



INNOVATIVE  
AG SERVICES

# Hynes Dairy

## 2023 Annual Report

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

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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

## Hynes Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

### Facility Information:

Name of Dairy	Hynes Dairy
Facility Address	4497 N. Colpien Road, Tulare CA 93274

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

Operator Name	Greg Hamstra
Operator Phone	(559) 804-9106
Owner Name	Greg Hamstra
Owner Phone	(559) 804-9106

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).

## Hynes Dairy 2023

### CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

#### 10. Summary of storm water discharges from the production area

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

No discharges occurred during the reporting period.

Yes. \_\_\_\_\_ Number of discharges occurred (see Attachment I).

#### 11. Summary of discharges from the land application area

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

No discharges occurred during the reporting period.

Yes. \_\_\_\_\_ Number of discharges occurred (see Attachment J).

#### 12. Nutrient Management Plan update

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

No.

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

#### 13. Manure/Process Wastewater Tracking Manifests

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

No.

Yes, see attached manifests.

#### 14. Written Agreements

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

Not applicable; no written agreements.

No changes in agreement(s).

Yes, a new or revised agreement is attached.

#### 15. Laboratory Analyses for Discharges

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

Not Applicable.

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

#### 16. Tabulated Nutrient Analytical Data

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



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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

### 17. Record-Keeping Results

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

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

### 18. Groundwater Monitoring Section

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

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

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

### 19. Storm Water Reporting Section

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

### 20. Mortality Management Practices

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

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

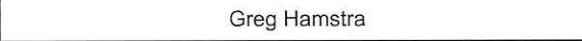
"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate,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

DocuSigned by:



C4D4BEAFBEF54CE

Signature of Operator of Facility

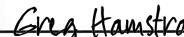


Print Name



Title and Date

DocuSigned by:



C4D4BEAFBEF54CE

Signature of Owner of Facility



Print Name



Title and Date



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## Hynes Dairy 2023

### Estimated Manure and Nutrients Generated (Attachment A)

Animal Type	Maximum No. of Head	Average No. of Head*	Housing Type	Weight	Total Manure Produced (tons/year)	NITROGEN	PHOSPHORUS	POTASSIUM	SALTS
						Net (LB) Available for Land Application			
Hol Milk Cows	1,600	1,560	Milk Flushed Lane	1,400	39,591.07	563,706.00	96,798.00	130,962.00	1,028,336.40
Hol Dry Cows	290	282	Flushed	1,450	4,114.98	51,465.00	7,205.10	33,966.90	72,627.41
Hol Heifers(15-24)	650	633	Flushed	1,000	6,607.59	87,797.10	13,862.70	41,588.10	163,025.35
Hol Heifers (7-14)	605	589	Flushed	750	5,664.58	55,896.10	9,459.34	32,247.75	71,106.29
Hol Calves (4-6)	315	307	Flushed	300	1,064.52	15,687.70	4,482.20	8,964.40	7,350.81
Hol Calves (0-3)	257	250	Calves Dry Scrape	150	866.88	1,825.00	912.50	3,650.00	2,196.39
	3,717	3,621			57,909.60	776,376.90	132,719.84	251,379.15	1,344,642.64

\* 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)**
38,388,034	299.25	54.28	465.50	2,715.00	95,691.87	17,355.64	148,854.02	868,181.86

\* 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).



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: 01-31

Alfalfa, 70 Acres Planted on 10/28/2021

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	%					980				
04/22/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
05/18/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
06/22/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
07/18/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
08/10/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
09/20/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
10/19/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30	mg/L					261	0	0	9,500	
11/15/2023	Harvest	11.80	Tons	9.75	2.55	0.25	2.52	%						38,018
<b>Acre Inches Applied:</b>		<b>35.00</b>		<b>Totals:</b>						<b>2,808</b>	<b>0</b>	<b>0</b>	<b>66,503</b>	<b>38,018</b>
<b>Season Nitrogen Ratio:</b>		<b>0.07</b>		<b>Lbs Per Acre:</b>						<b>40</b>	<b>0</b>	<b>0</b>	<b>950</b>	<b>543</b>


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## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: 01-32

Wheat, 71 Acres Planted on 11/28/2022

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			%			994				
02/25/2023	Ground Water: Well Avg	4.80	Acre Inches		3.30		mg/L			254	0	0	9,251	
02/25/2023	Waste Water: Main Lagoon	0.60	Acre Inches	295.00	69.80	643.00	mg/L		1,156,773	2,843	672	6,196	34,208	
04/16/2023	Ground Water: Well Avg	4.90	Acre Inches		3.30		mg/L			260	0	0	9,443	
04/16/2023	Waste Water: Main Lagoon	0.50	Acre Inches	368.00	58.80	532.00	mg/L		963,978	2,955	472	4,272	12,125	
05/14/2023	Harvest	22.01	Tons	64.70	1.43	0.27	1.58 %							15,777
<b>Acre Inches Applied:</b>		<b>10.80</b>		<b>Totals:</b>					2,120,751	7,306	1,145	10,468	65,027	<b>15,777</b>
<b>Season Nitrogen Ratio:</b>		<b>1.04</b>		<b>Lbs Per Acre:</b>						103	16	147	916	222



