INNOVATIVE AG SERVICES

DeGroot Dairy South

2023 Annual Report

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

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

(See attached delivery confirmation)

Annual Report

DeGroot Dairy South 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	DeGroot Dairy South
Facility Address	3101 Grangeville Blvd, Hanford CA 93230

Owner/Operator as of 12/31/2023

Operator Name	Tony De Groot
Operator Phone	(559) 584-9363
Owner Name	Tony De Groot
Owner Phone	(559) 584-9363

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:

_X_ No discharges occurred during the reporting period.

__ Yes. ____ Number of discharges occurred (see Attachment H).

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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:

X 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:

X 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.

X 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?

X 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.

X 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).

X 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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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

X 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

X 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.

DeGroot Dairy South 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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

Same as owner	DocuSigned by: Tony DeGroot F88A1C9D2E18467...
Signature of Operator of Facility	Signature of Owner of Facility
Tony De Groot	Tony De Groot
Print Name	Print Name
	6/20/2024
Title and Date	Title and Date

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DeGroot Dairy South 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 Net (LB) Available for Land Application	PHOSPHORUS Net (LB) Available for Land Application	POTASSIUM Net (LB) Available for Land Application	SALTS Net (LB) Available for Land Application
Jer Milk Cows	2,081	2,028	Milk Freestall - SB	1,000	47,158.08	525,556.20	88,826.40	118,435.20	954,883.80
Jer Dry Cows	358	349	Flushed	1,100	4,602.22	45,858.60	6,369.25	30,572.40	63,692.50
Jer Heifers (15-24)	449	437	Dry Scrape	700	4,130.97	60,611.90	9,570.30	28,710.90	113,248.55
	2,888	**2,814**			**55,891.27**	**632,026.70**	**104,765.95**	**177,718.50**	**1,131,824.85**

* 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)**
95,604,859	209.75	13.39	99.40	1,167.50	167,042.48	10,665.63	79,161.01	929,783.55

* 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).

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Nutrient Applications (Attachment B)

Field Name: 1

Corn, 74 Acres Planted on 04/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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				
04/01/2023	Ground Water: Well Avg	4.30	Acre Inches		11.04			mg/L			795	0	0	37,267	
04/01/2023	Waste Water: Main Lagoon	0.90	Acre Inches		361.00	22.40	186.00	mg/L		1,808,476	5,438	337	2,802	24,555	
05/10/2023	Ground Water: Well Avg	4.87	Acre Inches		11.04			mg/L			901	0	0	42,207	
05/10/2023	Waste Water: Main Lagoon	0.91	Acre Inches		200.00	9.38	62.00	mg/L		1,828,571	3,047	143	944	15,841	
05/31/2023	Ground Water: Well Avg	5.12	Acre Inches		11.04			mg/L			946	0	0	44,374	
06/20/2023	Ground Water: Well Avg	5.09	Acre Inches		11.04			mg/L			941	0	0	44,114	
07/01/2023	Ground Water: Well Avg	4.75	Acre Inches		11.04			mg/L			878	0	0	41,167	
07/13/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			850	0	0	39,868	
07/13/2023	Waste Water: Main Lagoon	0.69	Acre Inches		200.00	17.30	84.40	mg/L		1,386,499	2,310	200	975	13,744	
07/23/2023	Ground Water: Well Avg	5.10	Acre Inches		11.04			mg/L			943	0	0	44,201	
08/08/2023	Harvest	32.08	Tons	70.50	0.94	0.32	1.41	%							13,110
	Acre Inches Applied:	**36.33**						**Totals:**		**5,023,546**	**18,085**	**680**	**4,721**	**347,339**	**13,110**
Season Nitrogen Ratio:	1.38							**Lbs Per Acre:**			**244**	**9**	**64**	**4,694**	**177**

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DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 2

Walnuts, 75 Acres Planted on 01/28/2014

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/18/2022	Compost Solids: Main	2.00	Tons	29.30	1.62	0.26	0.27	%	150		3,436	556	574	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,050				
01/28/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
02/22/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
03/19/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
04/18/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
05/20/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
06/12/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
07/01/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
08/03/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
08/27/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
09/12/2023	Harvest	4.40	Tons	49.30	2.50	0.22	1.15	%							8,366
	Acre Inches Applied:	**36.00**						**Totals:**	**150**		**11,229**	**556**	**574**	**316,224**	**8,366**
Season Nitrogen Ratio:	1.34							**Lbs Per Acre:**			**150**	**7**	**8**	**4,216**	**112**

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DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 3

Walnuts, 63 Acres Planted on 01/28/2014

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/18/2022	Compost Solids: Main	3.00	Tons	29.30	1.62	0.26	0.27	%	189		4,329	700	724	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			882				
01/19/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
02/23/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
03/20/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
04/19/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
05/21/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
06/23/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
07/15/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
08/08/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
08/27/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			629	0	0	29,514	
09/12/2023	Harvest	4.65	Tons	45.60	2.62	0.27	1.26	%							8,351
	Acre Inches Applied:	**36.00**						**Totals:**	**189**		**10,876**	**700**	**724**	**265,628**	**8,351**
Season Nitrogen Ratio:	1.30							**Lbs Per Acre:**			**173**	**11**	**12**	**4,216**	**133**

DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 4

Walnuts, 75 Acres Planted on 12/22/2016

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/18/2022	Compost Solids: Main	2.00	Tons	29.30	1.62	0.26	0.27	%	150		3,436	556	574	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,050				
01/27/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
02/21/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
03/18/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
04/17/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
05/09/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
05/29/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
06/16/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
07/20/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
08/16/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			749	0	0	35,136	
09/12/2023	Harvest	4.30	Tons	10.00	2.08	0.27	1.93	%							12,074
	Acre Inches Applied:	**36.00**						**Totals:**	**150**		**11,229**	**556**	**574**	**316,224**	**12,074**
Season Nitrogen Ratio:	0.93							**Lbs Per Acre:**			**150**	**7**	**8**	**4,216**	**161**

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Nutrient Applications (Attachment B)

Field Name: 5

Almonds, 71 Acres Planted on 12/08/2016

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/10/2022	Compost Solids: Main	3.00	Tons	29.30	1.62	0.26	0.27	%	213		4,879	789	816	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			994				
01/10/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			621	0	0	29,104	
02/11/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			621	0	0	29,104	
03/10/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
04/13/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
05/04/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			798	0	0	37,420	
05/26/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
06/15/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			798	0	0	37,420	
07/10/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
08/13/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
09/12/2023	Harvest	4.00	Tons	8.83	3.04	0.36	2.38	%							15,743
	Acre Inches Applied:	**36.00**						**Totals:**	**213**		**12,257**	**789**	**816**	**299,359**	**15,743**
Season Nitrogen Ratio:	0.78							**Lbs Per Acre:**			**173**	**11**	**12**	**4,216**	**222**

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DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 6

Almonds, 72 Acres Planted on 12/08/2016

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/10/2022	Compost Solids: Main	3.00	Tons	29.30	1.62	0.26	0.27	%	216		4,948	800	828	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,008				
01/12/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			629	0	0	29,514	
02/13/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			629	0	0	29,514	
03/12/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			719	0	0	33,731	
04/15/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			719	0	0	33,731	
05/06/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			809	0	0	37,947	
05/31/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			809	0	0	37,947	
06/18/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			809	0	0	37,947	
07/12/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			719	0	0	33,731	
08/15/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			719	0	0	33,731	
09/12/2023	Harvest	3.80	Tons	9.38	2.88	0.37	3.34	%							14,281
	Acre Inches Applied:	**36.50**						**Totals:**	**216**		**12,519**	**800**	**828**	**307,791**	**14,281**
Season Nitrogen Ratio:	0.88							**Lbs Per Acre:**			**174**	**11**	**12**	**4,275**	**198**

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DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 7

Almonds, 68 Acres Planted on 12/08/2017

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/10/2022	Compost Solids: Main	3.00	Tons	29.30	1.62	0.26	0.27	%	204		4,673	755	782	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			952				
01/09/2023	Ground Water: Well Avg	3.25	Acre Inches		11.04			mg/L			552	0	0	25,884	
02/10/2023	Ground Water: Well Avg	3.25	Acre Inches		11.04			mg/L			552	0	0	25,884	
03/09/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			594	0	0	27,875	
04/12/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			679	0	0	31,857	
05/03/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			679	0	0	31,857	
05/29/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			679	0	0	31,857	
06/20/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			679	0	0	31,857	
07/19/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			679	0	0	31,857	
08/12/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			594	0	0	27,875	
09/12/2023	Harvest	2.90	Tons	8.89	2.33	0.30	3.10	%							8,373
	Acre Inches Applied:	**33.50**						**Totals:**	**204**		**11,315**	**755**	**782**	**266,799**	**8,373**
Season Nitrogen Ratio:	1.35							**Lbs Per Acre:**			**166**	**11**	**12**	**3,924**	**123**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 8

Almonds, 71 Acres Planted on 11/07/2019

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/10/2022	Compost Solids: Main	3.00	Tons	29.30	1.62	0.26	0.27	%	213		4,879	789	816	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			994				
01/08/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			621	0	0	29,104	
02/09/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			621	0	0	29,104	
03/08/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
04/11/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
05/02/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			798	0	0	37,420	
05/31/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			798	0	0	37,420	
06/20/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
07/19/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
08/11/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			709	0	0	33,262	
09/12/2023	Harvest	2.80	Tons	9.19	2.47	0.36	2.57	%							8,918
Acre Inches Applied:		**36.00**						**Totals:**	**213**		**12,257**	**789**	**816**	**299,359**	**8,918**
Season Nitrogen Ratio:	1.37							**Lbs Per Acre:**			**173**	**11**	**12**	**4,216**	**126**

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 9

Wheat, 113 Acres Planted on 10/31/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
10/08/2022	Ground Water: Well Avg	3.58	Acre Inches		7.96			mg/L			728	0	0	40,720	
10/08/2022	Waste Water: Main Lagoon	2.93	Acre Inches		113.00	24.10	92.40	mg/L		8,990,517	8,463	1,805	6,920	143,790	
12/21/2022	Ground Water: Well Avg	3.58	Acre Inches		7.96			mg/L			728	0	0	40,720	
12/21/2022	Waste Water: Main Lagoon	2.93	Acre Inches		113.00	24.10	92.40	mg/L		8,990,517	8,463	1,805	6,920	143,790	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,582				
03/16/2023	Ground Water: Well Avg	3.00	Acre Inches		11.04			mg/L			846	0	0	39,704	
03/16/2023	Waste Water: Main Lagoon	0.75	Acre Inches		361.00	22.40	186.00	mg/L		2,301,327	6,920	429	3,565	31,247	
05/12/2023	Harvest	30.73	Tons	71.20	1.62	0.38	1.80	%							32,403
	Acre Inches Applied:	**16.77**						**Totals:**		**20,282,361**	**27,729**	**4,039**	**17,405**	**439,970**	**32,403**
Season Nitrogen Ratio:	0.86							**Lbs Per Acre:**			**245**	**36**	**154**	**3,894**	**287**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 9

