



Open Sky Ranch Dairy

2023 Annual Report

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

Open Sky Ranch Dairy 2023

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Facility Information:

Name of Dairy	Open Sky Ranch Dairy
Facility Address	12103 Elkhorn Avenue, Riverdale CA 93656

Owner/Operator as of 12/31/2023

Operator Name	Eric teVelde
Operator Phone	(559) 707-1665
Owner Name	Eric teVelde
Owner Phone	(559) 707-1665

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

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
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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:

- No discharges occurred during the reporting period.
 Yes. ____ Number of discharges occurred (see Attachment I).

11. Summary of discharges from the land application area

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

- No discharges occurred during the reporting period.
 Yes. ____ Number of discharges occurred (see Attachment J).

12. Nutrient Management Plan update

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

- No.
 Yes, the new NMP was developed and approved by a Certified Nutrient Management Specialist.

13. Manure/Process Wastewater Tracking Manifests

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

- No.
 Yes, see attached manifests.

14. Written Agreements

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

- Not applicable; no written agreements.
 No changes in agreement(s).
 Yes, a new or revised agreement is attached.

15. Laboratory Analyses for Discharges

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

- Not Applicable.
 Yes, provided with Attachment H, I, or J for #9, 10 and 11, respectively.

16. Tabulated Nutrient Analytical Data

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

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17. Record-Keeping Results

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

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

18. Groundwater Monitoring Section

Groundwater monitoring results are attached.

Monitoring Well results are attached, if applicable.

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

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

19. Storm Water Reporting Section

No significant discharges of storm water occurred from the land application areas.

Yes, significant discharge(s) of storm water occurred from land application areas. The following information shall be submitted for those discharges.

It was not possible to collect any of the required samples or perform visual observations due to adverse climatic conditions.

20. Mortality Management Practices

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

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

DocuSigned by:



CF8088E7F044422
Signature of Operator of Facility

DocuSigned by:



CF8088E7F044422
Signature of Owner of Facility

Eric teVelde

Print Name

6/25/2024

Title and Date

Eric teVelde

Print Name

6/25/2024

Title and Date

Open Sky Ranch Dairy 2023

Estimated Manure and Nutrients Generated (Attachment A)

Animal Type	Maximum No. of Head	Average No. of Head*	Housing Type	Weight	Total Manure Produced (tons/year)	NITROGEN	PHOSPHORUS	POTASSIUM	SALTS
						Net (LB) Available for Land Application			
Hol Milk Cows	4,525	4,411	Milk Freestall -	1,400	111,946.27	1,593,914.85	273,702.55	370,303.45	2,907,687.09
Hol Dry Cows	780	760	Flushed	1,450	11,090.01	138,700.00	19,418.00	91,542.00	195,733.44
Hol Heifers(15-24)	1,560	1,521	Flushed	1,000	15,877.00	210,962.70	33,309.90	99,929.70	391,724.42
Hol Heifers (7-14)	1,830	1,784	Flushed	750	17,157.22	169,301.60	28,651.04	97,674.00	215,371.17
Hol Calves (4-6)	720	702	Flushed	300	2,434.18	35,872.20	10,249.20	20,498.40	16,808.69
	9,415	9,178			158,504.68	2,148,751.35	365,330.69	679,947.55	3,727,324.81

* 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)**
162,760,430	360.00	72.75	533.00	4,222.50	488,085.98	98,634.04	722,638.41	5,724,841.7

* 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).



Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 1

Sorghum, 65 Acres Planted on 06/16/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00		%			910						
06/01/2023	Corral Solids: Main Corral	3.00	Tons	47.40	1.46	0.23	0.22	%	195		2,995	478	445	0	
06/28/2023	Ground Water: Well Avg	4.23	Acre Inches		0.00			mg/L		0	0	0	33,273		
06/28/2023	Waste Water: Main Lagoon	0.40	Acre Inches		379.00	86.50	576.00	mg/L		706,012	2,229	509	3,388	28,288	
07/13/2023	Ground Water: Well Avg	4.05	Acre Inches		0.00			mg/L		0	0	0	31,857		
07/13/2023	Waste Water: Main Lagoon	0.75	Acre Inches		219.00	51.90	406.00	mg/L		1,323,772	2,415	572	4,477	39,807	
07/29/2023	Ground Water: Well Avg	3.93	Acre Inches		0.00			mg/L		0	0	0	30,913		
07/29/2023	Waste Water: Main Lagoon	0.80	Acre Inches		219.00	51.90	406.00	mg/L		1,412,024	2,576	610	4,776	42,461	
08/12/2023	Ground Water: Well Avg	4.11	Acre Inches		0.00			mg/L		0	0	0	32,329		
08/12/2023	Waste Water: Main Lagoon	0.75	Acre Inches		219.00	51.90	406.00	mg/L		1,323,772	2,415	572	4,477	39,807	
09/15/2023	Harvest	18.60	Tons	71.50	1.44	0.39	2.17	%							9,924
Acre Inches Applied:			19.02					Totals:	195	4,765,580	13,540	2,741	17,563	278,736	9,924
Season Nitrogen Ratio:				Lbs Per Acre:					208	42	270	4,288		153	

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Nutrient Applications (Attachment B)

Field Name: 2

Wheat, 74 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00		%				1,036				
01/04/2023	Ground Water: Well Avg	4.07	Acre Inches	0.00		mg/L				0	0	0	36,447	
01/04/2023	Waste Water: Main Lagoon	0.50	Acre Inches	432.00	71.30	576.00	mg/L		1,004,709	3,616	596	4,820	55,153	
03/03/2023	Ground Water: Well Avg	3.96	Acre Inches	0.00		mg/L				0	0	0	35,462	
03/03/2023	Waste Water: Main Lagoon	0.50	Acre Inches	387.00	64.70	620.00	mg/L		1,004,709	3,239	542	5,189	32,974	
04/30/2023	Ground Water: Well Avg	4.12	Acre Inches	0.00		mg/L				0	0	0	36,895	
04/30/2023	Waste Water: Main Lagoon	0.50	Acre Inches	379.00	86.50	576.00	mg/L		1,004,709	3,172	724	4,820	40,256	
05/15/2023	Harvest	18.00	Tons	64.60	1.28	0.27	1.87	%						12,071
Acre Inches Applied:		13.65		Totals:					3,014,127	11,062	1,862	14,830	237,188	12,071
Season Nitrogen Ratio:		1.21		Lbs Per Acre:						149	25	200	3,205	163

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 2

Sorghum, 74 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
				% Moist.	Nitrogen	Phos.	Potass.								
07/01/2023	Corral Solids: Main Corral	4.00	Tons	47.40	1.46	0.23	0.22	%	296	4,547	725	676	0		
08/12/2023	Ground Water: Well Avg	4.20	Acre Inches		0.00			mg/L		0	0	0	37,611		
08/12/2023	Waste Water: Main Lagoon	0.80	Acre Inches	219.00	51.90	406.00	mg/L		1,607,535	2,933	695	5,437	48,340		
08/27/2023	Ground Water: Well Avg	4.04	Acre Inches		0.00			mg/L		0	0	0	36,179		
08/27/2023	Waste Water: Main Lagoon	0.40	Acre Inches	219.00	51.90	406.00	mg/L		803,767	1,466	348	2,718	24,171		
09/12/2023	Ground Water: Well Avg	3.93	Acre Inches		0.00			mg/L		0	0	0	35,194		
09/12/2023	Waste Water: Main Lagoon	0.55	Acre Inches	455.00	87.90	530.00	mg/L		1,105,180	4,189	810	4,880	41,704		
09/26/2023	Ground Water: Well Avg	4.09	Acre Inches		0.00			mg/L		0	0	0	36,626		
10/30/2023	Harvest	17.50	Tons	69.10	1.42	0.25	1.85	%						11,364	
Acre Inches Applied:		18.01		Totals:					296	3,516,482	13,134	2,577	13,710	259,825	11,364
Season Nitrogen Ratio:		1.16		Lbs Per Acre:						177	35	185	3,511	154	

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 3

Wheat, 78 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %					1,092					
01/02/2023	Ground Water: Well Avg	4.06 Acre Inches	0.00 mg/L					0	0	0	0	38,323	
01/02/2023	Waste Water: Main Lagoon	0.65 Acre Inches	432.00 mg/L	71.30	576.00		1,376,723	4,955	817	6,606	75,575		
03/01/2023	Ground Water: Well Avg	3.96 Acre Inches	0.00 mg/L					0	0	0	0	37,379	
03/01/2023	Waste Water: Main Lagoon	0.50 Acre Inches	387.00 mg/L	64.70	620.00		1,059,018	3,414	571	5,469	34,757		
04/28/2023	Ground Water: Well Avg	4.11 Acre Inches	0.00 mg/L					0	0	0	0	38,795	
04/28/2023	Waste Water: Main Lagoon	0.45 Acre Inches	379.00 mg/L	86.50	576.00		953,116	3,009	686	4,573	38,189		
05/15/2023	Harvest	19.30 Tons	63.10 1.36 0.30 1.81 %										15,109
Acre Inches Applied:		13.73	Totals:				3,388,857	12,470	2,075	16,648	263,018	15,109	
Season Nitrogen Ratio:		0.83	Lbs Per Acre:				160	27	213	3,372	194		

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 3

Sorghum, 78 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
			% Moist.	Nitrogen	Phos.	Potass.							
08/10/2023	Ground Water: Well Avg	4.18 Acre Inches		0.00		mg/L			0	0	0	39,456	
08/10/2023	Waste Water: Main Lagoon	1.14 Acre Inches		219.00	51.90	406.00	mg/L		2,414,560	4,405	1,044	8,166	72,609
08/25/2023	Ground Water: Well Avg	4.03 Acre Inches		0.00		mg/L			0	0	0	38,040	
08/25/2023	Waste Water: Main Lagoon	1.10 Acre Inches		219.00	51.90	406.00	mg/L		2,329,839	4,250	1,007	7,880	70,061
09/10/2023	Ground Water: Well Avg	3.93 Acre Inches		0.00		mg/L			0	0	0	37,096	
09/10/2023	Waste Water: Main Lagoon	1.07 Acre Inches		219.00	51.90	406.00	mg/L		2,266,298	4,134	980	7,664	68,150
09/24/2023	Ground Water: Well Avg	4.08 Acre Inches		0.00		mg/L			0	0	0	38,512	
09/24/2023	Waste Water: Main Lagoon	0.50 Acre Inches		455.00	87.90	530.00	mg/L		1,059,018	4,014	775	4,675	39,962
10/30/2023	Harvest	19.00 Tons	69.00	1.51	0.25	1.71	%						13,875
Acre Inches Applied:		20.03	Totals:					8,069,715	16,803	3,806	28,385	403,885	13,875
Season Nitrogen Ratio:		1.21	Lbs Per Acre:					215	49	364	5,178		178

Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 4

Wheat, 103 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00		%				1,442				
01/06/2023	Ground Water: Well Avg	4.02	Acre Inches	0.00		mg/L				0	0	0	50,107	
01/06/2023	Waste Water: Main Lagoon	0.60	Acre Inches	432.00	71.30	576.00	mg/L		1,678,136	6,039	997	8,052	92,121	
03/05/2023	Ground Water: Well Avg	3.95	Acre Inches	0.00		mg/L				0	0	0	49,235	
03/05/2023	Waste Water: Main Lagoon	0.60	Acre Inches	387.00	64.70	620.00	mg/L		1,678,136	5,410	904	8,666	55,077	
05/02/2023	Ground Water: Well Avg	4.06	Acre Inches	0.00		mg/L				0	0	0	50,606	
05/02/2023	Waste Water: Main Lagoon	0.40	Acre Inches	379.00	86.50	576.00	mg/L		1,118,757	3,532	806	5,368	44,826	
05/15/2023	Harvest	17.80	Tons	62.50	1.38	0.28	1.83	%						18,976
Acre Inches Applied:		13.63		Totals:					4,475,029	16,422	2,708	22,086	341,972	18,976
Season Nitrogen Ratio:		0.87		Lbs Per Acre:					159	26	214	3,320		184

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 4

Sorghum, 103 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/14/2023	Ground Water: Well Avg	4.12 Acre Inches	0.00		mg/L			0	0	0	51,354		
08/14/2023	Waste Water: Main Lagoon	1.12 Acre Inches	219.00	51.90	406.00	mg/L	3,132,520	5,714	1,354	10,595	94,199		
08/29/2023	Ground Water: Well Avg	4.01 Acre Inches	0.00		mg/L			0	0	0	49,983		
08/29/2023	Waste Water: Main Lagoon	1.09 Acre Inches	219.00	51.90	406.00	mg/L	3,048,613	5,562	1,318	10,310	91,676		
09/14/2023	Ground Water: Well Avg	3.93 Acre Inches	0.00		mg/L			0	0	0	48,986		
09/14/2023	Waste Water: Main Lagoon	0.60 Acre Inches	455.00	87.90	530.00	mg/L	1,678,136	6,360	1,229	7,409	63,324		
09/28/2023	Ground Water: Well Avg	4.05 Acre Inches	0.00		mg/L			0	0	0	50,481		
09/28/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	1,398,446	5,300	1,024	6,174	52,770		
10/30/2023	Harvest	22.00 Tons	69.20	1.45	0.27	1.74 %						20,240	
Acre Inches Applied:		19.42	Totals:				9,257,715	22,937	4,925	34,487	502,773	20,240	
Season Nitrogen Ratio:		1.13	Lbs Per Acre:				223	48	335	4,881	196		

Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 5a

Wheat, 15 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%			210					
01/01/2023	Ground Water: Well Avg	4.69 Acre Inches	0.00		mg/L				0	0	0	8,513	
01/01/2023	Waste Water: Main Lagoon	0.55 Acre Inches	432.00	71.30	576.00 mg/L		224,023		806	133	1,075	12,298	
02/28/2023	Ground Water: Well Avg	4.17 Acre Inches	0.00		mg/L				0	0	0	7,569	
02/28/2023	Waste Water: Main Lagoon	0.55 Acre Inches	387.00	64.70	620.00 mg/L		224,023		722	121	1,157	7,353	
04/27/2023	Ground Water: Well Avg	4.95 Acre Inches	0.00		mg/L				0	0	0	8,985	
04/27/2023	Waste Water: Main Lagoon	0.50 Acre Inches	387.00	64.70	620.00 mg/L		203,657		657	110	1,052	6,684	
05/15/2023	Harvest	18.40 Tons	62.40	1.42	0.33 1.90 %								2,947
Acre Inches Applied:		15.41	Totals:				651,703	2,395	364	3,284	51,402		2,947
Season Nitrogen Ratio:		0.81	Lbs Per Acre:						160	24	219	3,427	196



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 5a

Sorghum, 15 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/09/2023	Ground Water: Well Avg	4.19 Acre Inches	0.00		mg/L			0	0	0	7,606		
08/09/2023	Waste Water: Main Lagoon	1.15 Acre Inches	219.00	51.90	406.00	mg/L	468,412	855	202	1,584	14,086		
08/24/2023	Ground Water: Well Avg	4.56 Acre Inches	0.00		mg/L			0	0	0	8,277		
08/24/2023	Waste Water: Main Lagoon	0.98 Acre Inches	219.00	51.90	406.00	mg/L	399,168	728	172	1,350	12,003		
09/09/2023	Ground Water: Well Avg	4.14 Acre Inches	0.00		mg/L			0	0	0	7,515		
09/09/2023	Waste Water: Main Lagoon	0.90 Acre Inches	219.00	51.90	406.00	mg/L	366,583	669	159	1,240	11,024		
09/19/2023	Ground Water: Well Avg	4.77 Acre Inches	0.00		mg/L			0	0	0	8,659		
10/30/2023	Harvest	18.90 Tons	68.80	1.58	0.25	1.82 %						2,795	
Acre Inches Applied:		20.69	Totals:				1,234,163	2,252	534	4,174	69,170	2,795	
Season Nitrogen Ratio:		0.81	Lbs Per Acre:				150	36	278	4,611	186		



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 5b

Wheat, 47 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
			%	Moist.	Nitrogen	Phos.	Potass.	Units						
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00						658					
01/07/2023	Ground Water: Well Avg	4.16 Acre Inches	0.00					mg/L		0	0	0	23,661	
01/07/2023	Waste Water: Main Lagoon	0.80 Acre Inches	432.00	71.30	576.00	mg/L			1,021,002	3,674	606	4,899	56,048	
03/06/2023	Ground Water: Well Avg	3.99 Acre Inches	0.00					mg/L		0	0	0	22,694	
03/06/2023	Waste Water: Main Lagoon	0.50 Acre Inches	387.00	64.70	620.00	mg/L			638,126	2,057	344	3,296	20,943	
05/03/2023	Ground Water: Well Avg	4.24 Acre Inches	0.00					mg/L		0	0	0	24,116	
05/03/2023	Waste Water: Main Lagoon	0.50 Acre Inches	379.00	86.50	576.00	mg/L			638,126	2,014	460	3,062	25,568	
05/15/2023	Harvest	18.60 Tons	61.70	1.29	0.36	1.76	%						8,638	
Acre Inches Applied:		14.19	Totals:						2,297,254	8,404	1,410	11,256	173,029	8,638
Season Nitrogen Ratio:		0.97	Lbs Per Acre:						179	30	239	3,681	184	

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 5b

Sorghum, 47 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/15/2023	Ground Water: Well Avg	4.35 Acre Inches	0.00		mg/L			0	0	0	24,741		
08/15/2023	Waste Water: Main Lagoon	0.90 Acre Inches	219.00	51.90	406.00	mg/L	1,148,627	2,095	497	3,885	34,541		
08/30/2023	Ground Water: Well Avg	4.10 Acre Inches	0.00		mg/L			0	0	0	23,320		
08/30/2023	Waste Water: Main Lagoon	0.95 Acre Inches	219.00	51.90	406.00	mg/L	1,212,439	2,212	524	4,100	36,460		
09/15/2023	Ground Water: Well Avg	3.93 Acre Inches	0.00		mg/L			0	0	0	22,353		
09/15/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	638,126	2,419	467	2,817	24,080		
09/29/2023	Ground Water: Well Avg	4.18 Acre Inches	0.00		mg/L			0	0	0	23,774		
09/29/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	638,126	2,419	467	2,817	24,080		
10/18/2023	Harvest	18.50 Tons	71.10	1.63	0.39	2.34 %							8,192
Acre Inches Applied:		19.41	Totals:				3,637,318	9,144	1,955	13,619	213,348	8,192	
Season Nitrogen Ratio:		1.12	Lbs Per Acre:				195	42	290	4,539	174		


INNOVATIVE AG SERVICES

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 6

Wheat, 92 Acres Planted on 12/15/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %						1,288				
01/08/2023	Ground Water: Well Avg	4.03 Acre Inches	0.00 mg/L						0	0	0	44,867	
01/08/2023	Waste Water: Main Lagoon	0.50 Acre Inches	432.00 71.30 576.00 mg/L				1,249,098		4,495	742	5,993	68,569	
03/07/2023	Ground Water: Well Avg	3.95 Acre Inches	0.00 mg/L						0	0	0	43,977	
03/07/2023	Waste Water: Main Lagoon	1.10 Acre Inches	387.00 64.70 620.00 mg/L				2,748,015		8,859	1,481	14,193	90,190	
05/04/2023	Ground Water: Well Avg	4.07 Acre Inches	0.00 mg/L						0	0	0	45,313	
05/04/2023	Waste Water: Main Lagoon	0.50 Acre Inches	379.00 86.50 576.00 mg/L				1,249,098		3,943	900	5,993	50,048	
05/19/2023	Harvest	17.50 Tons	59.10 1.73 0.32 0.63 %										22,784
Acre Inches Applied:		14.15	Totals:				5,246,211	18,585	3,122	26,179	342,964	22,784	
Season Nitrogen Ratio:		0.82	Lbs Per Acre:				202	34	285	3,728	3,728	248	

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 6

Sorghum, 92 Acres Planted on 07/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
07/31/2023	Ground Water: Well Avg	4.13 Acre Inches	0.00		mg/L			0	0	0	45,981		
07/31/2023	Waste Water: Main Lagoon	0.80 Acre Inches	219.00	51.90	406.00	mg/L	1,998,556	3,646	864	6,759	60,099		
08/15/2023	Ground Water: Well Avg	4.01 Acre Inches	0.00		mg/L			0	0	0	44,645		
08/15/2023	Waste Water: Main Lagoon	0.95 Acre Inches	219.00	51.90	406.00	mg/L	2,373,286	4,330	1,026	8,026	71,368		
08/31/2023	Ground Water: Well Avg	3.93 Acre Inches	0.00		mg/L			0	0	0	43,754		
08/31/2023	Waste Water: Main Lagoon	0.90 Acre Inches	219.00	51.90	406.00	mg/L	2,248,376	4,101	972	7,604	67,612		
09/14/2023	Ground Water: Well Avg	4.05 Acre Inches	0.00		mg/L			0	0	0	45,090		
09/14/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	1,249,098	4,734	914	5,514	47,134		
10/18/2023	Harvest	21.40 Tons	72.20	1.66	0.40	2.52 %							18,171
Acre Inches Applied:		19.27	Totals:				7,869,316	16,811	3,777	27,904	425,683		18,171
Season Nitrogen Ratio:		0.93	Lbs Per Acre:				183	41	303	4,627			198