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: 01-32

Corn, 71 Acres Planted on 06/10/2023

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)
05/24/2023	Ground Water: Well Avg	4.80	Acre Inches	3.30			mg/L			254	0	0	9,251	
05/24/2023	Waste Water: Main Lagoon	0.80	Acre Inches	368.00	58.80	532.00	mg/L		1,542,364	4,728	755	6,835	19,400	
07/03/2023	Ground Water: Well Avg	5.20	Acre Inches	3.30			mg/L			275	0	0	10,022	
07/03/2023	Waste Water: Main Lagoon	0.90	Acre Inches	290.00	38.00	301.00	mg/L		1,735,160	4,192	550	4,351	43,362	
07/18/2023	Ground Water: Well Avg	5.10	Acre Inches	3.30			mg/L			271	0	0	9,829	
07/18/2023	Waste Water: Main Lagoon	1.10	Acre Inches	290.00	38.00	301.00	mg/L		2,120,751	5,123	671	5,317	52,997	
07/30/2023	Ground Water: Well Avg	5.60	Acre Inches	3.30			mg/L			297	0	0	10,792	
07/30/2023	Waste Water: Main Lagoon	0.60	Acre Inches	290.00	38.00	301.00	mg/L		1,156,773	2,795	366	2,900	28,908	
08/08/2023	Ground Water: Well Avg	5.50	Acre Inches	3.30			mg/L			292	0	0	10,600	
08/21/2023	Ground Water: Well Avg	4.90	Acre Inches	3.30			mg/L			260	0	0	9,443	
09/02/2023	Ground Water: Well Avg	5.30	Acre Inches	3.30			mg/L			281	0	0	10,214	
09/28/2023	Harvest	37.86	Tons	68.60	1.33	0.20	1.69	%						22,452
<b>Acre Inches Applied:</b>			<b>39.80</b>					<b>Totals:</b>	<b>6,555,048</b>	<b>18,767</b>	<b>2,342</b>	<b>19,404</b>	<b>214,816</b>	<b>22,452</b>
<b>Season Nitrogen Ratio:</b>			0.84					<b>Lbs Per Acre:</b>	<b>264</b>	<b>33</b>	<b>273</b>	<b>3,026</b>	<b>316</b>	



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## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: 01-33

Wheat, 72 Acres Planted on 11/02/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00		%				1,008					
02/15/2023	Ground Water: Well Avg	4.50	Acre Inches	3.30		mg/L				242	0	0	8,795		
02/15/2023	Waste Water: Main Lagoon	1.00	Acre Inches	295.00	69.80	643.00	mg/L			1,955,110	4,805	1,137	10,472	57,815	
04/20/2023	Ground Water: Well Avg	4.80	Acre Inches	3.30		mg/L				258	0	0	9,381		
04/20/2023	Waste Water: Main Lagoon	0.70	Acre Inches	368.00	58.80	532.00	mg/L			1,368,577	4,195	670	6,065	17,214	
05/14/2023	Harvest	31.91	Tons	71.40	1.31	0.44	2.25	%						17,216	
<b>Acre Inches Applied:</b>		<b>11.00</b>		<b>Totals:</b>						<b>3,323,686</b>	<b>10,508</b>	<b>1,807</b>	<b>16,537</b>	<b>93,205</b>	<b>17,216</b>
<b>Season Nitrogen Ratio:</b>		<b>0.89</b>		<b>Lbs Per Acre:</b>						<b>146</b>	<b>25</b>	<b>230</b>	<b>1,295</b>	<b>239</b>	

## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: 01-33

Corn, 72 Acres Planted on 06/13/2023

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)
05/28/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30			mg/L		269	0	0	0	9,772	
05/28/2023	Waste Water: Main Lagoon	0.80	Acre Inches	368.00	58.80	532.00	mg/L	1,564,088	4,794	766	6,931	19,673		
07/07/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30			mg/L		312	0	0	0	11,335	
07/07/2023	Waste Water: Main Lagoon	0.50	Acre Inches	290.00	38.00	301.00	mg/L	977,555	2,362	310	2,451	24,429		
07/21/2023	Ground Water: Well Avg	5.40	Acre Inches	3.30			mg/L		290	0	0	0	10,553	
07/21/2023	Waste Water: Main Lagoon	0.60	Acre Inches	290.00	38.00	301.00	mg/L	1,173,066	2,834	372	2,941	29,315		
08/02/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30			mg/L		269	0	0	0	9,772	
08/02/2023	Waste Water: Main Lagoon	0.70	Acre Inches	290.00	38.00	301.00	mg/L	1,368,577	3,306	433	3,432	34,201		
08/11/2023	Ground Water: Well Avg	5.25	Acre Inches	3.30			mg/L		282	0	0	0	10,260	
08/24/2023	Ground Water: Well Avg	5.60	Acre Inches	3.30			mg/L		301	0	0	0	10,944	
09/04/2023	Ground Water: Well Avg	4.90	Acre Inches	3.30			mg/L		264	0	0	0	9,576	
09/04/2023	Waste Water: Main Lagoon	0.80	Acre Inches	290.00	38.00	301.00	mg/L	1,564,088	3,779	495	3,922	39,087		
09/28/2023	Harvest	37.84	Tons	58.70	1.35	0.30	1.04	%						30,380
<b>Acre Inches Applied:</b>		<b>40.35</b>		<b>Totals:</b>				<b>6,647,373</b>	<b>19,061</b>	<b>2,376</b>	<b>19,677</b>	<b>218,916</b>	<b>30,380</b>	
<b>Season Nitrogen Ratio:</b>		<b>0.63</b>		<b>Lbs Per Acre:</b>				<b>265</b>	<b>33</b>	<b>273</b>	<b>3,040</b>	<b>422</b>		

## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C1

Alfalfa, 74 Acres Planted on 11/01/2020

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		%				1,036				
04/24/2023	Ground Water: Well Avg	5.50	Acre Inches	3.30		mg/L				304	0	0	11,047	
05/24/2023	Ground Water: Well Avg	5.50	Acre Inches	3.30		mg/L				304	0	0	11,047	
06/20/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30		mg/L				320	0	0	11,650	
07/20/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30		mg/L				314	0	0	11,449	
08/22/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30		mg/L				320	0	0	11,650	
09/24/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30		mg/L				314	0	0	11,449	
10/27/2023	Ground Water: Well Avg	5.30	Acre Inches	3.30		mg/L				293	0	0	10,646	
11/15/2023	Harvest	12.84	Tons	8.81	2.25	0.26	2.85	%						38,991
<b>Acre Inches Applied:</b>		<b>39.30</b>		<b>Totals:</b>						3,207	0	0	78,939	<b>38,991</b>
<b>Season Nitrogen Ratio:</b>		<b>0.08</b>		<b>Lbs Per Acre:</b>						43	0	0	1,067	<b>527</b>



