broker / Farmer / Other (identify) _____ (please circle one)				
Contact information of Composting Facility, Broker, Farmer, or Other (as identified above):				
Williams Family Dairy#2    5515 Avenue 120    Corcoran CA    93212    559-752-7018				
Name	Number and Street	City	Zip Code	Phone Number
<b>Manure/Process Wastewater Destination Address or Assessor's Parcel Number:</b>				
Williams Family Dairy #2- stockpile bedding		5515 Avenue 120	Corcoran, Ca 93212	
Number and Street		City	Zip Code	Assessor's Parcel Number
Dates Hauled: <u>9/26/23-10/05/23</u>				
<b>Amount Hauled:</b> Enter the amount of manure hauled in tons or cubic yards (indicate the units used), the manure solids content (if amount reported in tons) or manure density (if amount reported in cubic yards), and the method used to calculate the amount:				
Manure: <u>2,090</u> Tons or Cubic Yards (indicate which units used)				
Manure Solids Content (if amount reported in tons): <u>2,090 68.4% Corral Solids</u>				
Manure Density (if amount reported in cubic yards): _____				

Attachment D  
Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R  
Existing Milk Cow Dairies

D-2

Method used to determine amount of manure: Number of truck loads,  
Semi = 20 tons, 10-wheeler = 10 tons

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

Process Wastewater: \_\_\_\_\_ Gallons

Method used to determine volume of process wastewater: \_\_\_\_\_  
\_\_\_\_\_

**Written Agreement:**

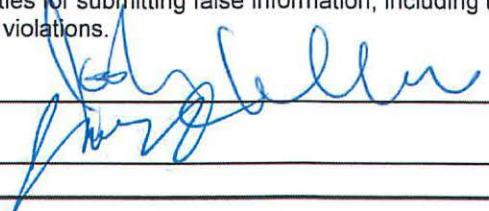
Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R) with any party that receives process wastewater from the Operator for its own use? (please check one)

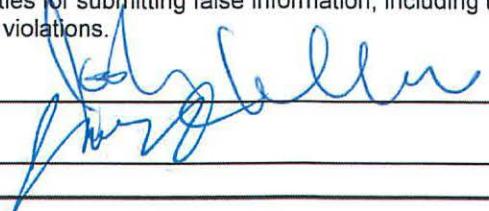
Yes       No

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after 31 December 2007 to such party.  
(Operator shall provide initials here to acknowledge this requirement).

**Certification:**

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature:  Date: 6-26-24

Hauler's Signature:  Date: \_\_\_\_\_

**ATTACHMENT D**

**Manure/Process Wastewater Tracking Manifest  
For  
Existing Milk Cow Dairies**

**Instructions:**

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

**Operator Information:**

Name of Operator: Josh Williams

Name of Dairy Facility: Williams Family Dairy #2

Facility Address:	<u>5339 Avenue 120</u>	<u>Corcoran, CA</u>	<u>93212</u>
	Number and Street	City	Zip Code

Contact Person Name and Phone Number:	<u>Josh Williams</u>	<u>559-799-8800</u>
	Name	Phone Number

**Manure/Process Wastewater Hauler Information:**

Name of Hauling Company/Person: Gutierrez Spreading

Address of Hauling Company /Person:	<u>3612 Ave 236</u>	<u>Tulare, Ca</u>	<u>93274</u>
	Number and Street	City	Zip Code

Contact Person:	<u>Jesse Gutierrez</u>	<u>559-280-3719</u>
	Name	Phone Number

**Destination Information:**

Composting Facility / Broker / Farmer / Other (identify) \_\_\_\_\_ (please circle one)

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

Williams Family Dairy	<u>6801 Avenue 120</u>	<u>Tipton CA</u>	<u>93272</u>	<u>559-752-7018</u>
Name	Number and Street	City	Zip Code	Phone Number

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

Williams Family Dairy - Compost Pile	<u>6801 Avenue 120</u>	<u>Tipton, CA 93272</u>
Number and Street	City	Zip Code

Assessor's Parcel Number

Dates Hauled: 11/14/23-11/15/23

**Amount Hauled:**

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

Manure: 680 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 680 68.4% Corral Solids

Manure Density (if amount reported in cubic yards): \_\_\_\_\_

Attachment D

D-2

Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R  
Existing Milk Cow Dairies