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 7

Wheat, 32 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %					448					
01/09/2023	Ground Water: Well Avg	4.28 Acre Inches	0.00 mg/L					0	0	0	0	16,574	
01/09/2023	Waste Water: Main Lagoon	0.50 Acre Inches	432.00 mg/L	71.30	576.00		434,469	1,564	258	2,084	23,850		
03/08/2023	Ground Water: Well Avg	4.03 Acre Inches	0.00 mg/L					0	0	0	0	15,606	
03/08/2023	Waste Water: Main Lagoon	0.80 Acre Inches	387.00 mg/L	64.70	620.00		695,150	2,241	375	3,590	22,815		
05/05/2023	Ground Water: Well Avg	4.40 Acre Inches	0.00 mg/L					0	0	0	0	17,039	
05/05/2023	Waste Water: Main Lagoon	0.45 Acre Inches	379.00 mg/L	86.50	576.00		391,022	1,235	282	1,876	15,667		
05/15/2023	Harvest	18.70 Tons	62.60 1.39 0.34 1.86 %										6,222
Acre Inches Applied:		14.46	Totals:				1,520,641	5,487	914	7,551	111,551		6,222
Season Nitrogen Ratio:		0.88	Lbs Per Acre:				171	29	236	3,486			194



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 7

Sorghum, 32 Acres Planted on 07/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/02/2023	Ground Water: Well Avg	4.54 Acre Inches	0.00		mg/L			0	0	0	17,581		
08/02/2023	Waste Water: Main Lagoon	0.70 Acre Inches	219.00	51.90	406.00	mg/L	608,256	1,110	263	2,057	18,291		
08/17/2023	Ground Water: Well Avg	4.18 Acre Inches	0.00		mg/L			0	0	0	16,187		
08/17/2023	Waste Water: Main Lagoon	0.85 Acre Inches	219.00	51.90	406.00	mg/L	738,597	1,348	319	2,498	22,211		
09/02/2023	Ground Water: Well Avg	3.93 Acre Inches	0.00		mg/L			0	0	0	15,219		
09/02/2023	Waste Water: Main Lagoon	1.07 Acre Inches	219.00	51.90	406.00	mg/L	929,763	1,696	402	3,144	27,959		
09/16/2023	Ground Water: Well Avg	4.30 Acre Inches	0.00		mg/L			0	0	0	16,652		
09/16/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	434,469	1,647	318	1,918	16,395		
10/18/2023	Harvest	17.60 Tons	67.50	1.30	0.32	1.79 %						4,759	
Acre Inches Applied:		20.07	Totals:				2,711,085	5,800	1,302	9,617	150,494	4,759	
Season Nitrogen Ratio:		1.22	Lbs Per Acre:				181	41	301	4,703	149		



Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 8

Wheat, 82 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00	Pounds	100.00			%			1,148				
01/04/2023	Ground Water: Well Avg	3.85	Acre Inches	0.00			mg/L			0	0	0	38,205	
01/04/2023	Waste Water: Main Lagoon	0.50	Acre Inches	432.00	71.30	576.00	mg/L		1,113,326	4,007	661	5,341	61,115	
03/03/2023	Ground Water: Well Avg	4.13	Acre Inches	0.00			mg/L			0	0	0	40,983	
03/03/2023	Waste Water: Main Lagoon	0.65	Acre Inches	387.00	64.70	620.00	mg/L		1,447,324	4,666	780	7,475	47,502	
04/30/2023	Ground Water: Well Avg	4.09	Acre Inches	0.00			mg/L			0	0	0	40,586	
04/30/2023	Waste Water: Main Lagoon	0.60	Acre Inches	379.00	86.50	576.00	mg/L		1,335,992	4,218	963	6,410	53,530	
05/15/2023	Harvest	17.00	Tons	62.30	1.34	0.33	1.89	%						14,084
Acre Inches Applied:		13.82		Totals:				3,896,642	14,038	2,403	19,227	281,920	14,084	
Season Nitrogen Ratio: 1.00				Lbs Per Acre:						171	29	234	3,438	172

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 8

Corn, 82 Acres Planted on 07/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
07/30/2023	Ground Water: Well Avg	5.25	Acre Inches	0.00		mg/L				0	0	0	52,097	
07/30/2023	Waste Water: Main Lagoon	0.80	Acre Inches	219.00	51.90	406.00	mg/L	1,781,322		3,250	770	6,025	53,566	
08/14/2023	Ground Water: Well Avg	6.37	Acre Inches	0.00		mg/L				0	0	0	63,211	
08/29/2023	Ground Water: Well Avg	5.31	Acre Inches	0.00		mg/L				0	0	0	52,692	
08/29/2023	Waste Water: Main Lagoon	0.80	Acre Inches	219.00	51.90	406.00	mg/L	1,781,322		3,250	770	6,025	53,566	
09/12/2023	Ground Water: Well Avg	6.44	Acre Inches	0.00		mg/L				0	0	0	63,905	
09/26/2023	Ground Water: Well Avg	5.25	Acre Inches	0.00		mg/L				0	0	0	52,097	
09/26/2023	Waste Water: Main Lagoon	0.90	Acre Inches	455.00	87.90	530.00	mg/L	2,003,987		7,596	1,467	8,848	75,620	
10/06/2023	Ground Water: Well Avg	3.00	Acre Inches	0.00		mg/L				0	0	0	29,769	
10/18/2023	Harvest	28.00	Tons	69.20	1.20	0.26	0.95 %							16,972
Acre Inches Applied:		34.12		Totals:				5,566,632	14,095	3,007	20,897	496,525	16,972	
Season Nitrogen Ratio:		0.83		Lbs Per Acre:				172	37	255	6,055	207		

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 9

Sorghum, 77 Acres Planted on 06/16/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
			%	Moist.	Nitrogen	Phos.	Potass.	Units					
01/01/2023	Atmospheric Deposit	14.00 Pounds		100.00				%		1,078			
06/30/2023	Ground Water: Well Avg	3.77 Acre Inches		0.00				mg/L		0	0	0	35,129
06/30/2023	Waste Water: Main Lagoon	0.70 Acre Inches		379.00	86.50	576.00	mg/L		1,463,617	4,621	1,055	7,022	58,643
07/15/2023	Ground Water: Well Avg	3.63 Acre Inches		0.00				mg/L		0	0	0	33,825
07/15/2023	Waste Water: Main Lagoon	0.99 Acre Inches		219.00	51.90	406.00	mg/L		2,069,972	3,776	895	7,001	62,247
07/31/2023	Ground Water: Well Avg	3.54 Acre Inches		0.00				mg/L		0	0	0	32,986
07/31/2023	Waste Water: Main Lagoon	0.96 Acre Inches		219.00	51.90	406.00	mg/L		2,007,246	3,662	868	6,788	60,360
08/14/2023	Ground Water: Well Avg	3.68 Acre Inches		0.00				mg/L		0	0	0	34,290
08/14/2023	Waste Water: Main Lagoon	0.70 Acre Inches		219.00	51.90	406.00	mg/L		1,463,617	2,670	633	4,950	44,013
09/15/2023	Harvest	19.00 Tons		71.30	1.48	0.40	2.25	%					12,429
Acre Inches Applied:		17.97	Totals:				7,004,452	15,807	3,450	25,761	361,493	12,429	
Season Nitrogen Ratio:		1.27	Lbs Per Acre:				205	45	335	4,695	161		

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 10a

Wheat, 30 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%			420					
02/26/2023	Ground Water: Well Avg	4.04 Acre Inches	0.00		mg/L			0	0	0	0	14,667	
02/26/2023	Waste Water: Main Lagoon	1.13 Acre Inches	387.00	64.70	620.00	mg/L	920,531	2,968	496	4,754	30,212		
04/25/2023	Ground Water: Well Avg	4.43 Acre Inches	0.00		mg/L			0	0	0	0	16,083	
04/25/2023	Waste Water: Main Lagoon	0.40 Acre Inches	387.00	64.70	620.00	mg/L	325,852	1,051	176	1,683	10,694		
05/15/2023	Harvest	18.20 Tons	61.60	1.43	0.39	1.90 %							5,996
Acre Inches Applied:		10.00	Totals:				1,246,382	4,438	672	6,437	71,656		5,996
Season Nitrogen Ratio:		1.08	Lbs Per Acre:						148	22	215	2,389	200

Field Name: 10a

Sorghum, 30 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/12/2023	Ground Water: Well Avg	5.59 Acre Inches	0.00		mg/L			0	0	0	0	20,294	
08/12/2023	Waste Water: Main Lagoon	1.25 Acre Inches	219.00	51.90	406.00	mg/L	1,018,286	1,858	440	3,444	30,621		
08/27/2023	Ground Water: Well Avg	5.19 Acre Inches	0.00		mg/L			0	0	0	0	18,842	
08/27/2023	Waste Water: Main Lagoon	1.14 Acre Inches	219.00	51.90	406.00	mg/L	928,677	1,694	401	3,141	27,926		
09/12/2023	Ground Water: Well Avg	5.93 Acre Inches	0.00		mg/L			0	0	0	0	21,529	
09/12/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	407,314	1,544	298	1,798	15,370		
10/30/2023	Harvest	18.30 Tons	68.50	1.57	0.25	1.73 %							5,430
Acre Inches Applied:		19.60	Totals:				2,354,278	5,096	1,140	8,383	134,582		5,430
Season Nitrogen Ratio:		0.94	Lbs Per Acre:						170	38	279	4,486	181



Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 10b

Wheat, 140 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %					1,960					
01/10/2023	Ground Water: Well Avg	4.55 Acre Inches	0.00 mg/L					0	0	0	77,087		
01/10/2023	Waste Water: Main Lagoon	0.56 Acre Inches	432.00 mg/L	71.30	576.00		2,128,897	7,661	1,264	10,214	116,865		
03/09/2023	Ground Water: Well Avg	4.49 Acre Inches	0.00 mg/L					0	0	0	76,070		
03/09/2023	Waste Water: Main Lagoon	0.65 Acre Inches	387.00 mg/L	64.70	620.00		2,471,041	7,966	1,331	12,762	81,101		
04/27/2023	Ground Water: Well Avg	4.58 Acre Inches	0.00 mg/L					0	0	0	77,595		
04/27/2023	Waste Water: Main Lagoon	0.60 Acre Inches	387.00 mg/L	64.70	620.00		2,280,961	7,353	1,229	11,780	74,862		
05/15/2023	Harvest	19.70 Tons	61.80	1.48	0.40	1.86 %							31,185
Acre Inches Applied:		15.43	Totals:				6,880,900	24,940	3,825	34,756	503,580	31,185	
Season Nitrogen Ratio:		0.80	Lbs Per Acre:				178	27	248	3,597	223		