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C2

Wheat, 74 Acres Planted on 11/23/2022

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			%			1,036				
03/07/2023	Ground Water: Well Avg	4.30	Acre Inches		3.30		mg/L			238	0	0	8,637	
03/07/2023	Waste Water: Main Lagoon	1.00	Acre Inches	295.00	69.80	643.00	mg/L		2,009,418	4,938	1,168	10,763	59,421	
04/13/2023	Ground Water: Well Avg	4.30	Acre Inches		3.30		mg/L			238	0	0	8,637	
04/13/2023	Waste Water: Main Lagoon	1.00	Acre Inches	368.00	58.80	532.00	mg/L		2,009,418	6,160	984	8,905	25,275	
05/13/2023	Harvest	23.33	Tons	68.90	1.36	0.30	1.60	%						14,604
<b>Acre Inches Applied:</b>		<b>10.60</b>		<b>Totals:</b>					4,018,836	12,609	2,153	19,668	101,971	<b>14,604</b>
<b>Season Nitrogen Ratio:</b>		<b>0.91</b>		<b>Lbs Per Acre:</b>						170	29	266	1,378	<b>197</b>



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C2

Corn, 74 Acres Planted on 06/07/2023

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)
05/22/2023	Ground Water: Well Avg	5.00	Acre Inches		3.30		mg/L			276	0	0	10,043	
07/01/2023	Ground Water: Well Avg	5.60	Acre Inches		3.30		mg/L			309	0	0	11,248	
07/17/2023	Ground Water: Well Avg	5.80	Acre Inches		3.30		mg/L			320	0	0	11,650	
07/27/2023	Ground Water: Well Avg	5.90	Acre Inches		3.30		mg/L			326	0	0	11,851	
07/27/2023	Waste Water: Main Lagoon	1.40	Acre Inches	290.00	38.00	301.00	mg/L		2,813,185	6,796	890	7,054	70,301	
08/08/2023	Ground Water: Well Avg	5.20	Acre Inches		3.30		mg/L			287	0	0	10,445	
08/18/2023	Ground Water: Well Avg	5.20	Acre Inches		3.30		mg/L			287	0	0	10,445	
08/31/2023	Ground Water: Well Avg	5.10	Acre Inches		3.30		mg/L			282	0	0	10,244	
09/25/2023	Harvest	35.54	Tons	58.40	1.37	0.27	1.09	%						29,977
<b>Acre Inches Applied:</b>		<b>39.20</b>		<b>Totals:</b>					2,813,185	8,884	890	7,054	146,228	<b>29,977</b>
<b>Season Nitrogen Ratio:</b>		<b>0.30</b>		<b>Lbs Per Acre:</b>						120	12	95	1,976	<b>405</b>



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C3

Alfalfa, 35 Acres Planted on 11/01/2022

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		%				490				
04/24/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30		mg/L				131	0	0	4,750	
05/24/2023	Ground Water: Well Avg	5.00	Acre Inches	3.30		mg/L				131	0	0	4,750	
06/21/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30		mg/L				152	0	0	5,510	
07/22/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30		mg/L				152	0	0	5,510	
09/01/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30		mg/L				149	0	0	5,415	
09/30/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30		mg/L				149	0	0	5,415	
10/15/2023	Harvest	13.66	Tons	8.58	2.28	0.24	2.82	%						19,931
<b>Acre Inches Applied:</b>		<b>33.00</b>		<b>Totals:</b>						<b>1,352</b>	<b>0</b>	<b>0</b>	<b>31,351</b>	<b>19,931</b>
<b>Season Nitrogen Ratio:</b>		<b>0.07</b>		<b>Lbs Per Acre:</b>						<b>39</b>	<b>0</b>	<b>0</b>	<b>896</b>	<b>569</b>



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C4

Corn, 33 Acres Planted on 04/17/2023

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)
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00		%				462				
03/20/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30		mg/L				143	0	0	5,195	
05/17/2023	Ground Water: Well Avg	5.60	Acre Inches	3.30		mg/L				138	0	0	5,016	
06/02/2023	Ground Water: Well Avg	5.40	Acre Inches	3.30		mg/L				133	0	0	4,837	
06/14/2023	Ground Water: Well Avg	5.30	Acre Inches	3.30		mg/L				131	0	0	4,747	
06/14/2023	Waste Water: Main Lagoon	1.50	Acre Inches	290.00	38.00	301.00	mg/L		1,344,138	3,247	425	3,370	33,590	
06/28/2023	Ground Water: Well Avg	5.20	Acre Inches	3.30		mg/L				128	0	0	4,658	
07/11/2023	Ground Water: Well Avg	5.30	Acre Inches	3.30		mg/L				131	0	0	4,747	
07/22/2023	Ground Water: Well Avg	5.10	Acre Inches	3.30		mg/L				126	0	0	4,568	
08/07/2023	Harvest	43.64	Tons	68.50	1.35	0.32	1.50	%						12,248
<b>Acre Inches Applied:</b>		<b>39.20</b>		<b>Totals:</b>					1,344,138	4,638	425	3,370	67,359	<b>12,248</b>
<b>Season Nitrogen Ratio:</b>		<b>0.38</b>		<b>Lbs Per Acre:</b>						141	13	102	2,041	<b>371</b>



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C5

Wheat, 71 Acres Planted on 10/31/2022

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		%				994				
01/10/2023	Ground Water: Well Avg	4.50	Acre Inches	3.30		mg/L				239	0	0	8,673	
01/10/2023	Waste Water: Main Lagoon	1.00	Acre Inches	295.00	69.80	643.00	mg/L			1,927,955	4,738	1,121	10,326	57,012
04/24/2023	Ground Water: Well Avg	4.50	Acre Inches	3.30		mg/L				239	0	0	8,673	
04/24/2023	Waste Water: Main Lagoon	0.50	Acre Inches	368.00	58.80	532.00	mg/L			963,978	2,955	472	4,272	12,125
05/22/2023	Harvest	29.17	Tons	71.40	1.37	0.33	2.55 %							16,230
<b>Acre Inches Applied:</b>		<b>10.50</b>		<b>Totals:</b>						2,891,933	9,164	1,593	14,598	86,483
<b>Season Nitrogen Ratio:</b>		<b>0.83</b>		<b>Lbs Per Acre:</b>							129	22	206	1,218
														229