Corn, 113 Acres Planted on 05/25/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
05/15/2023	Ground Water: Well Avg	4.30	Acre Inches		11.04			mg/L			1,214	0	0	56,908	
05/15/2023	Waste Water: Main Lagoon	0.45	Acre Inches		200.00	9.38	62.00	mg/L		1,380,796	2,301	107	713	11,962	
06/04/2023	Ground Water: Well Avg	4.87	Acre Inches		11.04			mg/L			1,375	0	0	64,452	
06/04/2023	Waste Water: Main Lagoon	0.41	Acre Inches		200.00	9.38	62.00	mg/L		1,258,059	2,096	98	650	10,899	
06/14/2023	Ground Water: Well Avg	4.75	Acre Inches		11.04			mg/L			1,341	0	0	62,863	
06/25/2023	Ground Water: Well Avg	5.10	Acre Inches		11.04			mg/L			1,440	0	0	67,496	
06/25/2023	Waste Water: Main Lagoon	0.49	Acre Inches		200.00	9.38	62.00	mg/L		1,503,534	2,505	118	776	13,026	
07/05/2023	Ground Water: Well Avg	5.12	Acre Inches		11.04			mg/L			1,445	0	0	67,760	
07/15/2023	Ground Water: Well Avg	5.09	Acre Inches		11.04			mg/L			1,437	0	0	67,364	
07/15/2023	Waste Water: Main Lagoon	0.49	Acre Inches		200.00	17.30	84.40	mg/L		1,503,534	2,505	217	1,057	14,904	
07/26/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			1,298	0	0	60,879	
08/07/2023	Harvest	29.86	Tons	72.80	0.80	0.28	1.28	%							14,702
	Acre Inches Applied:	**35.67**						**Totals:**		**5,645,922**	**18,958**	**540**	**3,196**	**498,512**	**14,702**
Season Nitrogen Ratio:	1.29							**Lbs Per Acre:**			**168**	**5**	**28**	**4,412**	**130**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 10

Corn, 80 Acres Planted on 04/15/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			1,120				
01/14/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			659	0	0	30,919	
03/27/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			774	0	0	36,260	
05/02/2023	Ground Water: Well Avg	4.75	Acre Inches		11.04			mg/L			950	0	0	44,505	
05/02/2023	Waste Water: Main Lagoon	0.45	Acre Inches		200.00	9.38	62.00	mg/L		977,555	1,629	76	505	8,469	
05/17/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			819	0	0	38,415	
06/06/2023	Ground Water: Well Avg	4.12	Acre Inches		11.04			mg/L			823	0	0	38,602	
06/06/2023	Waste Water: Main Lagoon	0.41	Acre Inches		200.00	9.38	62.00	mg/L		890,661	1,484	70	460	7,716	
06/15/2023	Ground Water: Well Avg	4.08	Acre Inches		11.04			mg/L			815	0	0	38,228	
06/22/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			919	0	0	43,100	
06/22/2023	Waste Water: Main Lagoon	0.49	Acre Inches		200.00	9.38	62.00	mg/L		1,064,449	1,774	83	550	9,222	
06/29/2023	Fertilize - UN32	8.00	Gallons		32.00	0.00	0.00	%			1,706	0	0	0	
06/29/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			819	0	0	38,415	
07/06/2023	Ground Water: Well Avg	4.30	Acre Inches		11.04			mg/L			859	0	0	40,289	
08/07/2023	Harvest	28.02	Tons	66.60	0.78	0.34	1.20	%							11,680
	Acre Inches Applied:	**38.57**						**Totals:**		**2,932,664**	**15,150**	**229**	**1,514**	**374,140**	**11,680**
Season Nitrogen Ratio:	1.30							**Lbs Per Acre:**			**189**	**3**	**19**	**4,677**	**146**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 11

Wheat, 47 Acres Planted on 10/28/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
10/05/2022	Ground Water: Well Avg	3.58	Acre Inches		7.96			mg/L			303	0	0	16,936	
10/05/2022	Waste Water: Main Lagoon	3.00	Acre Inches		113.00	24.10	92.40	mg/L		3,828,756	3,604	768	2,947	61,236	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			658				
05/12/2023	Harvest	24.21	Tons	68.30	1.11	0.39	1.54	%							8,008
	Acre Inches Applied:	**6.58**						**Totals:**		**3,828,756**	**4,565**	**768**	**2,947**	**78,172**	**8,008**
Season Nitrogen Ratio:	0.57							**Lbs Per Acre:**			**97**	**16**	**63**	**1,663**	**170**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 11

Corn, 47 Acres Planted on 06/15/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
05/25/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			387	0	0	18,165	
05/25/2023	Waste Water: Main Lagoon	0.85	Acre Inches		200.00	9.38	62.00	mg/L		1,084,814	1,807	85	560	9,398	
07/03/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			454	0	0	21,303	
07/03/2023	Waste Water: Main Lagoon	0.81	Acre Inches		200.00	17.30	84.40	mg/L		1,033,764	1,722	149	727	10,247	
07/22/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			364	0	0	17,064	
07/22/2023	Waste Water: Main Lagoon	0.89	Acre Inches		200.00	17.30	84.40	mg/L		1,135,864	1,892	164	799	11,259	
08/04/2023	Ground Water: Well Avg	3.75	Acre Inches		11.04			mg/L			440	0	0	20,642	
08/13/2023	Ground Water: Well Avg	3.13	Acre Inches		11.04			mg/L			368	0	0	17,229	
08/21/2023	Ground Water: Well Avg	3.09	Acre Inches		11.04			mg/L			363	0	0	17,009	
08/21/2023	Waste Water: Main Lagoon	0.89	Acre Inches		200.00	17.30	84.40	mg/L		1,135,864	1,892	164	799	11,259	
08/29/2023	Ground Water: Well Avg	3.60	Acre Inches		11.04			mg/L			423	0	0	19,817	
09/08/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			364	0	0	17,064	
09/08/2023	Waste Water: Main Lagoon	0.49	Acre Inches		200.00	17.30	84.40	mg/L		625,364	1,042	90	439	6,199	
10/07/2023	Harvest	24.60	Tons	66.30	1.19	0.26	1.33	%							9,274
	Acre Inches Applied:	**30.87**						**Totals:**		**5,015,671**	**11,518**	**651**	**3,323**	**196,657**	**9,274**
Season Nitrogen Ratio:	1.24							**Lbs Per Acre:**			**245**	**14**	**71**	**4,184**	**197**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 12

Wheat, 69 Acres Planted on 11/15/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
11/14/2022	Ground Water: Well Avg	3.58	Acre Inches		7.96			mg/L			444	0	0	24,864	
11/14/2022	Waste Water: Main Lagoon	3.43	Acre Inches		113.00	24.10	92.40	mg/L		6,426,608	6,049	1,290	4,947	102,784	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			966				
02/01/2023	Surface Water: Kaweah	6.58	Acre Inches		0.00			mg/L			0	0	0	4,108	
05/18/2023	Harvest	16.15	Tons	54.60	0.94	0.23	0.77	%							9,532
	Acre Inches Applied:	**13.59**						**Totals:**		**6,426,608**	**7,460**	**1,290**	**4,947**	**131,756**	**9,532**
Season Nitrogen Ratio:	0.78							**Lbs Per Acre:**			**108**	**19**	**72**	**1,910**	**138**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 12

Corn, 69 Acres Planted on 06/21/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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	3.87	Acre Inches		11.04			mg/L			667	0	0	31,274	
07/06/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			569	0	0	26,668	
07/06/2023	Waste Water: Main Lagoon	1.95	Acre Inches		200.00	17.30	84.40	mg/L		3,653,611	6,087	526	2,569	36,217	
07/14/2023	Ground Water: Well Avg	5.10	Acre Inches		11.04			mg/L			879	0	0	41,214	
07/25/2023	Ground Water: Well Avg	3.75	Acre Inches		11.04			mg/L			647	0	0	30,305	
07/25/2023	Waste Water: Main Lagoon	1.41	Acre Inches		200.00	17.30	84.40	mg/L		2,641,842	4,402	381	1,857	26,188	
08/05/2023	Ground Water: Well Avg	5.09	Acre Inches		11.04			mg/L			878	0	0	41,134	
08/16/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			2,759	0	0	0	
08/16/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			793	0	0	37,174	
08/26/2023	Ground Water: Well Avg	5.12	Acre Inches		11.04			mg/L			883	0	0	41,376	
08/26/2023	Waste Water: Main Lagoon	0.89	Acre Inches		200.00	17.30	84.40	mg/L		1,667,546	2,778	240	1,172	16,530	
09/04/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			707	0	0	33,133	
10/07/2023	Harvest	34.85	Tons	73.10	1.26	0.20	1.25	%							16,301
	Acre Inches Applied:	**39.18**						**Totals:**		**7,962,998**	**22,046**	**1,147**	**5,599**	**361,212**	**16,301**
Season Nitrogen Ratio:	1.35							**Lbs Per Acre:**			**320**	**17**	**81**	**5,235**	**236**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 13

Corn, 90 Acres Planted on 04/22/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			1,260				
04/01/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			870	0	0	40,792	
05/16/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			742	0	0	34,784	
05/16/2023	Waste Water: Main Lagoon	1.45	Acre Inches		200.00	9.38	62.00	mg/L		3,543,636	5,904	277	1,830	30,699	
05/29/2023	Ground Water: Well Avg	5.10	Acre Inches		11.04			mg/L			1,147	0	0	53,758	
06/16/2023	Ground Water: Well Avg	4.75	Acre Inches		11.04			mg/L			1,068	0	0	50,068	
06/24/2023	Ground Water: Well Avg	4.09	Acre Inches		11.04			mg/L			920	0	0	43,112	
06/24/2023	Waste Water: Main Lagoon	0.81	Acre Inches		200.00	9.38	62.00	mg/L		1,979,548	3,298	155	1,022	17,150	
06/30/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			1,034	0	0	48,488	
07/07/2023	Fertilize - UN32	10.00	Gallons		32.00	0.00	0.00	%			2,399	0	0	0	
07/07/2023	Ground Water: Well Avg	3.12	Acre Inches		11.04			mg/L			701	0	0	32,887	
07/18/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			697	0	0	32,676	
07/30/2023	Ground Water: Well Avg	3.27	Acre Inches		11.04			mg/L			735	0	0	34,468	
08/08/2023	Harvest	33.56	Tons	69.50	0.90	0.33	1.27	%							16,618
	Acre Inches Applied:	**37.46**						**Totals:**		**5,523,185**	**20,775**	**432**	**2,852**	**418,882**	**16,618**
Season Nitrogen Ratio:	1.25							**Lbs Per Acre:**			**231**	**5**	**32**	**4,654**	**185**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 14