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 10b

Sorghum, 140 Acres Planted on 08/05/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/17/2023	Ground Water: Well Avg	4.35 Acre Inches	0.00		mg/L			0	0	0	73,697		
08/17/2023	Waste Water: Main Lagoon	0.83 Acre Inches	219.00	51.90	406.00	mg/L	3,155,330	5,757	1,364	10,671	94,885		
09/01/2023	Ground Water: Well Avg	4.26 Acre Inches	0.00		mg/L			0	0	0	72,173		
09/01/2023	Waste Water: Main Lagoon	0.81 Acre Inches	219.00	51.90	406.00	mg/L	3,079,298	5,617	1,331	10,415	92,599		
09/17/2023	Ground Water: Well Avg	4.20 Acre Inches	0.00		mg/L			0	0	0	71,156		
09/17/2023	Waste Water: Main Lagoon	0.80 Acre Inches	455.00	87.90	530.00	mg/L	3,041,282	11,528	2,227	13,427	114,762		
10/01/2023	Ground Water: Well Avg	4.29 Acre Inches	0.00		mg/L			0	0	0	72,681		
10/01/2023	Waste Water: Main Lagoon	0.40 Acre Inches	455.00	87.90	530.00	mg/L	1,520,641	5,764	1,113	6,713	57,382		
11/04/2023	Harvest	22.10 Tons	73.00	1.61	0.36	1.92 %						26,900	
Acre Inches Applied:		19.94	Totals:				10,796,550	28,665	6,035	41,226	649,335	26,900	
Season Nitrogen Ratio:		1.07	Lbs Per Acre:				205	43	294	4,638	192		



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 11a

Wheat, 95 Acres Planted on 12/15/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%			1,330					
01/08/2023	Ground Water: Well Avg	4.60 Acre Inches	0.00		mg/L				0	0	0	52,884	
01/08/2023	Waste Water: Main Lagoon	0.56 Acre Inches	432.00	71.30	576.00	mg/L		1,444,609	5,198	858	6,931	79,301	
03/07/2023	Ground Water: Well Avg	4.50 Acre Inches	0.00		mg/L				0	0	0	51,734	
03/07/2023	Waste Water: Main Lagoon	0.55 Acre Inches	387.00	64.70	620.00	mg/L		1,418,812	4,574	765	7,327	46,566	
04/24/2023	Ground Water: Well Avg	4.64 Acre Inches	0.00		mg/L				0	0	0	53,343	
04/24/2023	Waste Water: Main Lagoon	0.57 Acre Inches	387.00	64.70	620.00	mg/L		1,470,405	4,740	792	7,594	48,259	
05/19/2023	Harvest	17.70 Tons	65.10	1.62	0.32	1.86 %							19,013
Acre Inches Applied:		15.42	Totals:				4,333,826	15,843	2,415	21,853	332,088	19,013	
Season Nitrogen Ratio:		0.83	Lbs Per Acre:				167	25	230	3,496	200		

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 11b

Wheat, 138 Acres Planted on 12/18/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %						1,932				
01/11/2023	Ground Water: Well Avg	4.55 Acre Inches	0.00 mg/L						0	0	0	75,986	
01/11/2023	Waste Water: Main Lagoon	0.56 Acre Inches	432.00 mg/L	71.30	576.00		2,098,484	7,551	1,246	10,068	115,196		
03/10/2023	Ground Water: Well Avg	4.49 Acre Inches	0.00 mg/L						0	0	0	74,984	
03/10/2023	Waste Water: Main Lagoon	0.55 Acre Inches	387.00 mg/L	64.70	620.00		2,061,011	6,645	1,111	10,644	67,643		
05/07/2023	Ground Water: Well Avg	4.58 Acre Inches	0.00 mg/L						0	0	0	76,486	
05/07/2023	Waste Water: Main Lagoon	0.56 Acre Inches	379.00 mg/L	86.50	576.00		2,098,484	6,625	1,512	10,068	84,081		
05/22/2023	Harvest	17.30 Tons	58.20 1.87 0.32 0.62 %										37,322
Acre Inches Applied:		15.29	Totals:				6,257,980	22,753	3,870	30,781	494,375	37,322	
Season Nitrogen Ratio:		0.61	Lbs Per Acre:						165	28	223	3,582	270

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 11b

Sorghum, 138 Acres Planted on 08/05/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/19/2023	Ground Water: Well Avg	3.99 Acre Inches	0.00		mg/L			0	0	0	66,633		
08/19/2023	Waste Water: Main Lagoon	0.67 Acre Inches	219.00	51.90	406.00	mg/L	2,510,687	4,580	1,086	8,491	75,500		
09/03/2023	Ground Water: Well Avg	3.91 Acre Inches	0.00		mg/L			0	0	0	65,297		
09/03/2023	Waste Water: Main Lagoon	0.66 Acre Inches	219.00	51.90	406.00	mg/L	2,473,214	4,511	1,070	8,364	74,372		
09/19/2023	Ground Water: Well Avg	3.85 Acre Inches	0.00		mg/L			0	0	0	64,296		
09/19/2023	Waste Water: Main Lagoon	0.65 Acre Inches	455.00	87.90	530.00	mg/L	2,435,741	9,232	1,783	10,753	91,912		
10/03/2023	Ground Water: Well Avg	3.93 Acre Inches	0.00		mg/L			0	0	0	65,631		
10/03/2023	Waste Water: Main Lagoon	0.50 Acre Inches	455.00	87.90	530.00	mg/L	1,873,647	7,101	1,372	8,272	70,702		
11/04/2023	Harvest	20.80 Tons	72.80	1.68	0.36	2.06 %							26,234
Acre Inches Applied:		18.16	Totals:				9,293,288	25,425	5,310	35,880	574,344		26,234
Season Nitrogen Ratio:		0.97	Lbs Per Acre:				184	38	260	4,162			190

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 12

Sorghum, 64 Acres Planted on 07/19/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%			896					
08/02/2023	Ground Water: Well Avg	4.15 Acre Inches	0.00		mg/L			0	0	0	0	32,141	
08/02/2023	Waste Water: Main Lagoon	0.70 Acre Inches	219.00	51.90	406.00	mg/L	1,216,513	2,220	526	4,114	36,582		
08/17/2023	Ground Water: Well Avg	4.97 Acre Inches	0.00		mg/L			0	0	0	0	38,492	
08/17/2023	Waste Water: Main Lagoon	0.67 Acre Inches	219.00	51.90	406.00	mg/L	1,164,376	2,124	504	3,938	35,014		
09/02/2023	Ground Water: Well Avg	4.85 Acre Inches	0.00		mg/L			0	0	0	0	37,563	
09/02/2023	Waste Water: Main Lagoon	0.65 Acre Inches	219.00	51.90	406.00	mg/L	1,129,619	2,061	488	3,820	33,969		
09/16/2023	Ground Water: Well Avg	4.03 Acre Inches	0.00		mg/L			0	0	0	0	31,212	
09/16/2023	Waste Water: Main Lagoon	0.68 Acre Inches	455.00	87.90	530.00	mg/L	1,181,755	4,479	865	5,217	44,593		
10/18/2023	Harvest	22.50 Tons	71.20	1.62	0.37	2.20	%						13,437
Acre Inches Applied:		20.70	Totals:				4,692,263	11,779	2,383	17,089	289,568	13,437	
Season Nitrogen Ratio:		0.88	Lbs Per Acre:				184	37	267	4,524	210		

Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 13

Wheat, 102 Acres Planted on 12/18/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%			1,428					
01/10/2023	Ground Water: Well Avg	4.02 Acre Inches	0.00		mg/L			0	0	0	0	49,621	
01/10/2023	Waste Water: Main Lagoon	1.12 Acre Inches	432.00	71.30	576.00	mg/L	3,102,107	11,163	1,842	14,884	170,289		
03/09/2023	Ground Water: Well Avg	3.95 Acre Inches	0.00		mg/L			0	0	0	0	48,757	
03/09/2023	Waste Water: Main Lagoon	1.10 Acre Inches	387.00	64.70	620.00	mg/L	3,046,712	9,822	1,642	15,736	99,994		
05/02/2023	Ground Water: Well Avg	4.06 Acre Inches	0.00		mg/L			0	0	0	0	50,115	
05/02/2023	Waste Water: Main Lagoon	0.50 Acre Inches	379.00	86.50	576.00	mg/L	1,384,869	4,372	998	6,644	55,488		
05/22/2023	Harvest	18.70 Tons	58.80	1.79	0.32	0.65 %							28,134
Acre Inches Applied:		14.75	Totals:				7,533,689	26,784	4,482	37,264	474,263	28,134	
Season Nitrogen Ratio:		0.95	Lbs Per Acre:				263	44	365	4,650	276		



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 13

Sorghum, 102 Acres Planted on 08/05/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)	
			Units	% Moist.	Nitrogen	Phos.	Potass.	Units						
08/19/2023	Ground Water: Well Avg	4.49 Acre Inches			0.00			mg/L		0	0	0	55,423	
08/19/2023	Waste Water: Main Lagoon	0.76 Acre Inches			219.00	51.90	406.00	mg/L		2,105,001	3,840	910	7,119	
09/03/2023	Ground Water: Well Avg	4.36 Acre Inches			0.00			mg/L		0	0	0	53,817	
09/03/2023	Waste Water: Main Lagoon	0.74 Acre Inches			219.00	51.90	406.00	mg/L		2,049,607	3,739	886	6,932	
09/19/2023	Ground Water: Well Avg	4.28 Acre Inches			0.00			mg/L		0	0	0	52,830	
09/19/2023	Waste Water: Main Lagoon	0.62 Acre Inches			455.00	87.90	530.00	mg/L		1,717,238	6,509	1,258	7,582	
10/03/2023	Ground Water: Well Avg	4.40 Acre Inches			0.00			mg/L		0	0	0	54,311	
10/03/2023	Waste Water: Main Lagoon	0.54 Acre Inches			455.00	87.90	530.00	mg/L		1,495,659	5,669	1,095	6,603	
11/04/2023	Harvest	22.90 Tons		72.40	1.78	0.35	1.95	%					22,951	
Acre Inches Applied:		20.19						Totals:	7,367,505	19,757	4,149	28,236	462,554	22,951
Season Nitrogen Ratio:		0.86						Lbs Per Acre:		194	41	277	4,535	225