Method used to determine amount of manure: Number of truck loads,  
Semi = 20 tons, 10-wheeler = 10 tons

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

Process Wastewater: \_\_\_\_\_ Gallons

Method used to determine volume of process wastewater: \_\_\_\_\_  
\_\_\_\_\_

**Written Agreement:**

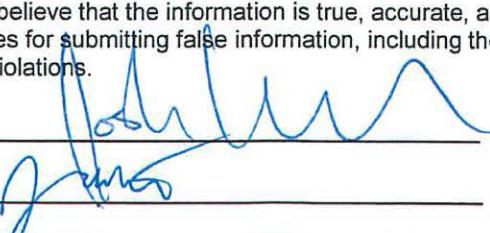
Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R) with any party that receives process wastewater from the Operator for its own use? (please check one)

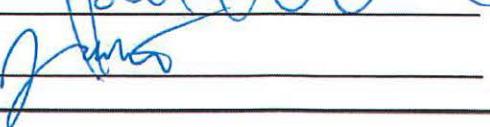
Yes \_\_\_\_\_ No \_\_\_\_\_

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.  
(Operator shall provide initials here to acknowledge this requirement).

**Certification:**

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature:  Date: 6-26-24

Hauler's Signature:  Date: \_\_\_\_\_

**ATTACHMENT D**

**Manure/Process Wastewater Tracking Manifest  
For  
Existing Milk Cow Dairies**

**Instructions:**

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

**Operator Information:**

Name of Operator: Josh Williams

Name of Dairy Facility: Williams Family Dairy #2

Facility Address:	<u>5339 Avenue 120</u>	Corcoran, CA	<u>93212</u>
	Number and Street	City	Zip Code

Contact Person Name and Phone Number:	<u>Josh Williams</u>	<u>559-799-8800</u>
	Name	Phone Number

**Manure/Process Wastewater Hauler Information:**

Name of Hauling Company/Person: Gutierrez Spreading

Address of Hauling Company /Person:	<u>3612 Ave 236</u>	Tulare, Ca	<u>93274</u>
	Number and Street	City	Zip Code

Contact Person:	<u>Jesse Gutierrez</u>	<u>559-280-3719</u>
	Name	Phone Number

**Destination Information:**

Composting Facility / Broker / Farmer / Other (identify) \_\_\_\_\_ (please circle one)

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

<u>Williams Family Dairy#2</u>	<u>5515 Avenue 120</u>	<u>Corcoran CA</u>	<u>93212</u>	<u>559-752-7018</u>
Name	Number and Street	City	Zip Code	Phone Number

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

<u>Williams Family Dairy #2</u>	<u>5515 Avenue 120</u>	Corcoran, Ca	<u>93212</u>
Number and Street	City	Zip Code	Assessor's Parcel Number

Dates Hauled: 11/30/2023

**Amount Hauled:**

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

Manure: 960 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 960 68.4%Corral Solids

Manure Density (if amount reported in cubic yards): \_\_\_\_\_

## Attachment D

D-2

**Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R  
Existing Milk Cow Dairies**

Method used to determine amount of manure: Number of truck loads,

Semi = 20 tons, 10-wheeler = 10 tons

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

Process Wastewater: \_\_\_\_\_ Gallons

Method used to determine volume of process wastewater:

## **Written Agreement:**

Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R) with any party that receives process wastewater from the Operator for its own use? (please check one)

Yes       No

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

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

## Certification:

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature:

Date: 7-26-29

Hauler's Signature:

Date:

**ATTACHMENT D**

**Manure/Process Wastewater Tracking Manifest  
For  
Existing Milk Cow Dairies**

**Instructions:**

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

**Operator Information:**

Name of Operator: Josh Williams

Name of Dairy Facility: Williams Family Dairy #2

Facility Address:	<u>5339 Avenue 120</u>	Corcoran, CA	<u>93212</u>
	Number and Street	City	Zip Code

Contact Person Name and Phone Number:	<u>Josh Williams</u>	<u>559-799-8800</u>
	Name	Phone Number

**Manure/Process Wastewater Hauler Information:**

Name of Hauling Company/Person: Gutierrez Spreading

Address of Hauling Company /Person:	<u>3612 Ave 236</u>	Tulare, Ca	<u>93274</u>
	Number and Street	City	Zip Code