Corn, 99 Acres Planted on 04/13/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			1,386				
01/05/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			957	0	0	44,872	
03/22/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			816	0	0	38,263	
03/22/2023	Waste Water: Main Lagoon	0.85	Acre Inches		361.00	22.40	186.00	mg/L		2,285,034	6,872	427	3,540	31,026	
05/16/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			1,014	0	0	47,539	
05/16/2023	Waste Water: Main Lagoon	0.81	Acre Inches		200.00	9.38	62.00	mg/L		2,177,503	3,627	170	1,125	18,864	
05/29/2023	Ground Water: Well Avg	4.75	Acre Inches		11.04			mg/L			1,175	0	0	55,075	
06/18/2023	Ground Water: Well Avg	5.12	Acre Inches		11.04			mg/L			1,266	0	0	59,365	
06/18/2023	Waste Water: Main Lagoon	0.89	Acre Inches		200.00	9.38	62.00	mg/L		2,392,565	3,986	187	1,236	20,728	
06/24/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			1,138	0	0	53,336	
07/02/2023	Fertilize - UN32	10.00	Gallons		32.00	0.00	0.00	%			2,639	0	0	0	
07/02/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			1,014	0	0	47,539	
07/10/2023	Ground Water: Well Avg	4.09	Acre Inches		11.04			mg/L			1,012	0	0	47,423	
08/07/2023	Harvest	32.11	Tons	62.40	0.85	0.41	1.46	%							20,344
	Acre Inches Applied:	**36.48**						**Totals:**		**6,855,103**	**26,901**	**784**	**5,900**	**464,029**	**20,344**
Season Nitrogen Ratio: 1.32								**Lbs Per Acre:**			**272**	**8**	**60**	**4,687**	**205**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 17

Wheat, 31 Acres Planted on 11/25/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/01/2022	Surface Water: Kaweah	4.60	Acre Inches		0.00			mg/L			0	0	0	1,290	
12/01/2022	Waste Water: Main Lagoon	1.00	Acre Inches		113.00	24.10	92.40	mg/L		841,783	792	169	648	13,463	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			434				
03/09/2023	Fertilize - Urea	110.00	Pounds		46.00	0.00	0.00	%			1,569	0	0	0	
03/09/2023	Surface Water: Kaweah	4.00	Acre Inches		0.00			mg/L			0	0	0	1,122	
05/20/2023	Harvest	14.56	Tons	57.60	0.97	0.26	0.69	%							3,720
	Acre Inches Applied:	**9.60**						**Totals:**		**841,783**	**2,795**	**169**	**648**	**15,875**	**3,720**
Season Nitrogen Ratio:	0.75							**Lbs Per Acre:**			**90**	**5**	**21**	**512**	**120**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 25

Corn, 77 Acres Planted on 05/01/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			1,078				
05/16/2023	Ground Water: Well Avg	4.30	Acre Inches		11.04			mg/L			827	0	0	38,778	
05/29/2023	Ground Water: Well Avg	5.10	Acre Inches		11.04			mg/L			981	0	0	45,993	
06/11/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			885	0	0	41,484	
06/28/2023	Ground Water: Well Avg	4.75	Acre Inches		11.04			mg/L			914	0	0	42,836	
06/28/2023	Waste Water: Main Lagoon	1.95	Acre Inches		200.00	9.38	62.00	mg/L		4,077,218	6,793	319	2,106	35,321	
07/10/2023	Ground Water: Well Avg	5.12	Acre Inches		11.04			mg/L			985	0	0	46,173	
07/24/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			788	0	0	36,975	
08/02/2023	Ground Water: Well Avg	5.09	Acre Inches		11.04			mg/L			979	0	0	45,903	
08/17/2023	Harvest	32.03	Tons	67.10	0.68	0.27	1.11	%							11,100
	Acre Inches Applied:	**35.01**						**Totals:**		**4,077,218**	**14,230**	**319**	**2,106**	**333,462**	**11,100**
Season Nitrogen Ratio:	1.28							**Lbs Per Acre:**			**185**	**4**	**27**	**4,331**	**144**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 26

Wheat Hay, 78 Acres Planted on 10/26/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
09/26/2022	Ground Water: Well Avg	4.58	Acre Inches		7.96			mg/L			643	0	0	35,959	
09/26/2022	Waste Water: Main Lagoon	1.93	Acre Inches		182.00	16.40	178.00	mg/L		4,087,808	6,197	558	6,061	58,228	
12/07/2022	Ground Water: Well Avg	4.70	Acre Inches		7.96			mg/L			660	0	0	36,901	
12/07/2022	Waste Water: Main Lagoon	1.91	Acre Inches		113.00	24.10	92.40	mg/L		4,045,448	3,808	812	3,114	64,701	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			1,092				
01/12/2023	Ground Water: Well Avg	4.90	Acre Inches		11.04			mg/L			955	0	0	44,763	
05/18/2023	Harvest	8.60	Tons	6.98	1.26	0.26	1.05	%							15,724
	Acre Inches Applied:	**18.02**						**Totals:**		**8,133,256**	**13,354**	**1,370**	**9,175**	**240,551**	**15,724**
Season Nitrogen Ratio:	0.85							**Lbs Per Acre:**			**171**	**18**	**118**	**3,084**	**202**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 26

Corn, 78 Acres Planted on 06/29/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
06/22/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			754	0	0	35,354	
07/19/2023	Ground Water: Well Avg	3.40	Acre Inches		11.04			mg/L			662	0	0	31,060	
08/01/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			643	0	0	30,146	
08/11/2023	Ground Water: Well Avg	3.60	Acre Inches		11.04			mg/L			701	0	0	32,887	
08/11/2023	Waste Water: Main Lagoon	1.95	Acre Inches		200.00	17.30	84.40	mg/L		4,130,169	6,881	595	2,904	40,941	
08/23/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			3,118	0	0	0	
08/23/2023	Ground Water: Well Avg	3.45	Acre Inches		11.04			mg/L			672	0	0	31,517	
09/02/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			623	0	0	29,233	
09/14/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			623	0	0	29,233	
09/28/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			799	0	0	37,455	
10/13/2023	Harvest	24.63	Tons	67.40	1.17	0.20	1.06	%							14,655
	Acre Inches Applied:	**30.07**						**Totals:**		**4,130,169**	**15,478**	**595**	**2,904**	**297,825**	**14,655**
Season Nitrogen Ratio:	1.06							**Lbs Per Acre:**			**198**	**8**	**37**	**3,818**	**188**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 33

Corn, 72 Acres Planted on 05/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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				
05/01/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			696	0	0	32,634	
05/12/2023	Ground Water: Well Avg	3.60	Acre Inches		11.04			mg/L			647	0	0	30,357	
06/10/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			557	0	0	26,141	
06/21/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			557	0	0	26,141	
06/21/2023	Waste Water: Main Lagoon	0.40	Acre Inches		200.00	9.38	62.00	mg/L		782,044	1,303	61	404	6,775	
07/02/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			593	0	0	27,827	
07/12/2023	Ground Water: Well Avg	3.45	Acre Inches		11.04			mg/L			621	0	0	29,092	
07/24/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			575	0	0	26,984	
08/05/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			2,879	0	0	0	
08/05/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			575	0	0	26,984	
08/20/2023	Ground Water: Well Avg	3.12	Acre Inches		11.04			mg/L			561	0	0	26,310	
09/02/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			557	0	0	26,141	
09/12/2023	Harvest	24.10	Tons	69.60	1.24	0.27	0.94	%							13,082
	Acre Inches Applied:	**33.44**						**Totals:**		**782,044**	**11,130**	**61**	**404**	**285,387**	**13,082**
Season Nitrogen Ratio:	0.85							**Lbs Per Acre:**			**155**	**1**	**6**	**3,964**	**182**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 34

Wheat, 49 Acres Planted on 11/23/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
11/29/2022	Ground Water: Well Avg	3.58	Acre Inches		7.96			mg/L			316	0	0	17,657	
11/29/2022	Waste Water: Main Lagoon	2.93	Acre Inches		113.00	24.10	92.40	mg/L		3,898,543	3,670	783	3,001	62,352	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			686				
02/02/2023	Ground Water: Well Avg	4.70	Acre Inches		11.04			mg/L			575	0	0	26,973	
03/09/2023	Fertilize - Urea	110.00	Pounds		46.00	0.00	0.00	%			2,479	0	0	0	
05/20/2023	Harvest	18.21	Tons	61.30	1.14	0.30	1.09	%							7,873
	Acre Inches Applied:	**11.21**						**Totals:**		**3,898,543**	**7,726**	**783**	**3,001**	**106,981**	**7,873**
Season Nitrogen Ratio:	0.98							**Lbs Per Acre:**			**158**	**16**	**61**	**2,183**	**161**

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 34

Corn, 49 Acres Planted on 06/23/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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	4.87	Acre Inches		11.04			mg/L			596	0	0	27,948	
07/06/2023	Fertilize - UN32	21.00	Gallons		32.00	0.00	0.00	%			2,743	0	0	0	
07/06/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			502	0	0	23,529	
07/18/2023	Ground Water: Well Avg	5.10	Acre Inches		11.04			mg/L			624	0	0	29,268	
08/01/2023	Fertilize - UN32	20.00	Gallons		32.00	0.00	0.00	%			2,612	0	0	0	
08/01/2023	Ground Water: Well Avg	4.60	Acre Inches		11.04			mg/L			563	0	0	26,399	
08/12/2023	Ground Water: Well Avg	4.45	Acre Inches		11.04			mg/L			545	0	0	25,538	
08/23/2023	Ground Water: Well Avg	4.20	Acre Inches		11.04			mg/L			514	0	0	24,103	
09/04/2023	Ground Water: Well Avg	4.20	Acre Inches		11.04			mg/L			514	0	0	24,103	
09/15/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			490	0	0	22,956	
09/25/2023	Ground Water: Well Avg	4.30	Acre Inches		11.04			mg/L			526	0	0	24,677	
10/05/2023	Harvest	29.02	Tons	67.10	0.98	0.25	0.85	%							9,132
	Acre Inches Applied:	**39.82**						**Totals:**			**10,229**	**0**	**0**	**228,521**	**9,132**
Season Nitrogen Ratio:	1.12							**Lbs Per Acre:**			**209**	**0**	**0**	**4,664**	**186**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 35

Almonds, 36 Acres Planted on 12/23/2015

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
12/11/2022	Compost Solids: Main	3.00	Tons	29.30	1.62	0.26	0.27	%	108		2,474	400	414	0	
01/01/2023	Atmospheric Deposit	14.00	Pounds		100.00			%			504				
01/13/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			315	0	0	14,757	
02/14/2023	Ground Water: Well Avg	3.50	Acre Inches		11.04			mg/L			315	0	0	14,757	
03/13/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			360	0	0	16,865	
04/16/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			405	0	0	18,973	
05/17/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			405	0	0	18,973	
06/15/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			405	0	0	18,973	
07/13/2023	Ground Water: Well Avg	4.50	Acre Inches		11.04			mg/L			405	0	0	18,973	
08/16/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			360	0	0	16,865	
09/01/2023	Ground Water: Well Avg	4.00	Acre Inches		11.04			mg/L			360	0	0	16,865	
09/26/2023	Harvest	3.60	Tons	6.39	1.88	0.18	1.27	%							4,562
	Acre Inches Applied:	**37.00**						**Totals:**	**108**		**6,305**	**400**	**414**	**156,004**	**4,562**
Season Nitrogen Ratio:	1.38							**Lbs Per Acre:**			**175**	**11**	**12**	**4,333**	**127**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