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 14

Wheat, 77 Acres Planted on 12/15/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%			1,078					
01/09/2023	Ground Water: Well Avg	4.06 Acre Inches	0.00		mg/L			0	0	0	0	37,832	
01/09/2023	Waste Water: Main Lagoon	0.85 Acre Inches	432.00	71.30	576.00	mg/L	1,777,249	6,396	1,056	8,528	97,561		
03/08/2023	Ground Water: Well Avg	4.96 Acre Inches	0.00		mg/L			0	0	0	0	46,218	
03/08/2023	Waste Water: Main Lagoon	0.85 Acre Inches	387.00	64.70	620.00	mg/L	1,777,249	5,730	958	9,178	58,330		
05/05/2023	Ground Water: Well Avg	4.11 Acre Inches	0.00		mg/L			0	0	0	0	38,297	
05/05/2023	Waste Water: Main Lagoon	0.60 Acre Inches	379.00	86.50	576.00	mg/L	1,254,529	3,961	904	6,019	50,266		
05/19/2023	Harvest	19.40 Tons	60.30	1.79	0.32	0.62	%						21,230
Acre Inches Applied:		15.43	Totals:				4,809,027	17,164	2,918	23,725	328,504		21,230
Season Nitrogen Ratio:		0.81	Lbs Per Acre:				223	38	308	4,266			276

Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 14

Sorghum, 77 Acres Planted on 07/31/2023

Date	Event/Source	Amount Applied/Yield (per Acre)	Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
08/12/2023	Ground Water: Well Avg	4.56	Acre Inches	0.00		mg/L		0		0	0	0	42,491	
08/12/2023	Waste Water: Main Lagoon	0.90	Acre Inches	219.00	51.90	406.00	mg/L	1,881,793	3,433	814	6,364	56,588		
08/27/2023	Ground Water: Well Avg	4.39	Acre Inches	0.00		mg/L		0		0	0	0	40,906	
08/27/2023	Waste Water: Main Lagoon	1.00	Acre Inches	219.00	51.90	406.00	mg/L	2,090,881	3,815	904	7,072	62,876		
09/12/2023	Ground Water: Well Avg	4.28	Acre Inches	0.00		mg/L		0		0	0	0	39,881	
09/12/2023	Waste Water: Main Lagoon	0.75	Acre Inches	455.00	87.90	530.00	mg/L	1,568,161	5,944	1,148	6,923	59,174		
10/30/2023	Harvest	22.30	Tons	68.40	1.51	0.25	1.68 %							16,386
Acre Inches Applied:		15.88		Totals:				5,540,835	13,191	2,866	20,359	301,917	16,386	
Season Nitrogen Ratio:		0.80		Lbs Per Acre:				171	37	264	3,921	213		



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Field Name: 15

Wheat, 75 Acres Planted on 12/11/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00		%				1,050				
01/11/2023	Ground Water: Well Avg	4.07 Acre Inches	0.00		mg/L				0	0	0	36,940	
01/11/2023	Waste Water: Main Lagoon	0.50 Acre Inches	432.00	71.30	576.00	mg/L		1,018,286	3,664	604	4,886	55,898	
03/10/2023	Ground Water: Well Avg	3.96 Acre Inches	0.00		mg/L				0	0	0	35,942	
03/10/2023	Waste Water: Main Lagoon	0.60 Acre Inches	387.00	64.70	620.00	mg/L		1,221,944	3,939	658	6,310	40,105	
04/30/2023	Ground Water: Well Avg	4.12 Acre Inches	0.00		mg/L				0	0	0	37,394	
04/30/2023	Waste Water: Main Lagoon	0.50 Acre Inches	379.00	86.50	576.00	mg/L		1,018,286	3,214	734	4,886	40,800	
05/15/2023	Harvest	18.20 Tons	61.70	1.37	0.36	1.94 %							14,324
Acre Inches Applied:		13.75	Totals:				3,258,516	11,868	1,996	16,082	247,078	14,324	
Season Nitrogen Ratio:		0.83	Lbs Per Acre:				158	27	214	3,294	191		

Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 15

Sorghum, 75 Acres Planted on 06/13/2023

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
			% Moist.	Nitrogen	Phos.	Potass.	Units						
06/25/2023	Ground Water: Well Avg	4.56 Acre Inches		0.00			mg/L		0	0	0	41,387	
06/25/2023	Waste Water: Main Lagoon	0.77 Acre Inches		379.00	86.50	576.00	mg/L		1,568,161	4,951	1,130	7,524	62,832
07/10/2023	Ground Water: Well Avg	4.39 Acre Inches		0.00			mg/L			0	0	0	39,844
07/10/2023	Waste Water: Main Lagoon	0.74 Acre Inches		219.00	51.90	406.00	mg/L		1,507,064	2,750	652	5,097	45,320
07/26/2023	Ground Water: Well Avg	4.28 Acre Inches		0.00			mg/L			0	0	0	38,846
07/26/2023	Waste Water: Main Lagoon	0.72 Acre Inches		219.00	51.90	406.00	mg/L		1,466,332	2,675	634	4,959	44,095
08/09/2023	Ground Water: Well Avg	4.45 Acre Inches		0.00			mg/L			0	0	0	40,388
08/09/2023	Waste Water: Main Lagoon	0.75 Acre Inches		219.00	51.90	406.00	mg/L		1,527,429	2,786	660	5,166	45,932
09/12/2023	Harvest	21.00 Tons	65.30	1.23	0.30	1.57	%						13,444
Acre Inches Applied:		20.66	Totals:					6,068,986	13,162	3,076	22,746	358,642	13,444
Season Nitrogen Ratio:		0.98	Lbs Per Acre:					175	41	303	4,782		179



Open Sky Ranch Dairy 2023

Nutrient Applications (Attachment B)

Field Name: 16

Wheat, 72 Acres Planted on 12/15/2022

Date	Event/Source	Amount Applied/Yield (per Acre) Units	Lab Sample Data				Manure Applied (Tons)	Wastewater Applied (Gallons)	Nitrogen Applied (Lbs)	Phosphorus Applied (Lbs)	Potassium Applied (Lbs)	Salt Applied (Lbs)	Nitrogen Extracted (Lbs)
01/01/2023	Atmospheric Deposit	14.00 Pounds	100.00 %					1,008					
01/15/2023	Ground Water: Well Avg	4.07 Acre Inches	0.00 mg/L					0	0	0	35,462		
01/15/2023	Waste Water: Main Lagoon	0.80 Acre Inches	387.00 64.70 620.00 mg/L				1,564,088	5,042	843	8,078	51,334		
03/14/2023	Ground Water: Well Avg	3.96 Acre Inches	0.00 mg/L					0	0	0	34,504		
03/14/2023	Waste Water: Main Lagoon	0.85 Acre Inches	387.00 64.70 620.00 mg/L				1,661,843	5,358	896	8,582	54,542		
04/29/2023	Ground Water: Well Avg	4.13 Acre Inches	0.00 mg/L					0	0	0	35,985		
04/29/2023	Waste Water: Main Lagoon	0.50 Acre Inches	379.00 86.50 576.00 mg/L				977,555	3,086	704	4,690	39,168		
05/19/2023	Harvest	20.70 Tons	65.90 1.77 0.40 1.89 %										17,991
Acre Inches Applied:		14.31	Totals:				4,203,486	14,494	2,443	21,350	250,995		17,991
Season Nitrogen Ratio:		0.81	Lbs Per Acre:					201	34	297	3,486		250

Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

Summary of Nutrient Applications, Removal, and Balance

	<u>Total N (Lbs)</u>	<u>Total P (Lbs)</u>	<u>Total K (Lbs)</u>	<u>Total Salts (Lbs)</u>	<u>Total Manure Applied</u>
Solid Manure	7,541.76	1,202.95	1,120.87	0.00	491.00 tons
Process Wastewater	446,591.50	89,309.45	682,222.23	5,831,528.89	162,760,430.31 gallons
Irrigation Water	0.00				
Fertilizer / Total Imports	0.00				
Atmospheric Deposition	20,412.00				
Total Nitrogen Applied	474,545.26				
Crop Nitrogen Removal	519,530.00				
Nitrogen Balance	(44,984.74)				
Nitrogen Ratio	0.91				

- Nutrient applications shown in Attachment B are on a calendar year basis.
 - Lab sample data results for applications are based on the sample taken closest to the application date. Lab sample data results are shown on 100% dry basis for manure applications and harvest events.
 - Well Avg: Irrigation source representing the average nutrient values of all irrigation wells sampled for the facility during the reporting year.
- ** Book Value: No sample data results were available. For manure applications and plant tissue harvests, the calculations were based off book values.



Open Sky Ranch Dairy 2023 Nutrient Applications (Attachment B)

FIELD NITROGEN RATIO Calculation:

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

ATMOSHERIC DEPOSITION Applied (Lbs) Calculation:

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

HARVEST Nitrogen Extraction (Lbs) Calculation:

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

IRRIGATION Nitrogen and Salts Applied (Lbs) Calculations:

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

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

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

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

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

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

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

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

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

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

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

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

"Lbs Applied per Acre" Calculations:

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

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

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

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

Open Sky Ranch Dairy 2023
Estimated Manure and Process Wastewater/Nutrients Transferred Off-Site (Attachment C)

A. ESTIMATED TOTAL MANURE TRANSFERRED OFFSITE

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

* 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 (NO₃-N or TKN, P, K, TDS) x 10-6 using the samples closest in date to the export event.

Open Sky Ranch Dairy 2023
Land Application Area Description Technical Report (Attachment D)

Field Name	Assessor Parcel Number(s)	Acres	Type of Waste Applied
1	x050 x170 x48S xxxx	65	Both
2	x050 x170 x48S xxxx	74	Both
3	x050 x170 x48S xxxx	78	Process Wastewater
4	x050 x200 x37S xxxx, x050 x200 x38S xxxx	103	Process Wastewater
5a	x050 x200 x37S xxxx, x050 x200 x38S xxxx	15	Process Wastewater
5b	x050 x200 x37S xxxx, x050 x200 x38S xxxx	47	Process Wastewater
6	x050 x200 x38S xxxx	92	Process Wastewater
7	x050 x200 x38S xxxx	32	Process Wastewater
8	x050 x200 x38S xxxx	82	Process Wastewater
9	x050 x170 x48S xxxx	77	Process Wastewater
10a	x050 x170 x42S xxxx, x050 x170 x48S xxxx	30	Process Wastewater
10b	x050 x170 x43S xxxx, x050 x170 x44S xxxx, x050 x170 x48S xxxx	140	Process Wastewater
11a	x050 x200 x34S xxxx, x050 x200 x38S xxxx	95	Process Wastewater
11b	x050 x200 x34S xxxx, x050 x200 x38S xxxx	138	Process Wastewater
12	x050 x200 x38S xxxx	64	Process Wastewater
13	x050 x200 x38S xxxx	102	Process Wastewater
14	x050 x200 x34S xxxx	77	Process Wastewater
15	x050 x200 x34S xxxx	75	Process Wastewater
16	x050 x200 x34S xxxx	72	Process Wastewater
		1,458	

Production Area APN(s): x050 x170 x45S xxxx, x050 x170 x47S xxxx, x050 x170 x48S xxxx

Open Sky Ranch Dairy 2023 Lab Results Summary (Attachment E)

Process Wastewater

(mg/l/ppm unless noted otherwise)