Contact Person:	<u>Jesse Gutierrez</u>	<u>559-280-3719</u>
	Name	Phone Number

**Destination Information:**

Composting Facility / Broker / Farmer / Other (identify) \_\_\_\_\_ (please circle one)

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

Williams Family Dairy#2	<u>5515 Avenue 120</u>	Corcoran CA	<u>93212</u>	<u>559-752-7018</u>
Name	Number and Street	City	Zip Code	Phone Number

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

Williams Family Dairy #2	<u>5515 Avenue 120</u>	Corcoran, Ca	<u>93212</u>
Number and Street	City	Zip Code	Assessor's Parcel Number

Dates Hauled: 12/13/23-12/14/23

**Amount Hauled:**

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

Manure: 660 Tons or Cubic Yards (indicate which units used)

Manure Solids Content (if amount reported in tons): 660 68.7% Corral Solids

Manure Density (if amount reported in cubic yards): \_\_\_\_\_

## Attachment D

D-2

**Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R  
Existing Milk Cow Dairies**

Method used to determine amount of manure: Number of truck loads,  
Semi = 20 tons, 10-wheeler = 10 tons

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

Process Wastewater: \_\_\_\_\_ Gallons

Method used to determine volume of process wastewater: \_\_\_\_\_

---

### **Written Agreement:**

Does the Operator have a written agreement (in compliance with Land Application Specification E.3 of Reissued Waste Discharge Requirements General Order No. R5-2007-0035-R) with any party that receives process wastewater from the Operator for its own use? (please check one)

Yes       No

If the answer is no, the Operator agrees to have such a written agreement with any such party for any process wastewater transferred after **31 December 2007** to such party.  
       (Operator shall provide initials here to acknowledge this requirement).

#### **Certification:**

I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Operator's Signature:  Date: 

Hauler's Signature:  Date:



March 9, 2023

**Lab No.** : VI 2341246  
**Customer No.** : 4018573  
**Reference** : 40164

**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
DW1	02/28/2023	02/28/2023	VI 2341246-001	DW

### Sampling and Receipt Information:

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

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

### Test Summary

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

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

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.  
 Title: Laboratory Director  
 Date: 2023-03-14



March 9, 2023

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

Description : DW1  
 Project : 1118 Williams Family Farms #2  
*Heifer Ranch*

Lab No. : VI 2341246-001  
 Customer No.: 4018573  
 Reference : 40164  
 Sampled On : February 28, 2023 at 11:00  
 Sampled By : Sean  
 Received On : February 28, 2023 at 15:51  
 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>													
Nitrate Nitrogen	13.2	0.4	mg/L	10	1		03/01/2023	14:00	Ifs	SM 4500-NO3 F	03/01/2023	14:38	Ifs
Conductivity	711	1	umhos/cm	1600 <sup>2</sup>	1		03/07/2023	21:02	amm	SM 4500-H+B	03/08/2023	00:40	amm

DQF Flags Definition:

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

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



March 9, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2341246  
 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	(STK2332250-004)	Dup	umhos/cm		0%	5	
Nitrate Nitrogen	4500NO3F	03/01/2023:202233LFS  (VI 2341195-001)	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	96.1% 98.5% 93.8% 2.1%	<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.



# Laboratory Analysis Work Order

Nº 40164

ID: # 1118

SITE NAME: WILLIAMS FAMILY FARMS LLC

Billing: Heifer Ranch

2341246

LABORATORY: FGL

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

## 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: \_\_\_\_\_

JAS FD.6

### 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: \_\_\_\_\_

### Process Waste Water (lagoon)

L1 EC, NH<sub>4</sub>N, TKN, TP, TK, TDS (Quarterly)L2 EC, NO<sub>3</sub>N, NH<sub>4</sub>N, TKN, TP, TK, TDS, pH (Annually)L3 L1 + Ca, Mg, Na, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>S, Cl (Biennially)

L4 Other: \_\_\_\_\_

### Manure

M1 TN, TP, TK, %M (2/year)

M2 TN, TP, K, %M, Ca, Mg, Na, S, Cl, ash (Biennially)

M3 Other: \_\_\_\_\_

### Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO<sub>3</sub>N, PO<sub>4</sub>P, K-AA, Zn, Mn, Fe, Cu, SO<sub>4</sub>SS2 S1 + CEC, CaCO<sub>3</sub>, OM, C:N, TNS3 NO<sub>3</sub>N, NH<sub>4</sub>N