Field Name: 36

Corn, 51 Acres Planted on 06/01/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			714				
05/04/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			493	0	0	23,116	
06/06/2023	Fertilize - UN32	21.00	Gallons		32.00	0.00	0.00	%			2,855	0	0	0	
06/06/2023	Ground Water: Well Avg	3.10	Acre Inches		11.04			mg/L			395	0	0	18,517	
06/17/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			522	0	0	24,490	
06/17/2023	Waste Water: Main Lagoon	0.40	Acre Inches		200.00	9.38	62.00	mg/L		553,948	923	43	286	4,799	
06/27/2023	Ground Water: Well Avg	3.30	Acre Inches		11.04			mg/L			420	0	0	19,711	
07/04/2023	Ground Water: Well Avg	3.60	Acre Inches		11.04			mg/L			458	0	0	21,503	
07/12/2023	Ground Water: Well Avg	3.45	Acre Inches		11.04			mg/L			440	0	0	20,607	
07/19/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			407	0	0	19,114	
07/27/2023	Fertilize - UN32	15.00	Gallons		32.00	0.00	0.00	%			2,039	0	0	0	
07/27/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			407	0	0	19,114	
08/05/2023	Ground Water: Well Avg	3.00	Acre Inches		11.04			mg/L			382	0	0	17,919	
08/17/2023	Ground Water: Well Avg	3.09	Acre Inches		11.04			mg/L			394	0	0	18,457	
08/29/2023	Ground Water: Well Avg	3.12	Acre Inches		11.04			mg/L			397	0	0	18,636	
09/17/2023	Harvest	28.52	Tons	66.30	1.33	0.26	0.91	%							13,039
	Acre Inches Applied:	**37.43**						**Totals:**		**553,948**	**11,248**	**43**	**286**	**225,982**	**13,039**
Season Nitrogen Ratio:	0.86							**Lbs Per Acre:**			**221**	**1**	**6**	**4,431**	**256**

INNOVATIVE AG SERVICES

DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 36S

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			112				
	Acre Inches Applied:	**0.00**						**Totals:**			**112**				
Season Nitrogen Ratio:								**Lbs Per Acre:**			**14**				

Season Notes: Fallow

DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Field Name: 37

Corn, 69 Acres Planted on 06/28/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data % Moist.	Nitrogen	Phos.	Potass.	Units	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			%			966				
06/05/2023	Ground Water: Well Avg	3.87	Acre Inches		11.04			mg/L			667	0	0	31,274	
07/19/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			707	0	0	33,133	
07/27/2023	Ground Water: Well Avg	4.10	Acre Inches		11.04			mg/L			707	0	0	33,133	
08/04/2023	Ground Water: Well Avg	4.20	Acre Inches		11.04			mg/L			724	0	0	33,941	
08/11/2023	Ground Water: Well Avg	3.20	Acre Inches		11.04			mg/L			551	0	0	25,860	
08/11/2023	Waste Water: Main Lagoon	1.97	Acre Inches		200.00	17.30	84.40	mg/L		3,691,084	6,149	532	2,595	36,589	
08/19/2023	Fertilize - UN32	20.00	Gallons		32.00	0.00	0.00	%			3,678	0	0	0	
08/19/2023	Ground Water: Well Avg	3.12	Acre Inches		11.04			mg/L			538	0	0	25,213	
08/28/2023	Ground Water: Well Avg	3.00	Acre Inches		11.04			mg/L			517	0	0	24,244	
09/07/2023	Ground Water: Well Avg	3.09	Acre Inches		11.04			mg/L			533	0	0	24,971	
10/13/2023	Harvest	23.27	Tons	65.90	1.21	0.27	0.85	%							13,250
	Acre Inches Applied:	**30.65**						**Totals:**		**3,691,084**	**15,736**	**532**	**2,595**	**268,358**	**13,250**
Season Nitrogen Ratio:	1.19							**Lbs Per Acre:**			**228**	**8**	**38**	**3,889**	**192**

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DeGroot Dairy South 2023

Nutrient Applications (Attachment B)

Summary of Nutrient Applications, Removal, and Balance

	Total N (Lbs)	Total P (Lbs)	Total K (Lbs)	Total Salts (Lbs)	Total Manure Applied	
Solid Manure	32,962.20	5,329.59	5,515.18	0.00	1,439.00	tons
Process Wastewater	140,411.77	14,433.27	73,523.48	1,182,117.87	95,604,859.44	gallons
Irrigation Water	135,123.85					
Fertilizer / Total Imports	33,475.52					
Atmospheric Deposition	21,504.00					
Total Nitrogen Applied	**363,477.34**					
Crop Nitrogen Removal	333,891.77					
Nitrogen Balance	**29,585.57**					
Nitrogen Ratio	**1.09**					

- **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.**

DeGroot Dairy South 2023
Nutrient Applications (Attachment B)

FIELD NITROGEN RATIO Calculation:

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

ATMOSHERIC DEPOSITION Applied (lbs) Calculation:

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

HARVEST Nitrogen Extraction (Lbs) Calculation:

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

IRRIGATION Nitrogen and Salts Applied (Lbs) Calculations:

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

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

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

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

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

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

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

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

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

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

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

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

"Lbs Applied per Acre" Calculations:

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

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

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

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

DeGroot Dairy South 2023

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

A. ESTIMATED TOTAL MANURE TRANSFERRED OFFSITE

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

* The Total Manure (tons) should be calculated as the sum of all manure transferred offsite as reported in all the Manure/Process Wastewater Tracking Manifests for the reporting period.
** Total (N, P, K, Salts) (lbs) = Sum of (N, P, K, Salts) for each manure export event based on (Manure(tons) x 2000lb/ton) x ((100-moisture%)/100) x (N, P, K, and Ash) Concentration (%, dry weight) / 100 using the samples closest in date to the export event.

B. ESTIMATED TOTAL PROCESS WASTEWATER TRANSFERRED OFFSITE

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

* The Total Manure (gals) should be calculated as the sum of all manure transferred offsite as reported in all the Manure/Process Wastewater Tracking Manifests for the reporting period.
** Total (Nitrogen, Phosphorus, Potassium, TDS) (lbs) = Sum of (Nitrogen, Phosphorus, Potassium, TDS) for each wastewater export event based on (Process Wastewater(gals) x 8.33lb/gal) x (N03-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.

DeGroot Dairy South 2023

Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
1	x014 x280 x026 x000	74	Process Wastewater
2	x014 x280 x025 x000, x014 x280 x026 x000	75	Manure
3	x014 x280 x026 x000	63	Manure
4	x014 x280 x026 x000	75	Manure
5	x014 x280 x026 x000	71	Manure
6	x014 x280 x026 x000	72	Manure
7	x014 x280 x026 x000	68	Manure
8	x014 x280 x026 x000	71	Manure
9	x014 x110 x052 x000	113	Process Wastewater
10	x014 x110 x032 x000	80	Process Wastewater
11	x014 x110 x032 x000	47	Process Wastewater
12	x014 x110 x032 x000	69	Process Wastewater
13	x014 x110 x032 x000	90	Process Wastewater
14	x014 x110 x032 x000	99	Process Wastewater
17	x014 x110 x037 x000	31	Process Wastewater
25	x014 x110 x026 x000, x014 x110 x034 x000	77	Process Wastewater
26	x014 x110 x023 x000	78	Process Wastewater
33	x014 x110 x023 x000	72	Process Wastewater
34	x014 x110 x023 x000	49	Process Wastewater
35	x014 x290 x003 x000	36	Manure
36	x014 x110 x047 x000, x014 x110 x051 x000	51	Process Wastewater
36S	x014 x110 x048 x000	8	None
37	x014 x110 x047 x000, x014 x110 x051 x000	69	Process Wastewater
		1,538	

Production Area APN(s): x014 x280 x011 x000

DeGroot Dairy South 2023

Lab Results Summary (Attachment E)

Process Wastewater

(mgl/ppm unless noted otherwise)

									General Minerals						
Sample Date:	**TKN**	**TP**	**TK**	**EC (umhos/cm)**	**NH4N**	**NO3N**	**TDS**	**pH (units)**	**CA**	**MG**	**NA**	**HCO3**	**CO3**	**SO4**	**CL**
03/09/2023	361.00	22.40	186.00	2,460	62.90		1,630.00								
06/16/2023	200.00	9.38	62.00	1,570	56.20	0.01	1,040.00	7.17							
07/14/2023	200.00	17.30	84.40	1,790	62.30		1,190.00								
11/09/2023	78.00	4.49	65.20	1,220	20.40		810.00								
Averages:	209.75	13.39	99.40	1,760	50.45	0.01	1,167.50	7.17							

Manure - Compost Solids

(Dry Weight Basis)

Sample Date:	**TN**	**TP**	**TK**	**Moisture**	**Ash**	**CA**	**MG**	**NA**	**S**	**CL**
06/08/2023	1.62	0.26	0.27	29.30						%
Averages:	1.62	0.26	0.27	29.30						

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	**TN**	**TP**	**TK**	**Moisture**	**Ash**	**CA**	**MG**	**NA**	**S**	**CL**
06/08/2023	1.15	0.28	0.16	55.20						%
11/09/2023	1.71	0.54	1.10	37.40						%
Averages:	1.43	0.41	0.63	46.30						

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DeGroot Dairy South 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 (%)
1	1	Corn	08/08/2023	18.72	6.44	28.20	70.50	5.81
2	1	Walnuts	09/12/2023	50.00	4.32	23.00	49.30	5.71
3	1	Walnuts	09/12/2023	52.40	5.46	25.20	45.60	6.96
4	1	Walnuts	09/12/2023	41.60	5.32	38.60	10.00	12.20
5	1	Almonds	09/12/2023	60.80	7.26	47.60	8.83	10.30
6	1	Almonds	09/12/2023	57.60	7.48	66.80	9.38	11.30
7	1	Almonds	09/12/2023	46.60	6.04	62.00	8.89	11.40
8	1	Almonds	09/12/2023	49.40	7.20	51.40	9.19	9.02
9	1	Wheat	05/12/2023	32.40	7.56	36.00	71.20	11.10
9	2	Corn	08/07/2023	16.02	5.62	25.60	72.80	5.38
10	1	Corn	08/07/2023	15.60	6.80	24.00	66.60	5.77
11	1	Wheat	05/12/2023	22.20	7.84	30.80	68.30	10.30
11	2	Corn	10/07/2023	23.80	5.28	26.60	66.30	6.36
12	1	Wheat	05/18/2023	18.84	4.60	15.32	54.60	10.40
12	2	Corn	10/07/2023	25.20	4.06	25.00	73.10	6.71
13	1	Corn	08/08/2023	18.04	6.64	25.40	69.50	5.84
14	1	Corn	08/07/2023	17.02	8.18	29.20	62.40	6.50
17	1	Wheat	05/20/2023	19.44	5.22	13.82	57.60	8.04

DeGroot Dairy South 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 (%)
25	1	Corn	08/17/2023	13.68	5.48	22.20	67.10	5.45
26	1	Wheat Hay	06/20/2023	25.20	5.18	21.00	6.98	8.49
26	2	Corn	10/13/2023	23.40	3.96	21.20	67.40	5.67
33	1	Corn	09/12/2023	24.80	5.48	18.74	69.60	5.69
34	1	Wheat	05/20/2023	22.80	6.04	21.80	61.30	8.80
34	2	Corn	10/16/2023	19.52	5.00	17.04	67.10	5.97
35	1	Almonds	09/26/2023	37.60	3.68	25.40	6.39	8.44
36	1	Corn	10/13/2023	26.60	5.10	18.28	66.30	5.82
36S	1	FALLOW						
37	1	Corn	10/13/2023	24.20	5.38	17.06	65.90	6.01