Sample Date:	TKN	TP	TK	EC (umhos/cm)	NH4N	NO3N	TDS	pH (units)	General Minerals					
									CA	MG	NA	HCO3	CO3	SO4
03/09/2023	387.00	64.70	620.00	5,930	215.00		3,940.00							
06/16/2023	379.00	86.50	576.00	7,240	354.00	0.00	4,810.00	7.62						
07/14/2023	219.00	51.90	406.00	5,440	187.00		3,610.00							
11/09/2023	455.00	87.90	530.00	6,820	452.00		4,530.00							
Averages:	360.00	72.75	533.00	6,358	302.00	0.00	4,222.50	7.62						

Manure - Corral Solids

(Dry Weight Basis)

Sample Date:	TN	TP	TK	Moisture	Ash	CA	MG	NA	S	CL
06/06/2023	1.46	0.23	0.22	47.40						%
11/09/2023	1.41	0.22	0.28	37.00						%
Averages:	1.44	0.22	0.25	42.20						

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
1	1	Sorghum	09/15/2023	28.80	7.80	43.40	71.50	20.90
2	1	Wheat	05/15/2023	25.60	5.48	37.40	64.60	25.70



Open Sky Ranch Dairy 2023 Lab Results Summary (Attachment E)

Plant Tissue
(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
2	2	Sorghum	10/30/2023	28.40	5.02	37.00	69.10	11.30
3	1	Wheat	05/15/2023	27.20	6.00	36.20	63.10	21.50
3	2	Sorghum	10/30/2023	30.20	5.06	34.20	69.00	12.40
4	1	Wheat	05/15/2023	27.60	5.66	36.60	62.50	21.30
4	2	Sorghum	10/30/2023	29.00	5.44	34.80	69.20	12.70
5a	1	Wheat	05/15/2023	28.40	6.60	38.00	62.40	15.10
5a	2	Sorghum	10/30/2023	31.60	5.08	36.40	68.80	11.10
5b	1	Wheat	05/15/2023	25.80	7.20	35.20	61.70	14.70
5b	2	Sorghum	10/18/2023	32.60	7.86	46.80	71.10	20.10
6	1	Wheat	05/19/2023	34.60	6.36	12.60	59.10	5.92
6	2	Sorghum	10/18/2023	33.20	8.02	50.40	72.20	17.30
7	1	Wheat	05/15/2023	27.80	6.86	37.20	62.60	15.90
7	2	Sorghum	10/18/2023	26.00	6.32	35.80	67.50	32.60
8	1	Wheat	05/15/2023	26.80	6.54	37.80	62.30	19.60
8	2	Corn	10/18/2023	24.00	5.18	18.96	69.20	5.31
9	1	Sorghum	09/15/2023	29.60	8.06	45.00	71.30	21.40
10a	1	Wheat	05/15/2023	28.60	7.84	38.00	61.60	14.90
10a	2	Sorghum	10/30/2023	31.40	5.06	34.60	68.50	11.50

Open Sky Ranch Dairy 2023 Lab Results Summary (Attachment E)

Plant Tissue

(Dry Weight Basis)

Field:	Crop #:	Crop	Sample Date:	TN (lbs/ton)	TP (lbs/ton)	TK (lbs/ton)	Moisture (%)	Ash (%)
10b	1	Wheat	05/15/2023	29.60	8.08	37.20	61.80	13.20
10b	2	Sorghum	11/04/2023	32.20	7.18	38.40	73.00	11.00
11a	1	Wheat	05/19/2023	32.40	6.42	37.20	65.10	16.20
11b	1	Wheat	05/22/2023	37.40	6.36	12.42	58.20	5.98
11b	2	Sorghum	11/04/2023	33.60	7.24	41.20	72.80	11.00
12	1	Sorghum	10/18/2023	32.40	7.36	44.00	71.20	22.20
13	1	Wheat	05/22/2023	35.80	6.50	13.02	58.80	6.06
13	2	Sorghum	11/04/2023	35.60	7.00	39.00	72.40	10.90
14	1	Wheat	05/19/2023	35.80	6.38	12.34	60.30	6.04
14	2	Sorghum	10/30/2023	30.20	4.96	33.60	68.40	10.90
15	1	Wheat	05/15/2023	27.40	7.26	38.80	61.70	17.20
15	2	Sorghum	09/12/2023	24.60	5.96	31.40	65.30	37.80
16	1	Wheat	05/19/2023	35.40	7.98	37.80	65.90	14.40

Well / Irrigation Water

(mg/l/ppm unless noted otherwise)

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



INNOVATIVE AG SERVICES

Open Sky Ranch Dairy 2023

Lab Results Summary (Attachment E)

Well / Irrigation Water

(mg/l/ppm unless noted otherwise)

	Sample Date:	NO3N	TP	EC (umhos/cm)	NH4N *	TDS	TN	General Minerals						
								CA	MG	NA	HCO3	CO3	SO4	CL
Domestic														
#1	03/08/2023	0.00		839		520.00		8.00	2.00	185.00	340.00	0.00	17.10	70.00
DW#1	12/08/2023	0.00		796										
DW#2								Out of service.						
Averages:		0.00		818		520.00		8.00	2.00	185.00	340.00	0.00	17.10	70.00
Irrigation														
4								Did not run.						
5	10/25/2023	0.00		815		530.00	0.00							
6								Did not run.						
10								Did not run.						
11								Did not run.						
11A								New to dairy. We will sample in 2024.						
12								Did not run.						
12A	12/13/2023	0.00		920		540.00	0.00	13.00	3.00	157.00	330.00	0.00	3.10	130.00
13								Did not run.						
14								Did not run.						
Averages:		0.00		868		535.00	0.00	13.00	3.00	157.00	330.00	0.00	3.10	130.00

* NH4N was non-detectable unless a value is shown



INNOVATIVE AG SERVICES

**Open Sky Ranch Dairy 2023
Planting and Harvest Information (Attachment F)**

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field:	1							
	1	Sorghum	65	06/16/2023	09/15/2023	17.5	1209.0	18.6
Field:	2							
	1	Wheat	74	12/11/2022	05/15/2023	17.0	1332.0	18.0
	2	Sorghum	74	07/31/2023	10/30/2023	18.0	1295.0	17.5
Field:	3							
	1	Wheat	78	12/11/2022	05/15/2023	19.5	1505.4	19.3
	2	Sorghum	78	07/31/2023	10/30/2023	23.0	1482.0	19.0
Field:	4							
	1	Wheat	103	12/11/2022	05/15/2023	17.5	1833.4	17.8
	2	Sorghum	103	07/31/2023	10/30/2023	23.7	2266.0	22.0
Field:	5a							
	1	Wheat	15	12/11/2022	05/15/2023	18.0	276.0	18.4
	2	Sorghum	15	07/31/2023	10/30/2023	18.0	283.5	18.9
Field:	5b							
	1	Wheat	47	12/11/2022	05/15/2023	18.1	874.2	18.6
	2	Sorghum	47	07/31/2023	10/18/2023	16.6	869.5	18.5
Field:	6							
	1	Wheat	92	12/15/2022	05/19/2023	16.2	1610.0	17.5
	2	Sorghum	92	07/19/2023	10/18/2023	22.1	1968.8	21.4
Field:	7							
	1	Wheat	32	12/11/2022	05/15/2023	19.3	598.4	18.7
	2	Sorghum	32	07/19/2023	10/18/2023	17.4	563.2	17.6
Field:	8							
	1	Wheat	82	12/11/2022	05/15/2023	17.8	1394.0	17.0
	2	Corn	82	07/19/2023	10/18/2023	30.0	2296.0	28.0



**Open Sky Ranch Dairy 2023
Planting and Harvest Information (Attachment F)**

	Crop #	Crop	Acres Planted	Plant Date	Harvest Date	Estimated Yield (tons)	Tons Harvested	Actual Yield
Field: 9								
	1	Sorghum	77	06/16/2023	09/15/2023	18.0	1463.0	19.0
Field: 10a								
	1	Wheat	30	12/11/2022	05/15/2023	17.8	546.0	18.2
	2	Sorghum	30	07/31/2023	10/30/2023	18.0	549.0	18.3
Field: 10b								
	1	Wheat	140	12/11/2022	05/15/2023	19.3	2758.0	19.7
	2	Sorghum	140	08/05/2023	11/04/2023	23.2	3094.0	22.1
Field: 11a								
	1	Wheat	95	12/15/2022	05/19/2023	18.0	1681.5	17.7
Field: 11b								
	1	Wheat	138	12/18/2022	05/22/2023	18.0	2387.4	17.3
	2	Sorghum	138	08/05/2023	11/04/2023	18.0	2870.4	20.8
Field: 12								
	1	Sorghum	64	07/19/2023	10/18/2023	23.6	1440.0	22.5
Field: 13								
	1	Wheat	102	12/18/2022	05/22/2023	18.4	1907.4	18.7
	2	Sorghum	102	08/05/2023	11/04/2023	23.9	2335.8	22.9
Field: 14								
	1	Wheat	77	12/15/2022	05/19/2023	19.8	1493.8	19.4
	2	Sorghum	77	07/31/2023	10/30/2023	24.5	1717.1	22.3
Field: 15								
	1	Wheat	75	12/11/2022	05/15/2023	18.4	1365.0	18.2
	2	Sorghum	75	06/13/2023	09/12/2023	23.0	1575.0	21.0
Field: 16								
	1	Wheat	72	12/15/2022	05/19/2023	21.3	1490.4	20.7



Open Sky Ranch Dairy 2023

Weather Data (Attachment G)

Day	January	February	March	April	May	June	July	August	September	October	November	December
1	None	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	None	None	None	None	None	None	None	None
5	Heavy	None	Light	None	None	None	None	None	None	None	None	None
6	Light	None	Light	None	None	None	None	None	None	None	None	None
7	None	None	None	None	None	None	None	None	None	None	None	None
8	None	None	None	None	None	None	None	None	None	None	None	None
9	Light	None	Light	None	None	None	None	None	None	None	None	None
10	Light	None	Light	None	None	None	None	None	None	None	None	None
11	None	None	None	None	None	None	None	None	None	None	None	None
12	SWP	None	None	None	None	None	None	None	None	None	None	None
13	Light	None	None	None	None	None	None	None	None	None	None	None
14	SWP	None	None	None	None	None	None	None	None	None	None	None
15	Light	None	Heavy	None	None	None	None	None	None	None	None	None
16	Light	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	Heavy	None	None	None	None	None	None	None	None	Light
20	None	None	None	None	None	None	None	None	None	None	None	SWP
21	None	None	Heavy	None	None	None	None	None	None	None	None	None
22	None	None	Light	None	None	None	None	None	None	None	None	None
23	None	None	None	None	None	None	None	None	None	None	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	None	Light	None	None	None	None	None	None	None	None	None
29	Light		None	None	None	None	None	None	None	None	None	Light
30	None		None	None	None	None	None	None	None	None	None	SWP
31	None		None		None		None	None		None		None