S4 Other: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N*	pH	Temp
1	Dom	KJL	2/28/23 11:00	SEAN	0		
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>	JL	JAS		2/29/23 2:30
2 <sup>nd</sup>	AJB	FGL	2/28/23 1535	
3 <sup>rd</sup>	AJB	FGL		2/28/23 1551
4 <sup>th</sup>			2/29/23 1551	

LABORATORY USE ONLY

Logged In By: GLS

Total Samples: 174

Laboratory #: \_\_\_\_\_

GLS MC 3/1/23 12:35



August 3, 2023

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

**Lab No.** : VI 2344525  
**Customer No.** : 4018573  
**Reference** : 41023

### 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
IW2	07/11/2023	07/11/2023	VI 2344525-001	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: 2023-08-03



August 3, 2023

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

Description : IW2

Project : 1118 Williams Family Dairy #2

**Sample Results - Inorganic***Hector Ranch*

Lab No. : VI 2344525-001  
 Customer No.: 4018573  
 Reference : 41023  
 Sampled On : July 11, 2023 at 11:00  
 Sampled By : Sean  
 Received On : July 11, 2023 at 15:35  
 Matrix : Ag Water

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	07/28/2023	08:46	sta	EPA 351.2	07/31/2023	19:56	lcr
Nitrate Nitrogen	12.8	0.4	mg/L		1		07/12/2023	13:00	lfs	SM 4500-NO3 F	07/12/2023	16:24	lfs
Nitrogen, Total as Nitrogen	12.8	0.5	mg/L		1		07/28/2023	08:46	sta	Calc.	07/31/2023	19:56	lcr
Nitrate + Nitrite as N	12.8	0.4	mg/L		1		07/12/2023	13:00	lfs	SM 4500-NO3 F	07/12/2023	16:24	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	07/28/2023	08:46	sta	EPA 351.2	07/31/2023	19:56	lcr
Conductivity	761	1	umhos/cm		1		07/16/2023	18:48	amm	SM 4500-H+B	07/17/2023	03:06	amm
Solids, Total Dissolved (TDS)	540	20	mg/L		1		07/13/2023	11:00	ctl	SM 2540 C	07/14/2023	11:00	ctl

DQF Flags Definition:

U Constituent results were non-detect.

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



August 3, 2023

**Innovative Ag Services, LLC**

Lab No. : VI 2344525  
 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	(CC 2382247-001)	Dup	umhos/cm		0.2%	5	
Solids, Total Dissolved	2540CE	07/13/2023:207664CTL (SP 2311803-001) (SP 2311803-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	993.7	ND 101% 0.03% 1%	<20 90-110 5 5	
Nitrogen, Total Kjeldahl	351.2	07/28/2023:208341STA (SP 2311944-003)	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 0.0% 12.00 12.00 1.2%	ND 94.9% 94.6% 94.6% 93.8% 92.6% ≤27	<0.5 73-124 54-136 54-136 54-136 54-136 ≤27	
Nitrate + Nitrite as N	4500NO3F	07/12/2023:207621LFS (STK2339067-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 0.2%	ND 100% 89.0% 89.7% ≤30.4	<0.4 80-120 66-125 66-125 ≤30.4	
Nitrate Nitrogen	4500NO3F	07/12/2023:207621LFS (STK2339067-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 0.2%	ND 100% 89.0% 89.7% ≤30.4	<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.



2344525  
**Laboratory Analysis Work Order**

ID: # 1118

SITE NAME: WILLIAMS FAMILY DRY HT  
 Billing: TAS Heifer Ranch PRO 21.4°C

**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	W1	IRP	W1	7/11/23 11:00	SEAN	8	
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**

1 <sup>st</sup>	Signature	Company	Received Date & Time	Relinquished Date & Time
1 <sup>st</sup>		TAS		7/11/23 3:00
2 <sup>nd</sup>		FGL	7/11/23 15:20	
3 <sup>rd</sup>		FGL		7/11/23 15:35
4 <sup>th</sup>	SPG	FGL	7/11/23 15:35	

LABORATORY USE ONLY

Logged In By: \_\_\_\_\_

Total Samples: \_\_\_\_\_

Laboratory #:



September 7, 2023

**Lab No.** : VI 2345475**Customer No.** : 4018573**Reference** : 41216

**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  | (2 pages) | : 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
DW2	08/16/2023	08/16/2023	VI 2345475-001	DW
IW1	08/16/2023	08/16/2023	VI 2345475-002	AGW

### Sampling and Receipt Information:

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

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

### Test Summary

EPA 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: 2023-09-08



September 7, 2023

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

Description : DW2  
 Project : 1118 Williams Family Dairy #2

Lab No. : VI 2345475-001  
 Customer No.: 4018573  
 Reference : 41216  
 Sampled On : August 16, 2023 at 10:02  
 Sampled By : Frank  
 Received On : August 16, 2023 at 16:05  
 Matrix : Drinking Water

### Sample Results - Inorganic

Heifer Ranch

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Nitrate Nitrogen	13.5	0.4	mg/L	10	1		08/17/2023	13:00	Ifs	SM 4500-NO3 F	08/17/2023	15:32	Ifs
Conductivity	738	1	umhos/cm	1600 <sup>2</sup>	1		08/22/2023	15:45	amm	SM 4500-H+B	08/22/2023	18:11	amm

DQF Flags Definition:

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

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



September 7, 2023

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

Description : IW1  
 Project : 1118 Williams Family Dairy #2

Lab No. : VI 2345475-002  
 Customer No.: 4018573  
 Reference : 41216  
 Sampled On : August 16, 2023 at 09:48  
 Sampled By : Frank  
 Received On : August 16, 2023 at 16:05  
 Matrix : Ag Water

### Sample Results - Inorganic

Heifer Ranch

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	U1	08/30/2023	08:34	sta	EPA 351.2	09/05/2023	20:11	lcr
Nitrate Nitrogen	23.6	0.4	mg/L		1		08/17/2023	13:00	lfs	SM 4500-NO3 F	08/17/2023	17:27	lfs
Nitrogen, Total as Nitrogen	23.6	0.5	mg/L		1	1	08/30/2023	08:34	sta	Calc.	09/05/2023	20:11	lcr
Nitrate + Nitrite as N	23.6	0.4	mg/L		1		08/17/2023	13:00	lfs	SM 4500-NO3 F	08/17/2023	17:27	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U1	08/30/2023	08:34	sta	EPA 351.2	09/05/2023	20:11	lcr
Conductivity	829	1	umhos/cm		1		08/22/2023	15:45	amm	SM 4500-H+B	08/22/2023	17:28	amm
Solids, Total Dissolved (TDS)	670	20	mg/L		1		08/18/2023	11:45	ctl	SM 2540 C	08/21/2023	12:00	ctl

DQF Flags Definition:

U Constituent results were non-detect.

1 The MS/MSD did not meet QC criteria.

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



September 7, 2023  
**Innovative Ag Services, LLC**

Lab No. : VI 2345475  
 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 2345472-003)	Dup	umhos/cm		0.4%	5	
Solids, Total Dissolved	2540CE	08/18/2023:209267CTL (SP 2314111-001) (SP 2314111-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	991.5	ND 101% 0.04% 0.9%	<20 90-110 5 5	
Nitrogen, Total Kjeldahl	351.2	08/30/2023:209713STA (STK2351326-005) (CH 2376855-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 12.00 12.00 12.00 12.00	ND 97.1% 88.0% 87.1% 1.0% 90.3% 90.1% 0.3%	<0.5 73-124 90-110 90-110 ≤20 90-110 90-110 ≤20	
Nitrate + Nitrite as N	4500NO3F	08/17/2023:209186LFS (VI 2345462-001)	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 100% 101% 103% 1.4%	<0.4 80-120 66-125 66-125 ≤30.4	
Nitrate Nitrogen	4500NO3F	08/17/2023:209186LFS (VI 2345438-001) (VI 2345462-001)	Blank LCS MS MSD MSRPD Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 5.609 5.609 11.22 5.609 5.609 5.609 5.609	ND 99.7% 102% 104% 2.2% ND 100% 101% 103% 1.4%	<0.4 80-120 66-125 66-125 ≤30.4 <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.