Well / Irrigation Water
(mgl/ppm unless noted otherwise)

								General Minerals						
	Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	CA	MG	NA	HCO3	CO3	SO4	CL
Dairy														
SD1	08/21/2023	41.30		1,500										
SD2	08/21/2023	26.90		1,430		960.00		97.00	12.00	165.00	430.00	0.00	40.10	108.00

DeGroot Dairy South 2023

Lab Results Summary (Attachment E)

Well / Irrigation Water

(mgl/ppm unless noted otherwise)

							General Minerals						
	Sample Date:	**NO3N**	**TP**	**EC (umhos/cm)**	**NH4N ***	**TDS**	**TN**	**CA**	**MG**	**NA**	**HCO3**	**CO3**	**SO4**	**CL**
Dairy														
SD3							Out of service.							
SD4							Did not run.							
SD5	08/21/2023	0.80		231										
	Averages:	23.00		1,054		960.00	97.00	12.00	165.00	430.00	0.00	40.10	108.00
Domestic														
12SE	06/27/2023	8.00		1,060										
2249	08/21/2023	21.20		1,010										
2575	08/21/2023	27.80		1,090										
2614							Out of service.							
8996	08/21/2023	9.20		887										
	Averages:	16.55		1,012										

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DeGroot Dairy South 2023

Lab Results Summary (Attachment E)

Well / Irrigation Water

(mgl/ppm unless noted otherwise)

							General Minerals						
	Sample Date:	**NO3N**	**TP**	**EC (umhos/cm)**	**NH4N ***	**TDS**	**TN**	**CA**	**MG**	**NA**	**HCO3**	**CO3**	**SO4**	**CL**
Irrigation														
1NE							Did not run.							
2SE	09/12/2023	0.90		322		240.00	0.90							
3NW	08/21/2023	0.50		296		180.00	1.00	4.00	0.00	49.00	40.00	10.00	4.60	41.00
4E							Did not run.							
4S	09/12/2023	5.90		431		280.00	5.90							
5 Middle							Out of service.							
5CTR	08/24/2023	3.10		300		180.00	3.10							
5NE							Did not run.							
9CTR	09/12/2023	27.80		671		930.00	27.80							
9CTRW	10/11/2023	0.00		935		560.00	0.00							
9E	09/12/2023	22.60		1,630		1,260.00	22.60							
9W							Out of service.							
25NE							Out if service.							
33E							Did not run.							
33NE	10/11/2023	1.70		528		310.00	1.70							
35E	09/12/2023	36.90		916		720.00	36.90							
IW36							Did not run.							
ND3N							Out of service.							

DeGroot Dairy South 2023

Lab Results Summary (Attachment E)

Well / Irrigation Water

(mgl/ppm unless noted otherwise)

	Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	General Minerals CA	MG	NA	HCO3	CO3	SO4	CL
Irrigation														
	Averages:	11.04		670		517.78	11.10	4.00	0.00	49.00	40.00	10.00	4.60	41.00
Surface Water														
Kaweah Delta (General)	06/28/2023	0.00		43		40.00	0.00							
	Averages:	0.00		43		40.00	0.00							

* NH4N was non-detectable unless a value is shown

DeGroot Dairy South 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	Corn	74	04/19/2023	08/08/2023	28.8	2373.9	32.1
Field: 2								
	1	Walnuts	75	01/28/2014	09/12/2023	4.6	330.0	4.4
Field: 3								
	1	Walnuts	63	01/28/2014	09/12/2023	4.7	293.0	4.6
Field: 4								
	1	Walnuts	75	12/22/2016	09/12/2023	4.6	322.5	4.3
Field: 5								
	1	Almonds	71	12/08/2016	09/12/2023	3.5	284.0	4.0
Field: 6								
	1	Almonds	72	12/08/2016	09/12/2023	3.0	273.6	3.8
Field: 7								
	1	Almonds	68	12/08/2017	09/12/2023	3.0	197.2	2.9
Field: 8								
	1	Almonds	71	11/07/2019	09/12/2023	3.0	198.8	2.8
Field: 9								
	1	Wheat	113	10/31/2022	05/12/2023	19.9	3472.5	30.7
	2	Corn	113	05/25/2023	08/07/2023	31.9	3374.2	29.9
Field: 10								
	1	Corn	80	04/15/2023	08/07/2023	29.0	2241.6	28.0
Field: 11								
	1	Wheat	47	10/28/2022	05/12/2023	20.1	1137.9	24.2
	2	Corn	47	06/15/2023	10/07/2023	29.0	1156.2	24.6

DeGroot Dairy South 2023

Planting and Harvest Information (Attachment F)

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 12								
	1	Wheat	69	11/15/2022	05/18/2023	20.3	1114.4	16.2
	2	Corn	69	06/21/2023	10/07/2023	30.7	2404.6	34.8
Field: 13								
	1	Corn	90	04/22/2023	08/08/2023	30.6	3020.4	33.6
Field: 14								
	1	Corn	99	04/13/2023	08/07/2023	31.0	3178.9	32.1
Field: 17								
	1	Wheat	31	11/25/2022	05/20/2023	20.5	451.4	14.6
Field: 25								
	1	Corn	77	05/01/2023	08/17/2023	30.0	2466.3	32.0
Field: 26								
	1	Wheat Hay	78	10/26/2022	05/18/2023	8.0	670.8	8.6
	2	Corn	78	06/29/2023	10/13/2023	29.3	1921.1	24.6
Field: 33								
	1	Corn	72	05/31/2023	09/12/2023	30.1	1735.2	24.1
Field: 34								
	1	Wheat	49	11/23/2022	05/20/2023	20.1	892.3	18.2
	2	Corn	49	06/23/2023	10/05/2023	29.1	1422.0	29.0
Field: 35								
	1	Almonds	36	12/23/2015	09/26/2023	3.3	129.6	3.6
Field: 36								
	1	Corn	51	06/01/2023	09/17/2023	27.2	1454.5	28.5
Field: 37								
	1	Corn	69	06/28/2023	10/13/2023	29.1	1605.6	23.3

DeGroot Dairy South 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

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

July 7, 2023

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

Lab No. : **VI 2344326**
Customer No. : **4018573**
Reference : **40717**

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
12SE	06/27/2023	06/27/2023	VI 2344326-001	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: EHB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-07-10

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July 7, 2023

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

Description : 12SE
Project : 0058 DeGroot Dairy South

Lab No. : VI 2344326-001
Customer No. : 4018573
Reference : 40717
Sampled On : June 27, 2023 at 14:00
Sampled By : Henry
Received On : June 27, 2023 at 16:02
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	8.0	0.4	mg/L	10	1		06/28/2023	12:00	lfs	SM 4500-NO3 F	06/28/2023	14:36	lfs
Conductivity	1060	1	umhos/cm	1600[2]	1		07/05/2023	14:10	amm	SM 4500-H+B	07/05/2023	21:27	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.

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July 7, 2023
Innovative Ag Services, LLC

Lab No. : VI 2344326
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2343664-001)	Dup	umhos/cm		0.2%	5	
Nitrate Nitrogen	4500NO3F	06/28/2023:207139LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.2%	80-120	
			MS	mg/L	5.609	96.4%	66-125	
		(CH 2374444-001)	MSD	mg/L	5.609	97.7%	66-125	
			MSRPD	mg/L		1.3%	≤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 analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND : Non-detect - Result was below the DQO listed for the analyte.

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2344326

Laboratory Analysis Work Order

Nº 40717

ID: # 0058

SITE NAME: DeGroot Dairy South

Billing: IAS

ROI 4.8

LABORATORY: FGL

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

(W1) EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr)
W3 NH_4-N (Ammonium)
W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

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_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N*	pH	Temp
1	12SF	Dom	W1	2:00 6/27	Henry	—		
2								
3								
4								
5								
6								
7								
8								

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

All samples are to follow the procedures noted in the Sampling & 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 sampes, please note below.

NOTES: GLS 6/28/23 ODA 1014 2:15

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[signature]	IAS		6/27/23
2nd	AJB	FGL	6/27/23 1545	
3rd	AJB	FGL		6/27/23 1602
4th	SRO	FGL	6/27/23 1602	
	SRO	FGL	6/27/23 1730	
		GLS	6/27/23 1730	

LABORATORY USE ONLY

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

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

September 14, 2023

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

Lab No. : **VI 2345530**
Customer No. : **4018573**
Reference : **41198**

Laboratory Report

Introduction: This report package contains a total of 13 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(7 pages)	: Results for each sample submitted.
Quality Control	(4 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
2249	08/21/2023	08/21/2023	VI 2345530-001	DW
2575	08/21/2023	08/21/2023	VI 2345530-002	DW
8996	08/21/2023	08/21/2023	VI 2345530-003	DW
SD1	08/21/2023	08/21/2023	VI 2345530-004	DW
SD2	08/21/2023	08/21/2023	VI 2345530-005	DW
SD5	08/21/2023	08/21/2023	VI 2345530-006	DW
3NW	08/21/2023	08/21/2023	VI 2345530-007	AGW

Sampling and Receipt Information:

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

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

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

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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: 2023-09-14

Page 2 of 13

September 14, 2023

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

Description : 2249
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-001
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 11:05
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	21.2	0.4	mg/L	10	1		08/22/2023	13:15	lfs	SM 4500-NO3 F	08/22/2023	16:01	lfs
Conductivity	1010	1	umhos/cm	1600[2]	1		09/08/2023	11:31	krh	SM 4500-H+B	09/08/2023	16:02	krh

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 14, 2023

Innovative Ag Services, LLC
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Description : 2575
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-002
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 11:40
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	27.8	0.4	mg/L	10	1		08/22/2023	13:15	lfs	SM 4500-NO3 F	08/22/2023	16:02	lfs
Conductivity	1090	1	umhos/cm	1600[2]	1		09/08/2023	11:31	krh	SM 4500-H+B	09/08/2023	16:05	krh

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 14, 2023

Innovative Ag Services, LLC
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Description : 8996
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-003
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 10:55
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	9.2	0.4	mg/L	10	1		08/22/2023	13:15	lfs	SM 4500-NO3 F	08/22/2023	16:05	lfs
Conductivity	887	1	umhos/cm	1600[2]	1		09/08/2023	11:31	krh	SM 4500-H+B	09/08/2023	15:08	krh

DQF Flags Definition:

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

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September 14, 2023

Innovative Ag Services, LLC
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Description : SD1
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-004
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 12:05
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	41.3	0.4	mg/L	10	1		08/22/2023	13:15	lfs	SM 4500-NO3 F	08/22/2023	16:07	lfs
Conductivity	1500	1	umhos/cm	1600[2]	1		09/08/2023	11:31	krh	SM 4500-H+B	09/08/2023	16:08	krh

DQF Flags Definition:

ND=Non-Detected, RL=Reporting Level , Dil.=Dilution
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 14, 2023

Innovative Ag Services, LLC
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Description : SD2
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-005
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 12:10
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO3)	350	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	19:49	amm
Bicarbonate	430	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	19:49	amm
Carbonate	ND	10	mg/L		1	U	08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	19:49	amm
Hydroxide	ND	10	mg/L		1	U	08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	19:49	amm
Chloride	108	3*	mg/L	500[2]	3		08/22/2023	11:12	ldm	EPA 300.0	08/23/2023	05:50	ldm
Nitrate Nitrogen	26.9	0.3*	mg/L	10	3		08/22/2023	11:12	ldm	EPA 300.0	08/23/2023	05:50	ldm
Conductivity	1430	1	umhos/cm	1600[2]	1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	19:49	amm
Sulfate Sulfur	40.1	0.17	mg/L		1		08/22/2023	11:12	ldm	EPA 300.0	08/22/2023	19:01	ldm
Solids, Total Dissolved (TDS)	960	20	mg/L	1000[2]	1		08/22/2023	15:20	ctl	SM 2540 C	08/23/2023	11:40	ctl
Calcium	97	1	mg/L		1		08/23/2023	20:25	ejc	EPA 200.7	08/24/2023	10:59	ac
Magnesium	12	1	mg/L		1		08/23/2023	20:25	ejc	EPA 200.7	08/24/2023	10:59	ac
Potassium	1	1	mg/L		1	h	08/23/2023	20:25	ejc	EPA 200.7	08/24/2023	10:59	ac
Sodium	165	1	mg/L		1		08/23/2023	20:25	ejc	EPA 200.7	08/24/2023	10:59	ac

DQF Flags Definition:
U Constituent results were non-detect.
h The MS/MSD did not meet QC criteria.