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: C5

Corn, 71 Acres Planted on 06/16/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
06/01/2023	Ground Water: Well Avg	5.60	Acre Inches	3.30			mg/L		297	0	0	0	10,792	
06/01/2023	Waste Water: Main Lagoon	1.10	Acre Inches	290.00	38.00	301.00	mg/L	2,120,751	5,123	671	5,317	52,997		
07/10/2023	Ground Water: Well Avg	5.90	Acre Inches	3.30			mg/L		312	0	0	0	11,371	
07/23/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30			mg/L		302	0	0	0	10,985	
07/23/2023	Waste Water: Main Lagoon	0.90	Acre Inches	290.00	38.00	301.00	mg/L	1,735,160	4,192	550	4,351	43,362		
08/04/2023	Ground Water: Well Avg	5.30	Acre Inches	3.30			mg/L		281	0	0	0	10,214	
08/14/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30			mg/L		307	0	0	0	11,178	
08/14/2023	Waste Water: Main Lagoon	1.20	Acre Inches	290.00	38.00	301.00	mg/L	2,313,546	5,589	732	5,801	57,815		
08/26/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30			mg/L		302	0	0	0	10,985	
09/07/2023	Ground Water: Well Avg	5.40	Acre Inches	3.30			mg/L		286	0	0	0	10,406	
09/07/2023	Waste Water: Main Lagoon	0.70	Acre Inches	290.00	38.00	301.00	mg/L	1,349,569	3,260	427	3,384	33,726		
10/09/2023	Harvest	39.60	Tons	67.30	1.30	0.27	1.67	%						23,904
<b>Acre Inches Applied:</b>		<b>43.30</b>		<b>Totals:</b>				<b>7,519,026</b>	<b>20,252</b>	<b>2,380</b>	<b>18,853</b>	<b>263,831</b>	<b>23,904</b>	
<b>Season Nitrogen Ratio:</b>		<b>0.85</b>		<b>Lbs Per Acre:</b>				<b>285</b>	<b>34</b>	<b>266</b>	<b>3,716</b>	<b>337</b>		



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

Field Name: D-1

Wheat, 17 Acres Planted on 11/18/2022

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			%			238				
04/19/2023	Ground Water: Well Avg	5.00	Acre Inches		3.30		mg/L			63	0	0	2,307	
05/22/2023	Harvest	14.24	Tons	67.80	1.32	0.29	2.16 %							2,058
Acre Inches Applied:		5.00		Totals:						301	0	0	2,307	2,058
Season Nitrogen Ratio: 0.24				Lbs Per Acre:						18	0	0	136	121

Field Name: D-1

Corn, 17 Acres Planted on 06/08/2023

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)	
06/07/2023	Ground Water: Well Avg	5.60	Acre Inches	3.30			mg/L			71	0	0	2,584		
07/16/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30			mg/L			74	0	0	2,676		
07/30/2023	Ground Water: Well Avg	5.70	Acre Inches	3.30			mg/L			72	0	0	2,630		
07/30/2023	Waste Water: Main Lagoon	1.20	Acre Inches	290.00	38.00	301.00	mg/L		553,948	1,338	175	1,389	13,843		
08/07/2023	Ground Water: Well Avg	5.80	Acre Inches	3.30			mg/L			74	0	0	2,676		
08/19/2023	Ground Water: Well Avg	5.10	Acre Inches	3.30			mg/L			65	0	0	2,353		
08/19/2023	Waste Water: Main Lagoon	1.30	Acre Inches	290.00	38.00	301.00	mg/L		600,110	1,450	190	1,505	14,997		
08/30/2023	Ground Water: Well Avg	5.40	Acre Inches	3.30			mg/L			69	0	0	2,492		
09/08/2023	Ground Water: Well Avg	5.10	Acre Inches	3.30			mg/L			65	0	0	2,353		
10/13/2023	Harvest	30.49	Tons	62.70	1.30	0.24	1.18 %							5,027	
Acre Inches Applied:		41.00		Totals:						1,154,058	3,277	365	2,894	46,605	5,027
Season Nitrogen Ratio: 0.65				Lbs Per Acre:						193	21	170	2,741	296	



## Hynes Dairy 2023

### Nutrient Applications (Attachment B)

#### ***Summary of Nutrient Applications, Removal, and Balance***

	<u>Total N (Lbs)</u>	<u>Total P (Lbs)</u>	<u>Total K (Lbs)</u>	<u>Total Salts (Lbs)</u>	<u>Total Manure Applied</u>	
Solid Manure	0.00	0.00	0.00	0.00		tons
Process Wastewater	98,496.61	15,476.58	132,521.87	887,199.07	38,388,033.91	gallons
Irrigation Water	16,397.90					
Fertilizer / Total Imports	0.00					
Atmospheric Deposition	7,238.00					
<b>Total Nitrogen Applied</b>	<b>122,132.51</b>					
Crop Nitrogen Removal	286,812.93					
<b>Nitrogen Balance</b>	<b>(164,680.42)</b>					
<b>Nitrogen Ratio</b>	<b>0.43</b>					

- ▣ Nutrient applications shown in Attachment B are on a calendar year basis.
- ▣ Lab sample data results for applications are based on the sample taken closest to the application date. Lab sample data results are shown on 100% dry basis for manure applications and harvest events.
- ▣ Well Avg: Irrigation source representing the average nutrient values of all irrigation wells sampled for the facility during the reporting year.

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



## Hynes Dairy 2023 Nutrient Applications (Attachment B)

### FIELD NITROGEN RATIO Calculation:

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

### 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

## Hynes Dairy 2023

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

#### A. ESTIMATED TOTAL MANURE TRANSFERRED OFFSITE

Total Manure Exported (tons)*	Total Nitrogen Exported (lbs)**	Total Phosphorus Exported (lbs)**	Total Potassium Exported (lbs)**	Total Salts Exported (lbs)**
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\* 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)**
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\* 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.