#### Explanation

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

**Laboratory Analysis Work Order**

Nº 41216

ID: # 11182345475SITE NAME: Williams Family Dairy #2Billing: IAS Hulfer Ranch**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 DW2	Dom	W1	8/16 10:02	Frank	—		
2 IW 1	Irr	W2	8/16 9:48	Frank	—		
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: 7.4 °C ROI

ID# TH4CI

**CHAIN OF CUSTODY RECORDING**

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 <sup>st</sup>	<u>SC</u>	IAS		8/16/23 2:00
2 <sup>nd</sup>	<u>SC</u>	FGL	8-16-23 15:45	
3 <sup>rd</sup>	<u>SC</u>	FGL		8-16-23 16:05
4 <sup>th</sup>	<u>SC</u>	FGL	8/16/2023 11:05	

LABORATORY USE ONLY  
Rec'd By: G.S.  
Logged In By: G.S.

8/16/2023 17:30

Total Samples: \_\_\_\_\_

Laboratory #: \_\_\_\_\_

G.S. REC'D 8/16/23 17:30



January 4, 2024

**Lab No.** : VI 2348754  
**Customer No.** : 4018573  
**Reference** : 42221

**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
DW3	12/20/2023	12/20/2023	VI 2348754-001	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: 2024-01-04



January 4, 2024

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

Description : DW3

Project : 1118 Williams Family *Dairy #2**Heifer Ranch*

Lab No. : VI 2348754-001  
 Customer No. : 4018573  
 Reference : 42221  
 Sampled On : December 20, 2023 at 10:40  
 Sampled By : Cris  
 Received On : December 20, 2023 at 16:04  
 Matrix : Drinking Water

**Sample Results - Inorganic**

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Alkalinity (as CaCO <sub>3</sub> )	80	10	mg/L		1		12/27/2023	20:13	amm	SM 4500-H+B	12/28/2023	00:36	amm
Bicarbonate	100	10	mg/L		1		12/27/2023	20:13	amm	SM 4500-H+B	12/28/2023	00:36	amm
Carbonate	ND	10	mg/L		1	U	12/27/2023	20:13	amm	SM 4500-H+B	12/28/2023	00:36	amm
Hydroxide	ND	10	mg/L		1	U	12/27/2023	20:13	amm	SM 4500-H+B	12/28/2023	00:36	amm
Chloride	130	3*	mg/L	500 <sup>2</sup>	3		12/21/2023	11:42	ldm	EPA 300.0	12/21/2023	23:17	ldm
Nitrate Nitrogen	15	0.1	mg/L	10	1		12/21/2023	11:42	ldm	EPA 300.0	12/21/2023	18:45	ldm
Conductivity	758	1	umhos/cm	1600 <sup>2</sup>	1		12/27/2023	20:13	amm	SM 4500-H+B	12/28/2023	00:36	amm
Sulfate Sulfur	9.6	0.17	mg/L		1		12/21/2023	11:42	ldm	EPA 300.0	12/21/2023	18:45	ldm
Solids, Total Dissolved (TDS)	510	20	mg/L	1000 <sup>2</sup>	1		12/22/2023	11:00	ctl	SM 2540 C	12/26/2023	11:00	ctl
Calcium	74	1	mg/L		1		12/22/2023	06:00	ac	EPA 200.7	12/23/2023	19:01	ac
Magnesium	3	1	mg/L		1		12/22/2023	06:00	ac	EPA 200.7	12/23/2023	19:01	ac
Potassium	ND	1	mg/L		1	U	12/22/2023	06:00	ac	EPA 200.7	12/23/2023	19:01	ac
Sodium	79	1	mg/L		1		12/22/2023	06:00	ac	EPA 200.7	12/23/2023	19:01	ac

DQF Flags Definition:

U Constituent results were non-detect.