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.

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September 14, 2023

Innovative Ag Services, LLC
1201 Delta View Road
Suite 5
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Description : SD5
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-006
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 12:15
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrate Nitrogen	0.8	0.4	mg/L	10	1		08/22/2023	13:15	lfs	SM 4500-NO3 F	08/22/2023	16:10	lfs
Conductivity	231	1	umhos/cm	1600[2]	1		09/08/2023	11:31	krh	SM 4500-H+B	09/08/2023	16:11	krh

DQF Flags Definition:

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.

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September 14, 2023

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

Description : 3NW
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345530-007
Customer No. : 4018573
Reference : 41198
Sampled On : August 21, 2023 at 10:05
Sampled By : Alex
Received On : August 21, 2023 at 16:11
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Alkalinity (as CaCO3)	60	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	20:13	amm
Bicarbonate	40	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	20:13	amm
Carbonate	10	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	20:13	amm
Hydroxide	10	10	mg/L		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	20:13	amm
Chloride	41	1	mg/L		1		08/22/2023	11:12	ldm	EPA 300.0	08/22/2023	17:59	ldm
Nitrogen, Total Kjeldahl	0.5	0.5	mg/L		1	l	09/03/2023	09:55	sta	EPA 351.2	09/06/2023	18:30	lcr
Nitrate Nitrogen	0.5	0.1	mg/L		1		08/22/2023	11:12	ldm	EPA 300.0	08/22/2023	17:59	ldm
Nitrogen, Total as Nitrogen	1	0.5	mg/L		1	l	09/03/2023	09:55	sta	Calc.	09/06/2023	18:30	lcr
Nitrate + Nitrite as N	0.5	0.1	mg/L		1		08/22/2023	11:12	ldm	EPA 300.0	08/22/2023	17:59	ldm
Kjeldahl Nitrogen	0.5	0.5	mg/L		1	l	09/03/2023	09:55	sta	EPA 351.2	09/06/2023	18:30	lcr
Conductivity	296	1	umhos/cm		1		08/29/2023	10:16	amm	SM 4500-H+B	08/29/2023	20:13	amm
Sulfate Sulfur	4.60	0.17	mg/L		1		08/22/2023	11:12	ldm	EPA 300.0	08/22/2023	17:59	ldm
Solids, Total Dissolved (TDS)	180	20	mg/L		1		08/22/2023	15:20	ctl	SM 2540 C	08/23/2023	11:40	ctl
Calcium	4	1	mg/L		1		08/25/2023	05:55	ejc	EPA 200.7	08/28/2023	18:57	ac
Magnesium	ND	1	mg/L		1	U	08/25/2023	05:55	ejc	EPA 200.7	08/28/2023	18:57	ac
Sodium	49	1	mg/L		1		08/25/2023	05:55	ejc	EPA 200.7	08/28/2023	18:57	ac

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

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

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345530
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	08/23/2023:209450EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.9%	85-115	
			MS	mg/L	12.00	-20%	<¼	406
		(SP 2314422-001)	MSD	mg/L	12.00	325%	<1/4	
			MSRPD	mg/L		5.9%	≤20.0	
			MS	mg/L	12.00	165%	<¼	406
		(SP 2314413-001)	MSD	mg/L	12.00	136%	<1/4	
			MSRPD	mg/L		2.0%	≤20.0	
	200.7	08/25/2023:209543EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	95.4%	85-115	
			MS	mg/L	12.00	104%	75-125	
		(STK2351501-006)	MSD	mg/L	12.00	90.9%	75-125	
			MSRPD	mg/L		6.4%	≤20.0	
			MS	mg/L	12.00	129%	<¼	406
		(CC 2382824-001)	MSD	mg/L	12.00	110%	75-125	
			MSRPD	mg/L		2.6%	≤20.0	
Magnesium	200.7	08/23/2023:209450EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	101%	85-115	
			MS	mg/L	12.00	166%	<¼	406
		(SP 2314422-001)	MSD	mg/L	12.00	175%	<1/4	
			MSRPD	mg/L		0.6%	≤20	
			MS	mg/L	12.00	116%	75-125	
		(SP 2314413-001)	MSD	mg/L	12.00	108%	75-125	
			MSRPD	mg/L		1.5%	≤20	
	200.7	08/25/2023:209543EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	98.2%	85-115	
			MS	mg/L	12.00	108%	75-125	
		(STK2351501-006)	MSD	mg/L	12.00	101%	75-125	
			MSRPD	mg/L		4.8%	≤20	
			MS	mg/L	12.00	116%	75-125	
		(CC 2382824-001)	MSD	mg/L	12.00	-192%	<1/4	
			MSRPD	mg/L		66.0%	≤20	435
Potassium	200.7	08/23/2023:209450EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.6%	85-115	
			MS	mg/L	12.00	126%	75-125	435
		(SP 2314422-001)	MSD	mg/L	12.00	125%	75-125	
			MSRPD	mg/L		0.3%	≤20.0	
			MS	mg/L	12.00	128%	<¼	406
		(SP 2314413-001)	MSD	mg/L	12.00	117%	75-125	
			MSRPD	mg/L		1.9%	≤20.0	
Sodium	200.7	08/23/2023:209450EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	94.3%	85-115	
			MS	mg/L	12.00	-312%	<¼	406
		(SP 2314422-001)	MSD	mg/L	12.00	245%	<1/4	
			MSRPD	mg/L		3.7%	≤20.0	
			MS	mg/L	12.00	132%	<¼	406

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345530
Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
		(SP 2314413-001)	MSD	mg/L	12.00	133%	<1/4	
			MSRPD	mg/L		0.1%	≤20.0	
	200.7	08/25/2023:209543EJC	Blank	mg/L		ND	<1	
			LCS	mg/L	12.00	93.0%	85-115	
			MS	mg/L	12.00	107%	75-125	
		(STK2351501-006)	MSD	mg/L	12.00	96.6%	75-125	
			MSRPD	mg/L		6.1%	≤20.0	
			MS	mg/L	12.00	149%	<¼	406
		(CC 2382824-001)	MSD	mg/L	12.00	-339%	<1/4	
			MSRPD	mg/L		47.6%	≤20.0	435

Definition

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

Explanation

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.

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345530
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	08/29/2023:209673AMM	ND	mg/L		0.7%	10	435
Bicarbonate	2320B	(VI 2345530-005)	Dup	mg/L		0.7%	10	
E. C.	2320B	(VI 2345530-005)	Dup	umhos/cm		0.07%	5	
	2320B	(CC 2383009-001)	Dup	umhos/cm		0.3%	5	
		(VI 2345799-001)	Dup	umhos/cm		0.3%	5	
Solids, Total Dissolved	2540CE	08/22/2023:209429CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	98.0%	90-110	
		(SP 2314248-001)	Dup	mg/L		2.14%	5	
		(SP 2314248-001)	Dup	mg/L		0.2%	5	
Chloride	300.0	08/22/2023:209462LDM	Blank	mg/L		ND	<1	
			LCS	mg/L	25.00	99.1 %	90-110	
			MS	mg/L	50.00	99.4 %	67-117	
		(CH 2376595-006)	MSD	mg/L	50.00	99.4 %	67-117	
			MSRPD	mg/L	10.00	0.002%	≤7	
			MS	mg/L	50.00	96.3 %	67-117	
		(CH 2376595-016)	MSD	mg/L	50.00	96.4 %	67-117	
			MSRPD	mg/L	10.00	0.05%	≤7	
Nitrate + Nitrite as N	300.0	08/22/2023:209462LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	99.1 %	90-110	
			MS	mg/L	40.00	101 %	86-112	
		(CH 2376595-006)	MSD	mg/L	40.00	101 %	86-112	
			MSRPD	mg/L	10.00	0.05%	≤7	
			MS	mg/L	40.00	100 %	86-112	
		(CH 2376595-016)	MSD	mg/L	40.00	100 %	86-112	
			MSRPD	mg/L	10.00	0.1%	≤7	
Nitrate Nitrogen	300.0	08/22/2023:209462LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	99.1 %	90-110	
			MS	mg/L	40.00	101 %	86-112	
		(CH 2376595-006)	MSD	mg/L	40.00	101 %	86-112	
			MSRPD	mg/L	10.00	0.05%	≤7	
			MS	mg/L	40.00	100 %	86-112	
		(CH 2376595-016)	MSD	mg/L	40.00	100 %	86-112	
			MSRPD	mg/L	10.00	0.1%	≤7	
Sulfate Sulfur	300.0	08/22/2023:209462LDM	Blank	mg/L		ND	<0.5	
			LCS	mg/L	50.00	100 %	90-110	
			MS	mg/L	100.0	102 %	18-165	
		(CH 2376595-006)	MSD	mg/L	100.0	102 %	18-165	
			MSRPD	mg/L	10.00	0.05%	≤7	
			MS	mg/L	100.0	100 %	18-165	
		(CH 2376595-016)	MSD	mg/L	100.0	100 %	18-165	
			MSRPD	mg/L	10.00	0.08%	≤7	
Nitrogen, Total Kjeldahl	351.2	09/03/2023:209872STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	94.4%	73-124	
			MS	mg/L	12.00	90.6%	90-110	
		(STK2351501-006)	MSD	mg/L	12.00	86.4%	90-110	435
			MSRPD	mg/L		4.4%	≤20	
			MS	mg/L	12.00	77.7%	90-110	435
		(VI 2345562-001)	MSD	mg/L	12.00	87.7%	90-110	435
			MSRPD	mg/L		12.0%	≤20	
Nitrate Nitrogen	4500NO3F	08/22/2023:209438LFS	Blank	mg/L		ND	<0.4	

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345530
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
			LCS	mg/L	11.22	96.8%	80-120	
			MS	mg/L	5.609	96.2%	66-125	
		(STK2351328-001)	MSD	mg/L	5.609	97.8%	66-125	
			MSRPD	mg/L		1.0%	≤30.4	

Definition

Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.