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

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
01-31	x148 x040 x028 xxxx	70	None
01-32	x148 x040 x028 xxxx	71	Process Wastewater
01-33	x148 x040 x028 xxxx	72	Process Wastewater
C1	x148 x030 x027 xxxx	74	None
C2	x148 x030 x027 xxxx	74	Process Wastewater
C3	x148 x070 x012 xxxx	35	None
C4	x148 x070 x012 xxxx	33	Process Wastewater
C5	x148 x040 x043 xxxx	71	Process Wastewater
D-1	x148 x070 x015 xxxx, x148 x070 x016 xxxx	17	Process Wastewater
			517

Production Area APN(s): x148 x040 x043 xxxx, x148 x070 x014 xxxx

## Hynes Dairy 2023

### Lab Results Summary (Attachment E)

#### **Process Wastewater**

(mg/l/ppm unless noted otherwise)

Sample Date:	TKN	TP	TK	EC (umhos/cm)	NH4N	NO3N	TDS	pH (units)	General Minerals					
									CA	MG	NA	HCO3	CO3	SO4
02/10/2023	295.00	69.80	643.00	5,350	202.00		3,550.00							
04/20/2023	368.00	58.80	532.00	2,280	266.00	0.26	1,510.00	7.17						
07/12/2023	290.00	38.00	301.00	4,520	170.00		3,000.00							
11/06/2023	244.00	50.50	386.00	4,220	198.00		2,800.00							
<b>Averages:</b>	<b>299.25</b>	<b>54.28</b>	<b>465.50</b>	<b>4,092</b>	<b>209.00</b>	<b>0.26</b>	<b>2,715.00</b>	<b>7.17</b>						

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

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/12/2023	1.47	0.50	2.37	3.41						%
11/06/2023	2.44	0.81	2.61	45.00						%
<b>Averages:</b>	<b>1.96</b>	<b>0.65</b>	<b>2.49</b>	<b>24.20</b>						

#### **Plant Tissue**

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
01-31	1	Alfalfa	12/01/2023	51.00	4.96	50.40	9.75	12.30
01-32	1	Wheat	05/14/2023	28.60	5.40	31.60	64.70	7.26



## Hynes Dairy 2023

### Lab Results Summary (Attachment E)

**Plant Tissue**

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
01-32	2	Corn	09/28/2023	26.60	3.92	33.80	68.60	6.37
01-33	1	Wheat	05/14/2023	26.20	8.90	45.00	71.40	12.00
01-33	2	Corn	09/28/2023	27.00	5.92	20.80	58.70	5.49
C1	1	Alfalfa	12/01/2023	45.00	5.24	57.00	8.81	14.80
C2	1	Wheat	05/13/2023	27.20	6.04	32.00	68.90	10.60
C2	2	Corn	09/25/2023	27.40	5.48	21.80	58.40	5.63
C3	1	Alfalfa	12/01/2023	45.60	4.72	56.40	8.58	10.30
C4	1	Corn	08/07/2023	27.00	6.38	30.00	68.50	6.76
C5	1	Wheat	05/22/2023	27.40	6.62	51.00	71.40	11.80
C5	2	Corn	10/09/2023	26.00	5.40	33.40	67.30	6.84
D-1	1	Wheat	05/22/2023	26.40	5.84	43.20	67.80	9.77
D-1	2	Corn	10/13/2023	26.00	4.90	23.60	62.70	4.74

**Well / Irrigation Water**

(mg/l/ppm unless noted otherwise)

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



**Hynes Dairy 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
<b>Dairy</b>													
Dairy Barn	01/26/2023	3.90		200									
Averages:		3.90		200									
<b>Domestic</b>													
4495	04/06/2023	15.10		348	240.00		28.00	0.00	45.00	60.00	0.00	7.70	23.00
C1 Dom	04/06/2023	26.50		660									
C-2 Domestic							Out of service						
C10	12/13/2023	27.00		628	420.00		66.00	1.00	54.00	140.00	0.00	13.10	40.00
Dairy Barn N							New to dairy. Will sample in 2024.						
Averages:		22.87		545	330.00		47.00	0.50	49.50	100.00	0.00	10.40	31.50



## Hynes Dairy 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
<b>Irrigation</b>													
C-1								Did not run					
C-2								Out of service					
F31								Out of service					
F32								Out of service					
F33								Did not run					
F31A	10/16/2023	3.30		189		120.00	3.30						
Office								Out of service					
S Well								Did not run					
<b>Averages:</b>		3.30		189		120.00	3.30						

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

## Hynes Dairy 2023

### Planting and Harvest Information (Attachment F)

Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
<b>Field:</b> 01-31							
	1 Alfalfa	70	10/28/2021	11/15/2023	12.1	826.0	11.8
<b>Field:</b> 01-32							
	1 Wheat	71	11/28/2022	05/14/2023	29.1	1562.7	22.0
	2 Corn	71	06/10/2023	09/28/2023	35.1	2688.1	37.9
<b>Field:</b> 01-33							
	1 Wheat	72	11/02/2022	05/14/2023	25.6	2297.5	31.9
	2 Corn	72	06/13/2023	09/28/2023	34.2	2724.5	37.8
<b>Field:</b> C1							
	1 Alfalfa	74	11/01/2020	11/15/2023	12.1	950.2	12.8
<b>Field:</b> C2							
	1 Wheat	74	11/23/2022	05/13/2023	25.5	1726.4	23.3
	2 Corn	74	06/07/2023	09/25/2023	30.0	2630.0	35.5
<b>Field:</b> C3							
	1 Alfalfa	35	11/01/2022	10/15/2023	12.1	478.1	13.7
<b>Field:</b> C4							
	1 Corn	33	04/17/2023	08/07/2023	29.4	1440.1	43.6
<b>Field:</b> C5							
	1 Wheat	71	10/31/2022	05/22/2023	25.9	2071.1	29.2
	2 Corn	71	06/16/2023	10/09/2023	31.0	2811.6	39.6
<b>Field:</b> D-1							
	1 Wheat	17	11/18/2022	05/22/2023	25.2	242.1	14.2
	2 Corn	17	06/08/2023	10/13/2023	35.5	518.3	30.5