*Note: SWP = Standing Water Present



January 2, 2024

Lab No. : VI 2348526

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

Customer No. : 4018573
Reference : 42174

Laboratory Report

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

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
12A	12/13/2023	12/13/2023	VI 2348526-001	AGW

Sampling and Receipt Information:

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

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

Test Summary

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

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

KD: JRD

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

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

Section: Case Narrative

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Corporate Offices & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory
853 Corporation Street Santa Paula, CA 93060 TEL: (805)392-2000 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	563 E. Lindo Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	3442 Empresa Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2775	9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2810



January 2, 2024

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

Description : 12A
 Project : 0236 Open Sky Ranch, LLC

Lab No. : VI 2348526-001
 Customer No.: 4018573
 Reference : 42174
 Sampled On : December 13, 2023 at 14:40
 Sampled By : Alex
 Received On : December 13, 2023 at 16:19
 Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Alkalinity (as CaCO ₃)	270	10	mg/L		1		12/17/2023	14:00	amm	SM 4500-H+B	12/18/2023	00:27	amm
Bicarbonate	330	10	mg/L		1		12/17/2023	14:00	amm	SM 4500-H+B	12/18/2023	00:27	amm
Carbonate	ND	10	mg/L		1	U	12/17/2023	14:00	amm	SM 4500-H+B	12/18/2023	00:27	amm
Hydroxide	ND	10	mg/L		1	U	12/17/2023	14:00	amm	SM 4500-H+B	12/18/2023	00:27	amm
Chloride	130	3*	mg/L		3	h	12/14/2023	15:59	ldm	EPA 300.0	12/15/2023	20:45	ldm
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	12/21/2023	17:10	lcr	EPA 351.2	12/23/2023	21:01	lcr
Nitrate Nitrogen	ND	0.1	mg/L		1	U	12/14/2023	15:59	ldm	EPA 300.0	12/15/2023	09:41	ldm
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	U	12/21/2023	17:10	lcr	Calc.	12/23/2023	21:01	lcr
Nitrate + Nitrite as N	ND	0.1	mg/L		1	U	12/14/2023	15:59	ldm	EPA 300.0	12/15/2023	09:41	ldm
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	12/21/2023	17:10	lcr	EPA 351.2	12/23/2023	21:01	lcr
Conductivity	920	1	umhos/cm		1		12/17/2023	14:00	amm	SM 4500-H+B	12/18/2023	00:27	amm
Sulfate Sulfur	3.1	0.17	mg/L		1		12/14/2023	15:59	ldm	EPA 300.0	12/15/2023	09:41	ldm
Solids, Total Dissolved (TDS)	540	20	mg/L		1		12/15/2023	09:50	ctl	SM 2540 C	12/18/2023	11:00	ctl
Calcium	13	1	mg/L		1	h	12/20/2023	07:00	ac	EPA 200.7	12/20/2023	18:58	ac
Magnesium	3	1	mg/L		1		12/20/2023	07:00	ac	EPA 200.7	12/20/2023	18:58	ac
Sodium	157	1	mg/L		1	hl	12/20/2023	07:00	ac	EPA 200.7	12/20/2023	18:58	ac

DQF Flags Definition:

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

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



January 2, 2024

Innovative Ag Services, LLC

Lab No. : VI 2348526

Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	12/20/2023:214322AC (VI 2348243-001)	Blank LCS MS MSRD (VI 2348281-001)	mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 4.0% 12.00	ND 102% 135% 108% 153%	<1 85-115 <¼ 75-125 75-125	406 435
Magnesium	200.7	12/20/2023:214322AC (VI 2348243-001)	Blank LCS MS MSRD (VI 2348281-001)	mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 5.1% 12.00	ND 98.7% 102% 95.7% 114%	<1 85-115 75-125 75-125 75-125	
Sodium	200.7	12/20/2023:214322AC (VI 2348243-001)	Blank LCS MS MSRD (VI 2348281-001)	mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 4.4% 12.00	ND 95.8% 130% 91.8% 154%	<1 85-115 <¼ 75-125 75-125	406 435 435
						69.1% 18.5%	75-125 ≤20.0	

Definition

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

Explanation

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

January 2, 2024

Innovative Ag Services, LLC

Lab No. : VI 2348526
 Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO ₃)	2320B	(STK2356930-002)	Dup	mg/L		0.1%	10	
Bicarbonate	2320B	(STK2356930-002)	Dup	mg/L		0.1%	10	
E. C.	2320B	(STK2356930-002)	Dup	umhos/cm		0%	5	
Solids, Total Dissolved	2540CE	12/15/2023:214116CTL (VI 2348528-001) (VI 2348528-001)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	991.5	ND 101% 1.39% 2.52%	<20 90-110 5 5	
Chloride	300.0	12/14/2023:214301LDM (VI 2348523-001) (STK2356930-004)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	25.00	ND 101% 99.9% 100% 0.3% 226% 227% 0.4%	<1 90-110 67-117 67-117 ≤7 67-117 435 67-117 435 ≤7	
Nitrate + Nitrite as N	300.0	12/14/2023:214301LDM (VI 2348523-001) (STK2356930-004)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	20.00	ND 101% 91.2% 91.9% 0.4% 104% 104% 0.1%	<0.4 90-110 86-112 86-112 ≤7 86-112 86-112 ≤7	
Nitrate Nitrogen	300.0	12/14/2023:214301LDM (VI 2348523-001) (STK2356930-004)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	20.00	ND 101% 91.2% 91.9% 0.4% 104% 104% 0.1%	<0.4 90-110 86-112 86-112 ≤7 86-112 86-112 ≤7	
Sulfate Sulfur	300.0	12/14/2023:214301LDM (VI 2348523-001) (STK2356930-004)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	50.00 100.0 100.0 100.0 100.0 128% 128% 0.0%	ND 102% 101% 102% 0.4% 104% 104% ≤7	<0.5 90-110 18-165 18-165 ≤7 18-165 18-165 18-165 ≤7	
Nitrogen, Total Kjeldahl	351.2	12/21/2023:214421LCR (STK2356930-002) (STK2356930-004)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	12.00 12.00 12.00 12.00 12.00 95.8% 102% 6.0%	ND 106% 97.8% 101% 2.5% ≤20 90-110 90-110 ≤20	<0.5 73-124 90-110 90-110 ≤20 90-110 90-110 ≤20	

Definition

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

Explanation

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



Laboratory Analysis Work Order

Nº 42174

ID: # 02362348526SITE NAME: Open Sky Ranch, LLCBilling: IASLABORATORY: FGL

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

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

Process Waste Water (lagoon)

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

Manure

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

Soil

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

Plant Tissue

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

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N *	pH	Temp
1	12A	Irr	W5 12/13 2:40	Alex			
2							
3							
4							
5							
6							
7							
8							

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

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

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	Abner R.	IAS		12/13/23 3:30
2 nd	AB	FGL	12/13/23 1556	
3 rd	AB	FGL		12/13/23 1619
4 th	MBC	FGL	12/13/23 1619	

LABORATORY USE ONLY	Tue	12/13/23 1730	Total Samples:		Laboratory #:	GJ	1014123
Logged In By:	JAS					GJ	1014123



December 21, 2023

Lab No. : VI 2348356

Customer No. : 4018573

Reference : 42144

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

Laboratory Report

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

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
DW#1	12/08/2023	12/08/2023	VI 2348356-001	DW

Sampling and Receipt Information:

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

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

Test Summary

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

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

KD: JRD

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
 Title: Laboratory Director
 Date: 2023-12-22



December 21, 2023

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

Description : DW#1
 Project : 0236 Open Sky Ranch Dairy

Lab No. : VI 2348356-001

Customer No.: 4018573

Reference : 42144

Sampled On : December 8, 2023 at 08:45

Sampled By : Zeke

Received On : December 8, 2023 at 15:51

Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis				
							Date	Time	Who	Method	Date	Time	Who	
Dairy Analysis														
Nitrate Nitrogen	ND	0.4	mg/L	10	1	U	12/19/2023	10:00	lfs	SM 4500-NO3 F	12/19/2023	14:21	lfs	
Conductivity	796	1	umhos/cm	1600 ²	1		12/13/2023	08:05	krh	SM 4500-H+B	12/13/2023	09:27	krh	

DQF Flags Definition:

U Constituent results were non-detect.

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

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



December 21, 2023

Innovative Ag Services, LLC

Lab No. : VI 2348356

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(SP 2320394-001)	Dup	umhos/cm		0.3%	5	
Nitrate Nitrogen	4500NO3F	12/19/2023:214315LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	97.6%	80-120	
		(SP 2320711-001)	MS	mg/L	5.609	93.0%	66-125	
			MSD	mg/L	5.609	93.1%	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 analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
- MSRPD : MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
- ND : Non-detect - Result was below the DQO listed for the analyte.

Corporate Offices & Laboratory

853 Corporation Street
Santa Paula, CA 93060
TEL: (805)392-2000
Env FAX: (805)525-4172 / Ag FAX: (805)392-2063
CA ELAP Certification No. 1573

Office & Laboratory

2500 Stagecoach Road
Stockton, CA 95215
TEL: (209)842-0182
FAX: (209)842-0423
CA ELAP Certification No. 1563

Office & Laboratory

563 E. Linda Avenue
Chico, CA 95926
TEL: (530)343-5818
FAX: (530)343-3807
CA ELAP Certification No. 2670

Office & Laboratory

3442 Empresa Drive, Suite D
San Luis Obispo, CA 93401
TEL: (805)783-2940
FAX: (805)783-2912
CA ELAP Certification No. 2775

Office & Laboratory

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



Laboratory Analysis Work Order

16.8°C ROC

ID#TH401

ID: # 0276SITE NAME: OPEN SKY RANCHBilling: JAS

Nº 42144

2348354

LABORATORY: FGL

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

ANALYSIS TO BE COMPLETED:

Irrigation/Ground Water (ELAP Standards)

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

W8 Other: _____

Plant Tissue

P1 TN, NO₃N, PO₄P, K (Mid Season - Wheat)

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

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

P4 TN, %M

P5 % Moisture

P6 NIR

P7 Other: _____

Process Waste Water (lagoon)

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

L4 Other: _____

Manure

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

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

M3 Other: _____

Soil

S1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO₃N, PO₄P, K-AA, Zn, Mn, Fe, Cu, SO₄SS2 S1 + CEC, CaCO₃, OM, C:N, TNS3 NO₃N, NH₄N

S4 Other: _____

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N*	pH	Temp
1 DW#1	Dom	W1	12-8 / 8:45	Zake			
2							
3							
4							
5							
6							
7							
8							