Dup : Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.

LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.

MS : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.

MSD : Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.

MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.

ND : Non-detect - Result was below the DQO listed for the analyte.

Explanation

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

Page 13 of 13

Laboratory Analysis Work Order

Nº 41198

ID: # DDSB 2345530

LABORATORY: FGL

SITE NAME: DeGroot Dairy South

Authorized Copy Release to:

Billing: IAS

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

(W1) EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr)
W3 NH_4-N (Ammonium)
(W4) EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
(W5) EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Manure

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

Plant Tissue

P1 TN, NO_3N, PO_4P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	2249	Dom	W1	8/21 11:05	Alex	—		
2	2575	"	W1	8/21 11:40	"	—		
3	8996	"	W1	8/21 10:55	"	—		
4	SD1	"	W1	8/21 12:05	"	—		
5	~~SD~~ SD2	"	W4	8/21 12:10	"	—		
6	SD5	"	W1	8/21 12:15	"	—		
7	3NW	Irr	W5	8/21 10:05	"	—		
8								

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

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

NOTES:
~~5.5C~~ TH 407

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		8/21/23 3:1
2nd		FGL	8-21-23 16:08	
3rd		FGL		8-21-23 16:11
4th		FGL	8/21/23 1611	

LABORATORY USE ONLY

Logged In By: GLS 8/21/23 1730 Total Samples: 11 8/22/23 12:00 Laboratory #: _____

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

September 14, 2023

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

Lab No. : **VI 2345648**
Customer No. : **4018573**
Reference : **41251**

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
5CTR	08/24/2023	08/24/2023	VI 2345648-001	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: 2023-09-15

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September 14, 2023

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

Description : 5CTR
Project : 0058 DeGroot Dairy South

Lab No. : VI 2345648-001
Customer No. : 4018573
Reference : 41251
Sampled On : August 24, 2023 at 11:15
Sampled By : Alex
Received On : August 24, 2023 at 16:04
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	09/08/2023	09:16	sta	EPA 351.2	09/11/2023	21:25	lcr
Nitrate Nitrogen	3.1	0.4	mg/L		1		08/25/2023	12:15	lfs	SM 4500-NO3 F	08/25/2023	13:57	lfs
Nitrogen, Total as Nitrogen	3.1	0.5	mg/L		1	l	09/08/2023	09:16	sta	Calc.	09/11/2023	21:25	lcr
Nitrate + Nitrite as N	3.1	0.4	mg/L		1		08/25/2023	12:15	lfs	SM 4500-NO3 F	08/25/2023	13:57	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	09/08/2023	09:16	sta	EPA 351.2	09/11/2023	21:25	lcr
Conductivity	300	1	umhos/cm		1		09/05/2023	09:15	krh	SM 4500-H+B	09/05/2023	10:41	amm
Solids, Total Dissolved (TDS)	180	20	mg/L		1		08/28/2023	16:10	ctl	SM 2540 C	08/29/2023	12:00	ctl

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

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

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September 14, 2023
Innovative Ag Services, LLC

Lab No. : VI 2345648
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2345518-018)	Dup	umhos/cm		0.5%	5	
Solids, Total Dissolved	2540CE	08/28/2023:209655CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	103%	90-110	
		(VI 2345653-001)	Dup	mg/L		1.32%	5	
		(VI 2345653-001)	Dup	mg/L		2.13%	5	
Nitrogen, Total Kjeldahl	351.2	09/08/2023:210053STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	93.0%	73-124	
			MS	mg/L	12.00	97.5%	90-110	
		(STK2351641-005)	MSD	mg/L	12.00	82.0%	90-110	435
			MSRPD	mg/L		7.7%	≤20	
			MS	mg/L	12.00	91.6%	90-110	
		(STK2351641-008)	MSD	mg/L	12.00	90.9%	90-110	
			MSRPD	mg/L		0.7%	≤20	
Nitrate + Nitrite as N	4500NO3F	08/25/2023:209573LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	93.9%	80-120	
			MS	mg/L	5.609	85.7%	66-125	
		(SP 2314578-001)	MSD	mg/L	5.609	87.4%	66-125	
			MSRPD	mg/L		0.6%	≤30.4	
Nitrate Nitrogen	4500NO3F	08/25/2023:209573LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	93.9%	80-120	
			MS	mg/L	5.609	85.7%	66-125	
		(SP 2314578-001)	MSD	mg/L	5.609	87.4%	66-125	
			MSRPD	mg/L		0.6%	≤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 analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND : Non-detect - Result was below the DQO listed for the analyte.

Explanation

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

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Laboratory Analysis Work Order

Nº 41251

2345648

ID: # D058

SITE NAME: DeGroot Dairy South

Billing: IAS

LABORATORY: FGL

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)

(W2) EC, NO_3N, TDS, TN (Irr)

W3 NH_4-N (Ammonium)

W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)

W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)

W6 NO_3N, NO_2 (Dom ILRP, Annually)

W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)

W8 Other: _____

20' 19.1 C TH407

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)

L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)

L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)

L4 Other: _____

Manure

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

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

M3 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, K (Mid Season - Wheat)

P2 TN, P, K (Mid-season - Corn)

P3 TN, TP, TK, Ash, %M (At Harvest)

P4 TN, %M

P5 % Moisture

P6 NIR

P7 Other: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S

S2 S1 + CEC, CaCO3, OM, C:N, TN

S3 NO_3N, NH_4N

S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	SCTR	Irr	W2	8/24 11:15	Alex	—		
2								
3								
4								
5								
6								
7								
8								

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

All samples are to follow the procedures noted in the Sampling & 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 sampes, please note below.

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st	[signature]	IAS		8/24/23 3:15
2nd	[signature]	FGL	8/24/23 15:52	
3rd	[signature]	FGL		8/24/23 16:04
4th	[signature]		8/24/23 1604	

LABORATORY USE ONLY

Logged In By: [signature] 8/24/23

Total Samples: 1

Laboratory #: 1149

ENVIRONMENTAL AGRICULTURAL
Analytical Chemists

October 3, 2023

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

Lab No. : **VI 2346187**
Customer No. : **4018573**
Reference : **41333**

Laboratory Report

Introduction: This report package contains a total of 7 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(5 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
4S	09/12/2023	09/12/2023	VI 2346187-001	AGW
2SE	09/12/2023	09/12/2023	VI 2346187-002	AGW
35E	09/12/2023	09/12/2023	VI 2346187-003	AGW
9CTR	09/12/2023	09/12/2023	VI 2346187-004	AGW
9E	09/12/2023	09/12/2023	VI 2346187-005	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: 2023-10-03

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October 3, 2023

Innovative Ag Services, LLC
1201 Delta View Road
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Description : 4S
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346187-001
Customer No. : 4018573
Reference : 41333
Sampled On : September 12, 2023 at 09:55
Sampled By : Zeke
Received On : September 12, 2023 at 16:19
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:40	lcr
Nitrate Nitrogen	5.9	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:35	lfs
Nitrogen, Total as Nitrogen	5.9	0.5	mg/L		1	l	09/26/2023	09:55	sta	Calc.	09/29/2023	16:40	lcr
Nitrate + Nitrite as N	5.9	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:35	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:40	lcr
Conductivity	431	1	umhos/cm		1	I	09/21/2023	11:31	krh	SM 4500-H+B	09/21/2023	16:10	krh
Solids, Total Dissolved (TDS)	280	20	mg/L		1		09/15/2023	10:00	ctl	SM 2540 C	09/18/2023	11:20	ctl

DQF Flags Definition:
U Constituent results were non-detect.
l The MS/MSD did not meet QC criteria.
I The RPD for the laboratory duplicate exceeded laboratory criteria.

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

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October 3, 2023

Innovative Ag Services, LLC
1201 Delta View Road
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Description : 2SE
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346187-002
Customer No. : 4018573
Reference : 41333
Sampled On : September 12, 2023 at 09:40
Sampled By : Zeke
Received On : September 12, 2023 at 16:19
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:42	lcr
Nitrate Nitrogen	0.9	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:36	lfs
Nitrogen, Total as Nitrogen	0.9	0.5	mg/L		1	I	09/26/2023	09:55	sta	Calc.	09/29/2023	16:42	lcr
Nitrate + Nitrite as N	0.9	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:36	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:42	lcr
Conductivity	322	1	umhos/cm		1	I	09/21/2023	11:31	krh	SM 4500-H+B	09/21/2023	16:47	krh
Solids, Total Dissolved (TDS)	240	20	mg/L		1		09/15/2023	10:00	ctl	SM 2540 C	09/18/2023	11:20	ctl

DQF Flags Definition:
U Constituent results were non-detect.
I The MS/MSD did not meet QC criteria.
I The RPD for the laboratory duplicate exceeded laboratory criteria.

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

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October 3, 2023

Innovative Ag Services, LLC
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Description : 35E
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346187-003
Customer No. : 4018573
Reference : 41333
Sampled On : September 12, 2023 at 10:00
Sampled By : Zeke
Received On : September 12, 2023 at 16:19
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:44	lcr
Nitrate Nitrogen	36.9	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:39	lfs
Nitrogen, Total as Nitrogen	36.9	0.5	mg/L		1	I	09/26/2023	09:55	sta	Calc.	09/29/2023	16:44	lcr
Nitrate + Nitrite as N	36.9	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:39	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:44	lcr
Conductivity	916	1	umhos/cm		1	I	09/21/2023	11:31	krh	SM 4500-H+B	09/21/2023	14:13	krh
Solids, Total Dissolved (TDS)	720	20	mg/L		1		09/15/2023	10:00	ctl	SM 2540 C	09/18/2023	11:20	ctl

DQF Flags Definition:
U Constituent results were non-detect.
I The MS/MSD did not meet QC criteria.
I The RPD for the laboratory duplicate exceeded laboratory criteria.

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

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October 3, 2023

Innovative Ag Services, LLC
1201 Delta View Road
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Description : 9CTR
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346187-004
Customer No. : 4018573
Reference : 41333
Sampled On : September 12, 2023 at 09:10
Sampled By : Zeke
Received On : September 12, 2023 at 16:19
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:47	lcr
Nitrate Nitrogen	27.8	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:41	lfs
Nitrogen, Total as Nitrogen	27.8	0.5	mg/L		1	l	09/26/2023	09:55	sta	Calc.	09/29/2023	16:47	lcr
Nitrate + Nitrite as N	27.8	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:41	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:47	lcr
Conductivity	671	1	umhos/cm		1	I	09/21/2023	11:31	krh	SM 4500-H+B	09/21/2023	14:04	krh
Solids, Total Dissolved (TDS)	930	20	mg/L		1		09/15/2023	10:00	ctl	SM 2540 C	09/18/2023	11:20	ctl

DQF Flags Definition:
U Constituent results were non-detect.
l The MS/MSD did not meet QC criteria.
I The RPD for the laboratory duplicate exceeded laboratory criteria.