ND=Non-Detected, RL=Reporting Level \* RL adjusted for dilution, Dil.=Dilution

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



January 4, 2024  
**Innovative Ag Services, LLC**

Lab No. : VI 2348754  
 Customer No. : 4018573

### Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Metals</b>								
Calcium	200.7	12/22/2023:214432AC	Blank	mg/L		ND	<1	
		(SP 2320933-001)	LCS	mg/L	12.00	101%	85-115	
			MS	mg/L	12.00	113%	75-125	
			MSD	mg/L	12.00	-152%	<1/4	
			MSRPD	mg/L		2.5%	≤20.0	
		(SP 2320933-002)	MS	mg/L	12.00	-1230%	<1/4	406
			MSD	mg/L	12.00	-1090%	<1/4	
			MSRPD	mg/L		1.5%	≤20.0	
Magnesium	200.7	12/22/2023:214432AC	Blank	mg/L		ND	<1	
		(SP 2320933-001)	LCS	mg/L	12.00	95.4%	85-115	
			MS	mg/L	12.00	809%	<1/4	406
			MSD	mg/L	12.00	744%	<1/4	
			MSRPD	mg/L		2.3%	≤20	
		(SP 2320933-002)	MS	mg/L	12.00	-358%	<1/4	406
			MSD	mg/L	12.00	-269%	<1/4	
			MSRPD	mg/L		3.1%	≤20	
Potassium	200.7	12/22/2023:214432AC	Blank	mg/L		ND	<1	
		(SP 2320933-001)	LCS	mg/L	12.00	99.6%	85-115	
			MS	mg/L	12.00	103%	75-125	
			MSD	mg/L	12.00	106%	75-125	
			MSRPD	mg/L		0.8%	≤20.0	
		(SP 2320933-002)	MS	mg/L	12.00	90.4%	75-125	
			MSD	mg/L	12.00	100%	75-125	
			MSRPD	mg/L		3.7%	≤20.0	
Sodium	200.7	12/22/2023:214432AC	Blank	mg/L		ND	<1	
		(SP 2320933-001)	LCS	mg/L	12.00	102%	85-115	
			MS	mg/L	12.00	41.7%	<1/4	406
			MSD	mg/L	12.00	-180%	<1/4	
			MSRPD	mg/L		2.7%	≤20.0	
		(SP 2320933-002)	MS	mg/L	12.00	-976%	<1/4	406
			MSD	mg/L	12.00	-804%	<1/4	
			MSRPD	mg/L		2.4%	≤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.

January 4, 2024  
**Innovative Ag Services, LLC**

Lab No. : VI 2348754  
Customer No. : 4018573

### Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
Alkalinity (as CaCO <sub>3</sub> )	2320B	(SP 2320955-002)	Dup	mg/L		1.50%	10	
Bicarbonate	2320B	(SP 2320955-002)	Dup	mg/L		1.51%	10	
E. C.	2320B	(SP 2320955-002)	Dup	umhos/cm		0.1%	5	
Solids, Total Dissolved	2540CE	12/22/2023:214452CTL  (VI 2348755-001) (VI 2348755-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	991.5	ND 101% 0.08% 0.8%	<20 90-110 5 5	
Chloride	300.0	12/21/2023:214427LDM  (SP 2320887-001)  (STK2356641-006)	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 0.0% 50.00 50.00 0.2%	ND 98.7% 98.5% 98.5% ≤7 98.8% 99.0% ≤7	<1 90-110 67-117 67-117 67-117 67-117 67-117 ≤7	
Nitrate Nitrogen	300.0	12/21/2023:214427LDM  (SP 2320887-001)  (STK2356641-006)	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 40.00 0.0% 40.00 40.00 0.1%	ND 98.5% 99.6% 99.6% ≤7 101% 101% ≤7	<0.4 90-110 86-112 86-112 86-112 86-112 86-112 ≤7	
Sulfate Sulfur	300.0	12/21/2023:214427LDM  (SP 2320887-001)  (STK2356641-006)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	50.00 100.0 100.0 100.0 0.0% 100.0 100.0 0.2%	ND 99.9% 98.6% 98.7% ≤7 101% 101% ≤7	<0.5 90-110 18-165 18-165 18-165 18-165 18-165 18-165	

#### 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.



# Laboratory Analysis Work Order

No 42221

ID: # 1118

SITE NAME: Williams Family Dairy #2  
Billing: IAS Helper Ranch

2848754

LABORATORY: FGL

Authorized Copy Release to:

Innovative Ag Services LLC  
(559) 587-2800**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: \_\_\_\_\_

201 17.5C 10/14/2023

**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	IAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N*	pH	Temp
1 DW/3	Dom	W4	12/20 10:40	Cris	0		
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>	Cris	IAS		12/20 3:15
2 <sup>nd</sup>	AJB	FGL	12/20/23 1532	
3 <sup>rd</sup>	AJB	FGL		12/20/23 1604
4 <sup>th</sup>	DJ		12/20/23 1654	

LABORATORY USE ONLY.

Logged In By: Cris

Total Samples: 1

Laboratory #: 2848754