## Hynes Dairy 2023

### Weather Data (Attachment G)

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

\*Note: SWP = Standing Water Present





April 19, 2023

**Lab No.** : VI 2342097**Customer No.** : 4018573**Reference** : 40372

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

### Laboratory Report

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

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

### Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
4495 Dom	04/06/2023	04/06/2023	VI 2342097-001	DW
C1	04/06/2023	04/06/2023	VI 2342097-002	DW

### Sampling and Receipt Information:

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

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

### Test Summary

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

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

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.  
 Title: Laboratory Director  
 Date: 2023-04-20

Section: Case Narrative

Page 1 of 6

Page 1 of 6

#### Corporate Offices & Laboratory

853 Corporation Street  
 Santa Paula, CA 93060  
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#### Office & Laboratory

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9415 W. Goshen Avenue  
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 CA ELAP Certification No. 2810



April 19, 2023

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

Description : 4495 Dom  
 Project : 0116 Hynes Dairy

Lab No. : VI 2342097-001  
 Customer No.: 4018573  
 Reference : 40372  
 Sampled On : April 6, 2023 at 12:00  
 Sampled By : Sean  
 Received On : April 6, 2023 at 15:53  
 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> )	50	10	mg/L		1		04/16/2023	16:18	amm	SM 4500-H+B	04/16/2023	20:45	amm	
Bicarbonate	60	10	mg/L		1		04/16/2023	16:18	amm	SM 4500-H+B	04/16/2023	20:45	amm	
Carbonate	ND	10	mg/L		1	U	04/16/2023	16:18	amm	SM 4500-H+B	04/16/2023	20:45	amm	
Hydroxide	ND	10	mg/L		1	U	04/16/2023	16:18	amm	SM 4500-H+B	04/16/2023	20:45	amm	
Chloride	23	1	mg/L	500 <sup>2</sup>	1		04/07/2023	12:16	ldm	EPA 300.0	04/07/2023	22:21	ldm	
Nitrate Nitrogen	15.1	0.1	mg/L	10	1		04/07/2023	12:16	ldm	EPA 300.0	04/07/2023	22:21	ldm	
Conductivity	348	1	umhos/cm	1600 <sup>2</sup>	1		04/16/2023	16:18	amm	SM 4500-H+B	04/16/2023	20:45	amm	
Sulfate Sulfur	7.70	0.17	mg/L		1	I	04/07/2023	12:16	ldm	EPA 300.0	04/07/2023	22:21	ldm	
Solids, Total Dissolved (TDS)	240	20	mg/L	1000 <sup>2</sup>	1		04/11/2023	09:22	ctl	SM 2540 C	04/12/2023	11:10	ctl	
Calcium	28	1	mg/L		1		04/13/2023	07:45	ejc	EPA 200.7	04/14/2023	18:46	ac	
Magnesium	ND	1	mg/L		1	J	04/13/2023	07:45	ejc	EPA 200.7	04/14/2023	18:46	ac	
Potassium	ND	1	mg/L		1	J	04/13/2023	07:45	ejc	EPA 200.7	04/14/2023	18:46	ac	
Sodium	45	1	mg/L		1		04/13/2023	07:45	ejc	EPA 200.7	04/17/2023	14:01	ac	

## DQF Flags Definition:

U Constituent results were non-detect.

I The MS/MSD did not meet QC criteria.

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

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

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

Corporate Offices & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory
853 Corporation Street Santa Paula, CA 93060 TEL: (805)392-2000 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	563 E. Lindo Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	3442 Empresa Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2670	9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2775



April 19, 2023

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

Description : C1  
 Project : 0116 Hynes Dairy

Lab No. : VI 2342097-002  
 Customer No.: 4018573  
 Reference : 40372  
 Sampled On : April 6, 2023 at 12:15  
 Sampled By : Sean  
 Received On : April 6, 2023 at 15:53  
 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	26.5	0.4	mg/L	10	1		04/07/2023	14:30	Ifs	SM 4500-NO3 F	04/07/2023	15:14	Ifs	
Conductivity	660	1	umhos/cm	1600 <sup>2</sup>	1		04/17/2023	15:05	amm	SM 4500-H+B	04/17/2023	17:00	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.



April 19, 2023

**Innovative Ag Services, LLC**

Lab No. : VI 2342097

Customer No. : 4018573

**Quality Control - Metals**

<b>Constituent</b>	<b>Method</b>	<b>Date/ID</b>	<b>Type</b>	<b>Units</b>	<b>Conc.</b>	<b>QC Data</b>	<b>DQO</b>	<b>Note</b>
<b>Metals</b>								
Calcium	200.7	04/13/2023:203926EJC	Blank	mg/L		ND	<1	
		(CC 2381066-001)	LCS	mg/L	12.00	109 %	85-115	
			MS	mg/L	12.00	112 %	75-125	
			MSD	mg/L	12.00	70.6 %	<1/4	
			MSRPD	mg/L	4.000	4.1%	≤20.0	
		(SP 2305365-001)	MS	mg/L	12.00	79.9 %	75-125	
			MSD	mg/L	12.00	117 %	75-125	
			MSRPD	mg/L	4.000	4.6%	≤20.0	
Magnesium	200.7	04/13/2023:203926EJC	Blank	mg/L		ND	<1	
		(CC 2381066-001)	LCS	mg/L	12.00	112 %	85-115	
			MS	mg/L	12.00	116 %	75-125	
			MSD	mg/L	12.00	106 %	75-125	
			MSRPD	mg/L	4.000	2.9%	≤20	
		(SP 2305365-001)	MS	mg/L	12.00	105 %	75-125	
			MSD	mg/L	12.00	120 %	75-125	
			MSRPD	mg/L	4.000	3.9%	≤20	
Potassium	200.7	04/13/2023:203926EJC	Blank	mg/L		ND	<1	
		(CC 2381066-001)	LCS	mg/L	12.00	110 %	85-115	
			MS	mg/L	12.00	112 %	75-125	
			MSD	mg/L	12.00	109 %	75-125	
			MSRPD	mg/L	4.000	2.5%	≤20.0	
		(SP 2305365-001)	MS	mg/L	12.00	104 %	75-125	
			MSD	mg/L	12.00	115 %	75-125	
			MSRPD	mg/L	4.000	3.5%	≤20.0	
Sodium	200.7	04/13/2023:203926EJC	Blank	mg/L		ND	<1	
		(CC 2381066-001)	LCS	mg/L	12.00	110 %	85-115	
			MS	mg/L	12.00	121 %	75-125	
			MSD	mg/L	12.00	109 %	75-125	
			MSRPD	mg/L	4.000	2.2%	≤20.0	
		(SP 2305365-001)	MS	mg/L	12.00	114 %	75-125	
			MSD	mg/L	12.00	175 %	<1/4	
			MSRPD	mg/L	4.000	4.5%	≤20.0	