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

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October 3, 2023

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

Description : 9E
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346187-005
Customer No. : 4018573
Reference : 41333
Sampled On : September 12, 2023 at 08:45
Sampled By : Zeke
Received On : September 12, 2023 at 16:19
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:49	lcr
Nitrate Nitrogen	22.6	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:44	lfs
Nitrogen, Total as Nitrogen	22.6	0.5	mg/L		1	I	09/26/2023	09:55	sta	Calc.	09/29/2023	16:49	lcr
Nitrate + Nitrite as N	22.6	0.4	mg/L		1		09/13/2023	12:15	lfs	SM 4500-NO3 F	09/13/2023	14:44	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	UI	09/26/2023	09:55	sta	EPA 351.2	09/29/2023	16:49	lcr
Conductivity	1630	1	umhos/cm		1	I	09/21/2023	11:31	krh	SM 4500-H+B	09/21/2023	15:46	krh
Solids, Total Dissolved (TDS)	1260	20	mg/L		1		09/15/2023	10:00	ctl	SM 2540 C	09/18/2023	11:20	ctl

DQF Flags Definition:
U Constituent results were non-detect.
I The MS/MSD did not meet QC criteria.
I The RPD for the laboratory duplicate exceeded laboratory criteria.

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

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October 3, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346187
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2346187-004)	Dup	umhos/cm		66.0%	5	440
		(VI 2346257-001)	Dup	umhos/cm		110%	5	440
		(VI 2346315-001)	Dup	umhos/cm		10.0%	5	440
Solids, Total Dissolved	2540CE	09/15/2023:210364CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	102%	90-110	
		(SP 2315435-001)	Dup	mg/L		2.16%	5	
		(SP 2315435-001)	Dup	mg/L		3.68%	5	
Nitrogen, Total Kjeldahl	351.2	09/26/2023:210792STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	91.0%	73-124	
			MS	mg/L	12.00	85.6%	90-110	435
		(VI 2346184-005)	MSD	mg/L	12.00	87.1%	90-110	435
			MSRPD	mg/L		1.7%	≤20	
			MS	mg/L	12.00	86.3%	90-110	435
		(VI 2346184-006)	MSD	mg/L	12.00	89.3%	90-110	435
			MSRPD	mg/L		3.3%	≤20	
Nitrate + Nitrite as N	4500NO3F	09/13/2023:210275LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	96.7%	80-120	
			MS	mg/L	5.609	81.6%	66-125	
		(CC 2383084-001)	MSD	mg/L	5.609	81.5%	66-125	
			MSRPD	mg/L		0.0%	≤30.4	
Nitrate Nitrogen	4500NO3F	09/13/2023:210275LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	96.7%	80-120	
			MS	mg/L	5.609	81.6%	66-125	
		(CC 2383084-001)	MSD	mg/L	5.609	81.5%	66-125	
			MSRPD	mg/L		0.0%	≤30.4	

Definition

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

Explanation

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

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Laboratory Analysis Work Order

Nº 41333

ID: # 0058 2346187 LABORATORY: FGL

SITE NAME: DEGROOT DAIRY SOUTH

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr) Rcl 3.4 u
W3 NH_4-N (Ammonium)
W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Plant Tissue

P1 TN, NO_3N, PO_4P, 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: _____

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_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time		Sampled by	IAS USE ONLY: FIELD TESTS NH_3N *	pH	Temp
1	4S	IRR	W2	9-12	9:55	Zeke			
2	2SE	"	"	"	9:40	"			
3	3SE	"	"	"	10:00	"			
4	9CTR	"	"	"	9:10	"			
5	9E	"	"	"	8:45	"			
6									
7									
8									

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

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

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		9-12-23 / 3:00
2nd	ASB	FGL	9/12/23 1600	
3rd	ASB	FGL		9/12/23 1619
4th			9/12/23 1619	

LABORATORY USE ONLY

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

ENVIRONMENTAL FGL AGRICULTURAL
Analytical Chemists

November 2, 2023

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

Lab No. : **VI 2346887**
Customer No. : **4018573**
Reference : **41491**

Laboratory Report

Introduction: This report package contains a total of 5 pages divided into 3 sections:

Case Narrative	(1 page)	: An overview of the work performed at FGL.
Sample Results	(2 pages)	: 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
33NE	10/11/2023	10/11/2023	VI 2346887-001	AGW
9CTRW	10/11/2023	10/11/2023	VI 2346887-002	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 300.0	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
EPA 351.2	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 2540 C	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)
SM 4500-H+B	Preparation and analysis performed by FGL-Santa Paula (FGL-SP ELAP# 1573)

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

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2023-11-03

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November 2, 2023

Innovative Ag Services, LLC
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Suite 5
Hanford, CA 93230

Description : 33NE
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346887-001
Customer No. : 4018573
Reference : 41491
Sampled On : October 11, 2023 at 14:20
Sampled By : Zeke
Received On : October 11, 2023 at 16:14
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	17:34	lcr
Nitrate Nitrogen	1.7	0.1	mg/L		1		10/12/2023	16:14	ldm	EPA 300.0	10/13/2023	09:13	ldm
Nitrogen, Total as Nitrogen	1.7	0.5	mg/L		1	l	10/25/2023	12:24	sta	Calc.	10/29/2023	17:34	lcr
Nitrate + Nitrite as N	1.7	0.1	mg/L		1		10/12/2023	16:14	ldm	EPA 300.0	10/13/2023	09:13	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	17:34	lcr
Conductivity	528	1	umhos/cm		1		11/02/2023	09:02	krh	SM 4500-H+B	11/02/2023	13:56	krh
Solids, Total Dissolved (TDS)	310	20	mg/L		1		10/13/2023	13:30	ctl	SM 2540 C	10/16/2023	11:00	ctl

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

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

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November 2, 2023

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

Description : 9CTRW
Project : 0058 DeGroot Dairy South

Lab No. : VI 2346887-002
Customer No. : 4018573
Reference : 41491
Sampled On : October 11, 2023 at 14:55
Sampled By : Zeke
Received On : October 11, 2023 at 16:14
Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
Dairy Analysis							Date	Time	Who	Method	Date	Time	Who
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	17:36	lcr
Nitrate Nitrogen	ND	0.1	mg/L		1	U	10/12/2023	16:14	ldm	EPA 300.0	10/13/2023	09:53	ldm
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	UlJ	10/25/2023	12:24	sta	Calc.	10/29/2023	17:36	lcr
Nitrate + Nitrite as N	ND	0.1	mg/L		1	J	10/12/2023	16:14	ldm	EPA 300.0	10/13/2023	09:53	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	Ul	10/25/2023	12:24	sta	EPA 351.2	10/29/2023	17:36	lcr
Conductivity	935	1	umhos/cm		1		11/02/2023	09:02	krh	SM 4500-H+B	11/02/2023	14:48	krh
Solids, Total Dissolved (TDS)	560	20	mg/L		1		10/16/2023	10:40	ctl	SM 2540 C	10/17/2023	11:00	ctl

DQF Flags Definition:
U Constituent results were non-detect.
l 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

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November 2, 2023
Innovative Ag Services, LLC

Lab No. : VI 2346887
Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(CH 2378562-001)	Dup	umhos/cm		0.3%	5	
		(CC 2383609-002)	Dup	umhos/cm		0.1%	5	
Solids, Total Dissolved	2540CE	10/13/2023:211549CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	101%	90-110	
		(SP 2317317-001)	Dup	mg/L		0.8%	5	
		(SP 2317317-001)	Dup	mg/L		0.7%	5	
	2540CE	10/16/2023:211599CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	102%	90-110	
		(CC 2383616-003)	Dup	mg/L		2.89%	5	
		(CC 2383616-003)	Dup	mg/L		1.60%	5	
Nitrate + Nitrite as N	300.0	10/12/2023:211643LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	99.9%	90-110	
			MS	mg/L	40.00	101%	86-112	
		(VI 2346884-002)	MSD	mg/L	40.00	100%	86-112	
			MSRPD	mg/L		1.0%	≤7	
			MS	mg/L	40.00	102%	86-112	
		(STK2354238-001)	MSD	mg/L	40.00	103%	86-112	
			MSRPD	mg/L		1.0%	≤7	
Nitrate Nitrogen	300.0	10/12/2023:211643LDM	Blank	mg/L		ND	<0.4	
			LCS	mg/L	20.00	99.9%	90-110	
			MS	mg/L	40.00	101%	86-112	
		(VI 2346884-002)	MSD	mg/L	40.00	100%	86-112	
			MSRPD	mg/L		1.0%	≤7	
			MS	mg/L	40.00	102%	86-112	
		(STK2354238-001)	MSD	mg/L	40.00	103%	86-112	
			MSRPD	mg/L		1.0%	≤7	
Nitrogen, Total Kjeldahl	351.2	10/25/2023:212045STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	90.0%	73-124	
			MS	mg/L	12.00	86.6%	90-110	435
		(STK2354201-003)	MSD	mg/L	12.00	84.0%	90-110	435
			MSRPD	mg/L		2.8%	≤20	
			MS	mg/L	12.00	83.1%	90-110	435
		(VI 2346889-001)	MSD	mg/L	12.00	81.7%	90-110	435
			MSRPD	mg/L		1.8%	≤20	

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 analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
ND : Non-detect - Result was below the DQO listed for the analyte.

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Explanation

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

Page 5 of 5

Laboratory Analysis Work Order

Nº 41491

2346887

ID: # 0058

LABORATORY: FGL

SITE NAME: DEGROOT DAIRY SOUTH

Billing: IAS

Authorized Copy Release to:

Innnovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

W1 EC, NO_3N (Dom)
W2 EC, NO_3N, TDS, TN (Irr) POL 10.12.23 1407
W3 NH_4-N (Ammonium)
W4 EC, NO_3N, Ca, Mg, Na, K, HCO_3, CO_3, SO_4S, Cl, TDS (Dom, GM)
W5 EC, NO_3N, TDS, TN, Ca, Mg, Na, HCO_3, CO_3, SO_4S, Cl (Irr, GM)
W6 NO_3N, NO_2 (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO_3, CO_3, SO_4, Cl + Lab Filtering (GWM)
W8 Other: _____

Process Waste Water (lagoon)

L1 EC, NH_4N, TKN, TP, TK, TDS (Quarterly)
L2 EC, NO_3N, NH_4N, TKN, TP, TK, TDS, pH (Annually)
L3 L1 + Ca, Mg, Na, HCO_3,CO_3, SO_4S, Cl (Biennially)
L4 Other: _____

Manure

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

Plant Tissue

P1 TN, NO_3N, PO_4P, K (Mid Season - Wheat)
P2 TN, P, K (Mid-season - Corn)
P3 TN, TP, TK, Ash, %M (At Harvest)
P4 TN, %M
P5 % Moisture
P6 NIR
P7 Other: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO_3N, PO_4P, K-AA, Zn, Mn, Fe, Cu, SO_4S
S2 S1 + CEC, CaCO3, OM, C:N, TN
S3 NO_3N, NH_4N
S4 Other: _____

	Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS NH_3N*	pH	Temp
1	33NE	IRR	W2	10-11 / 2:20	Zeke			
2	9CTRW	IRR	W2	10-11 / 2:55	Zeke			
3								
4								
5								
6								
7								
8								

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

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

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1st		IAS		10-11-23 / 3:00
2nd	ADB	FGL	10/11/23 1557	
3rd	ADB	FGL		10/11/23
4th			10/12/23	10/13/23 1145

LABORATORY USE ONLY

Logged In By: _____

Total Samples: _____

Laboratory #: _____

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