**Definition**

- <1/4 : High Sample Background - Spike concentration was less than one forth of the sample concentration.
- Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
- DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.
- LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
- MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

April 19, 2023

**Innovative Ag Services, LLC**

Lab No. : VI 2342097  
 Customer No. : 4018573

**Quality Control - Wet Chem**

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
Alkalinity (as CaCO3)	2320B	04/16/2023:204032AMM	ND	mg/L		0.02%	10	
Bicarbonate	2320B	(VI 2342097-001)	Dup	mg/L		0.4%	10	
E. C.	2320B	(VI 2342097-001)	Dup	umhos/cm		0%	5	
	2320B	(VI 2342006-001)	Dup	umhos/cm		0.2%	5	
Solids, Total Dissolved	2540CE	04/11/2023:203811CTL	Blank	mg/L		ND	<20	
		(SP 2305080-001)	LCS	mg/L	993.4	99.5%	90-110	
		(SP 2305080-001)	Dup	mg/L		0.3%	5	
		(SP 2305080-001)	Dup	mg/L		0.9%	5	
Chloride	300.0	04/07/2023:203785LDM	Blank	mg/L		ND	<1	
		(SP 2304777-001)	LCS	mg/L	25.00	100 %	90-110	
		(SP 2304777-001)	MS	mg/L	50.00	97.3 %	85-121	
		(SP 2304777-001)	MSD	mg/L	50.00	92.2 %	85-121	
		(SP 2304777-001)	MSRPD	mg/L	10.00	3.3%	≤19	
		(CC 2380954-001)	MS	mg/L	50.00	98.6 %	85-121	
		(CC 2380954-001)	MSD	mg/L	50.00	95.3 %	85-121	
		(CC 2380954-001)	MSRPD	mg/L	10.00	2.3%	≤19	
Nitrate Nitrogen	300.0	04/07/2023:203785LDM	Blank	mg/L		ND	<0.4	
		(SP 2304777-001)	LCS	mg/L	20.00	101 %	90-110	
		(SP 2304777-001)	MS	mg/L	40.00	105 %	85-119	
		(SP 2304777-001)	MSD	mg/L	40.00	99.6 %	85-119	
		(SP 2304777-001)	MSRPD	mg/L	10.00	4.1%	≤19	
		(CC 2380954-001)	MS	mg/L	40.00	108 %	85-119	
		(CC 2380954-001)	MSD	mg/L	40.00	104 %	85-119	
		(CC 2380954-001)	MSRPD	mg/L	10.00	3.4%	≤19	
Sulfate Sulfur	300.0	04/07/2023:203785LDM	Blank	mg/L		ND	<0.5	
		(SP 2304777-001)	LCS	mg/L	50.00	101 %	90-110	
		(SP 2304777-001)	MS	mg/L	100.0	86.9 %	82-124	
		(SP 2304777-001)	MSD	mg/L	100.0	80.6 %	82-124	
		(SP 2304777-001)	MSRPD	mg/L	10.00	2.6%	≤23	
		(CC 2380954-001)	MS	mg/L	100.0	92.8 %	82-124	
		(CC 2380954-001)	MSD	mg/L	100.0	89.7 %	82-124	
		(CC 2380954-001)	MSRPD	mg/L	10.00	1.7%	≤23	
Nitrate Nitrogen	4500NO3F	04/07/2023:203731LFS	Blank	mg/L		ND	<0.4	
		(VI 2342070-001)	LCS	mg/L	11.22	99.1%	80-120	
		(VI 2342070-001)	MS	mg/L	5.609	95.9%	66-125	
		(VI 2342070-001)	MSD	mg/L	5.609	95.7%	66-125	
		(VI 2342070-001)	MSRPD	mg/L	5.609	0.1%	≤30.4	

**Definition**

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

**Explanation**

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



# Laboratory Analysis Work Order

Nº 40372

ID: # 0116SITE NAME: HYNES DAIRYBilling: TAS2342097LABORATORY: 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: \_\_\_\_\_Rev 11.6**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, %MP5 % MoistureP6 NIRP7 Other: \_\_\_\_\_

Sample ID	Description	Analysis	Date/Time	Sampled by	TAS USE ONLY: FIELD TESTS		
					NH <sub>3</sub> N *	pH	Temp
1	4495	Dom	W4	4/16/23 12:00	SEAN	Ø	
2	C1	Dom	W1	4/16/23 12:15	SEAN	Ø	
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>		TAS		4/16/23 12:30
2 <sup>nd</sup>	AB	FGL	4/16/23 1535	
3 <sup>rd</sup>	AB	FGL		4/16/23 1553
4 <sup>th</sup>			4/16/23 1553	

LABORATORY USE ONLY

Logged In By:

Total Samples:

Laboratory #:



February 13, 2023

**Lab No.** : VI 2340503**Customer No.** : 4018573**Reference** : 40147

**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
Dairy Barn	01/26/2023	01/26/2023	VI 2340503-001	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-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
	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: 2023-02-13

Section: Case Narrative

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**Corporate Offices & Laboratory**  
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 9415 W. Goshen Avenue  
 Visalia, CA 93291  
 TEL: (559)734-9473  
 FAX: (559)734-8435  
 CA ELAP Certification No. 2810



February 13, 2023

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

Description : Dairy Barn  
 Project : 0116 Hynes Dairy

Lab No. : VI 2340503-001  
 Customer No.: 4018573  
 Reference : 40147  
 Sampled On : January 26, 2023 at 11:00  
 Sampled By : Sean  
 Received On : January 26, 2023 at 15:53  
 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	3.9	0.4	mg/L	10	1		01/27/2023	15:00	lfs	SM 4500-NO3 F	01/27/2023	16:26	lfs
Conductivity	200	1	umhos/cm	1600 <sup>2</sup>	1		02/09/2023	14:28	sta		02/09/2023	14:28	sta

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.



February 13, 2023

**Innovative Ag Services, LLC**

Lab No. : VI 2340503

Customer No. : 4018573

**Quality Control - Wet Chem**

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
E. C.	2510B	02/09/2023:201372STA (STK2331345-001)	Blank Dup	umhos/cm umhos/cm		ND 0.6%	<1 5	
Nitrate Nitrogen	4500NO3F	01/27/2023:200919LFS (CH 2370651-001)	Blank LCS MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L	11.22 5.609 5.609 86.2% 5.609	88.6% 85.3% 86.2% 0.6%	<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 40147

ID: # 01162340503LABORATORY: FGLSITE NAME: Hynes DairyBilling: JRS**ANALYSIS TO BE COMPLETED:****Irrigation/Ground Water (ELAP Standards)****W1** EC, NO<sub>3</sub>N (Dom) *R01/14.7***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: \_\_\_\_\_**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>S**S2** S1 + CEC, CaCO<sub>3</sub>, OM, C:N, TN**S3** 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	Dairy Barn	Dom	W1 1/26/23 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>	<i>Suzanne</i>	JRS		1/26/23 3:00
2 <sup>nd</sup>	<i>ASB</i>	FGL	1/26/23 15:33	
3 <sup>rd</sup>	<i>ASB</i>	FGL		1/26/23 15:33
4 <sup>th</sup>	<i>ASB</i>		1/26/23 15:33	1/13/23 13:00

LABORATORY USE ONLY

Logged In By: *GW*Total Samples: *23*Laboratory #: *17*



November 6, 2023

**Lab No.** : VI 2346978  
**Customer No.** : 4018573  
**Reference** : 41524

**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
F31A	10/16/2023	10/16/2023	VI 2346978-001	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 2510 B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2540 C	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-NO3 F	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

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

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.  
 Title: Laboratory Director  
 Date: 2023-11-08

Section: Case Narrative

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 CA ELAP Certification No. 2810



November 6, 2023

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

Description : F31A  
 Project : 0116 Hynes Dairy

Lab No. : VI 2346978-001  
 Customer No.: 4018573  
 Reference : 41524  
 Sampled On : October 16, 2023 at 08:15  
 Sampled By : Zeke  
 Received On : October 16, 2023 at 16:10  
 Matrix : Ag Water

### Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
<b>Dairy Analysis</b>													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U1	10/27/2023	07:29	sta	EPA 351.2	11/03/2023	16:58	lcr
Nitrate Nitrogen	3.3	0.4	mg/L		1		10/17/2023	12:00	lfs	SM 4500-NO3 F	10/17/2023	14:00	lfs
Nitrogen, Total as Nitrogen	3.3	0.5	mg/L		1	1	10/27/2023	07:29	sta	Calc.	11/03/2023	16:58	lcr
Nitrate + Nitrite as N	3.3	0.4	mg/L		1		10/17/2023	12:00	lfs	SM 4500-NO3 F	10/17/2023	14:00	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U1	10/27/2023	07:29	sta	EPA 351.2	11/03/2023	16:58	lcr
Conductivity	189	1	umhos/cm		1		11/06/2023	09:14	krh	SM 2510 B	11/06/2023	10:01	krh
Solids, Total Dissolved (TDS)	120	20	mg/L		1		10/18/2023	12:15	ctl	SM 2540 C	10/19/2023	11:20	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



November 6, 2023

**Innovative Ag Services, LLC**

Lab No. : VI 2346978

Customer No. : 4018573

**Quality Control - Wet Chem**

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
<b>Wet Chem</b>								
E. C.	2510B	11/06/2023:212564KRH (STK2354930-001)	Blank Dup	umhos/cm umhos/cm		ND 0.9%	<1 5	
Solids, Total Dissolved	2540CE	10/18/2023:211771CTL  (SP 2317497-001) (SP 2317497-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	991.5	ND 102% 0.8% 0.2%	<20 90-110 5 5	
Nitrogen, Total Kjeldahl	351.2	10/27/2023:212161STA  (STK2354204-006)  (STK2354204-008)	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 92.2% 78.8% 82.0% 4.1% 87.2% 88.1% 1.0%	<0.5 73-124 <1/4 <1/4 ≤20 90-110 90-110 ≤20	406 435 435
Nitrate + Nitrite as N	4500NO3F	10/17/2023:211742LFS  (SP 2317488-001)	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 101% 98.9% 98.8% 0.1%	<0.4 80-120 66-125 66-125 ≤30.4	
Nitrate Nitrogen	4500NO3F	10/17/2023:211742LFS  (SP 2317488-001)	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 101% 98.9% 98.8% 0.1%	<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.

**Explanation**

406 : Matrix Spike (MS) not within the Acceptance Range (AR) because of high analyte concentration in the sample. Data was accepted based on the LCS or CCV recovery.

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



# Laboratory Analysis Work Order

Nº 41524

ID: # 0116

23/6/23

SITE NAME: HYNES DAILY

Billing: TAS

**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: \_\_\_\_\_

Q1 1.30  
TD# T+60

**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 F31A	TAS	W2	10-16/23 8:15	Zekc			
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>		TAS		10-16-23 3:00
2 <sup>nd</sup>		PGL	10-16-23 15:58	
3 <sup>rd</sup>		FGL		10-16-23 16:10
4 <sup>th</sup>			10/16/23 16:10	

LABORATORY USE ONLY

Logged In By:

Total Samples:

Laboratory #:

GLS mrc 10/17/23 11:50