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

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

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	<u>JAS</u>	<u>JAS</u>		12-8-23 / 2:30
2 nd	<u>AJB</u>	<u>FGL</u>	12-8-23 1535	
3 rd	<u>AJB</u>	<u>FGL</u>		12-8-23 1551
4 th		<u>FGL</u>	12-8-2023 1551	

Rel.: CGS
LABORATORY USE ONLY
Rec'd: GCS
Logged In By: GCS

12-8-2023 1730

Total Samples: _____

Laboratory #: _____



November 15, 2023

Lab No. : VI 2347259

Customer No. : 4018573

Reference : 41673

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

Laboratory Report

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

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
5	10/25/2023	10/25/2023	VI 2347259-001	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: JRD

Approved By **Kelly A. Dunnahoo, B.S.**  Digitally signed by Kelly A. Dunnahoo, B.S.
 Title: Laboratory Director
 Date: 2023-11-15

Section: Case Narrative

Page 1 of 3

Page 1 of 3

Corporate Offices & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory
853 Corporation Street Santa Paula, CA 93060 TEL: (805)392-2000 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	563 E. Lindo Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	3442 Empress Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2775	9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2810



November 15, 2023

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

Description : 5
 Project : 0236 Open Sky Ranch Dairy

Lab No. : VI 2347259-001

Customer No.: 4018573

Reference : 41673

Sampled On : October 25, 2023 at 09:25

Sampled By : Zeke

Received On : October 25, 2023 at 16:30

Matrix : Ag Water

Sample Results - Inorganic

Constituent	Result	RL	Units	Note	Dil.	DQF	Sample Preparation			Sample Analysis			
							Date	Time	Who	Method	Date	Time	Who
Dairy Analysis													
Nitrogen, Total Kjeldahl	ND	0.5	mg/L		1	U	11/06/2023	12:41	sta	EPA 351.2	11/12/2023	17:30	lcr
Nitrate Nitrogen	ND	0.4	mg/L		1	U	10/26/2023	13:15	lfs	SM 4500-NO3 F	10/26/2023	15:31	lfs
Nitrogen, Total as Nitrogen	ND	0.5	mg/L		1	U	11/06/2023	12:41	sta	Calc.	11/12/2023	17:30	lcr
Nitrate + Nitrite as N	ND	0.4	mg/L		1	U	10/26/2023	13:15	lfs	SM 4500-NO3 F	10/26/2023	15:31	lfs
Kjeldahl Nitrogen	ND	0.5	mg/L		1	U	11/06/2023	12:41	sta	EPA 351.2	11/12/2023	17:30	lcr
Conductivity	815	1	umhos/cm		1		11/03/2023	07:56	krh	SM 4500-H+B	11/03/2023	09:52	krh
Solids, Total Dissolved (TDS)	530	20	mg/L		1		10/27/2023	13:00	ctl	SM 2540 C	10/30/2023	10:45	ctl

DQF Flags Definition:

U Constituent results were non-detect.

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



November 15, 2023

Innovative Ag Services, LLC

Lab No. : VI 2347259

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
E. C.	2320B	(VI 2347165-001)	Dup	umhos/cm		0.6%	5	
Solids, Total Dissolved	2540CE	10/27/2023:212174CTL	Blank	mg/L		ND	<20	
			LCS	mg/L	991.5	98.8%	90-110	
		(VI 2347236-001)	Dup	mg/L		0.5%	5	
		(VI 2347236-001)	Dup	mg/L		0.7%	5	
Nitrogen, Total Kjeldahl	351.2	11/06/2023:212602STA	Blank	mg/L		ND	<0.5	
			LCS	mg/L	12.00	96.0%	73-124	
		(CH 2379032-009)	MS	mg/L	12.00	96.2%	90-110	
			MSD	mg/L	12.00	92.6%	90-110	
			MSRPD	mg/L		3.6%	≤20	
		(CH 2379032-010)	MS	mg/L	12.00	91.9%	90-110	
			MSD	mg/L	12.00	94.5%	90-110	
			MSRPD	mg/L		2.8%	≤20	
Nitrate + Nitrite as N	4500NO3F	10/26/2023:212150LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	94.7%	80-120	
		(CH 2379222-001)	MS	mg/L	5.609	95.1%	66-125	
			MSD	mg/L	5.609	96.8%	66-125	
			MSRPD	mg/L		1.5%	≤30.4	
Nitrate Nitrogen	4500NO3F	10/26/2023:212150LFS	Blank	mg/L		ND	<0.4	
			LCS	mg/L	11.22	94.7%	80-120	
		(CH 2379222-001)	MS	mg/L	5.609	95.1%	66-125	
			MSD	mg/L	5.609	96.8%	66-125	
			MSRPD	mg/L		1.5%	≤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.

Corporate Offices & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory	Office & Laboratory
853 Corporation Street Santa Paula, CA 93060 TEL: (805)392-2000 Env FAX: (805)525-4172 / Ag FAX: (805)392-2063 CA ELAP Certification No. 1573	2500 Stagecoach Road Stockton, CA 95215 TEL: (209)942-0182 FAX: (209)942-0423 CA ELAP Certification No. 1563	565 E. Lindo Avenue Chico, CA 95926 TEL: (530)343-5818 FAX: (530)343-3807 CA ELAP Certification No. 2670	3442 Empresa Drive, Suite D San Luis Obispo, CA 93401 TEL: (805)783-2940 FAX: (805)783-2912 CA ELAP Certification No. 2775	9415 W. Goshen Avenue Visalia, CA 93291 TEL: (559)734-9473 FAX: (559)734-8435 CA ELAP Certification No. 2810



Laboratory Analysis Work Order

Nº 41673

ID: # 0236

SITE NAME: OPEN SKY RANCH

Billing:

IAS

ANALYSIS TO BE COMPLETED:**Irrigation/Ground Water (ELAP Standards)**W1 EC, NO₃N (Dom)W2 EC, NO₃N, TDS, TN (Irr)W3 NH₄N (Ammonium)W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dom, GM)W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)W6 NO₃N, NO₂ (Dom ILRP, Annually)W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)

W8 Other: _____

Plant TissueP1 TN, NO₃N, PO₄P, K (Mid Season - Wheat)

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

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

P4 TN, %M

P5 % Moisture

P6 NIR

P7 Other: _____

2847259

LABORATORY: FGL

Authorized Copy Release to:

Innovative Ag Services LLC

(559) 587-2800

Process Waste Water (lagoon)L1 EC, NH₄N, TKN, TP, TK, TDS (Quarterly)L2 EC, NO₃N, NH₄N, TKN, TP, TK, TDS, pH (Annually)L3 L1 + Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Biennially)

L4 Other: _____

Manure

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

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

M3 Other: _____

SoilS1 SP%, pH, EC, Ca, Mg, Na, K, ESP, LP, B, NO₃N, PO₄P, K-AA, Zn, Mn, Fe, Cu, SO₄SS2 S1 + CEC, CaCO₃, OM, C:N, TNS3 NO₃N, NH₄N

S4 Other: _____

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N*	pH	Temp
1	5	IRR	10-25/9:25	Zek			
2							
3							
4							
5							
6							
7							
8							

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

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

NOTES: R01 6.6°C ID#TH407

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st		IAS		10-25-23 / 1:50
2 nd	ASB	FGL	10-25-23 1617	
3 rd	ASB	FGL		10-25-23 1630
4 th	SGO	FGL	10-25-23 1630	
Laboratory Use Only		FGL	10-25-23 1730	
Logged In By:		GLS	10-25-23 1730	
			Total Samples: 6	Laboratory #: 1140



March 21, 2023

Lab No. : VI 2341449

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

Customer No. : 4018573
Reference : 40214

Laboratory Report

Introduction: This report package contains a total of 4 pages divided into 3 sections:

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

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab No.	Matrix
#1	03/08/2023	03/08/2023	VI 2341449-001	DW

Sampling and Receipt Information:

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

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

Test Summary

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

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

KD: JRD

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

Section: Case Narrative

Page 1 of 4

Page 1 of 4

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FAX: (805)783-2912
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Office & Laboratory
9415 W. Goshen Avenue
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TEL: (559)734-9473
FAX: (559)734-8435
CA ELAP Certification No. 2810



March 21, 2023

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

Description : #1
 Project : 0236 Open Sky Ranch

Lab No. : VI 2341449-001
 Customer No.: 4018573
 Reference : 40214
 Sampled On : March 8, 2023 at 12:00
 Sampled By : Sean
 Received On : March 8, 2023 at 16:20
 Matrix : Drinking Water

Sample Results - Inorganic

Constituent	Result	RL	Units	MCL/AL	Dil.	DQF	Sample Preparation			Sample Analysis				
							Date	Time	Who	Method	Date	Time	Who	
Dairy Analysis														
Alkalinity (as CaCO ₃)	280	10	mg/L		1		03/19/2023	17:56	amm	SM 4500-H+B	03/20/2023	02:57	amm	
Bicarbonate	340	10	mg/L		1		03/19/2023	17:56	amm	SM 4500-H+B	03/20/2023	02:57	amm	
Carbonate	ND	10	mg/L		1	U	03/19/2023	17:56	amm	SM 4500-H+B	03/20/2023	02:57	amm	
Hydroxide	ND	10	mg/L		1	U	03/19/2023	17:56	amm	SM 4500-H+B	03/20/2023	02:57	amm	
Chloride	70	1	mg/L	500 ²	1	b	03/09/2023	10:46	ldm	EPA 300.0	03/09/2023	21:45	krh	
Nitrate Nitrogen	ND	0.1	mg/L	10	1	U	03/09/2023	10:46	ldm	EPA 300.0	03/09/2023	21:45	krh	
Conductivity	839	1	umhos/cm	1600 ²	1		03/19/2023	17:56	amm	SM 4500-H+B	03/20/2023	02:57	amm	
Sulfate Sulfur	17.1	0.17	mg/L		1		03/09/2023	10:46	ldm	EPA 300.0	03/09/2023	21:45	krh	
Solids, Total Dissolved (TDS)	520	20	mg/L	1000 ²	1		03/13/2023	10:25	ctl	SM 2540 C	03/14/2023	11:00	ctl	
Calcium	8	1	mg/L		1		03/14/2023	06:05	ejc	EPA 200.7	03/15/2023	12:25	ac	
Magnesium	2	1	mg/L		1		03/14/2023	06:05	ejc	EPA 200.7	03/15/2023	12:25	ac	
Potassium	3	1	mg/L		1		03/14/2023	06:05	ejc	EPA 200.7	03/15/2023	12:25	ac	
Sodium	185	1	mg/L		1		03/14/2023	06:05	ejc	EPA 200.7	03/15/2023	12:25	ac	

DQF Flags Definition:

U Constituent results were non-detect.

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

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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March 21, 2023

Innovative Ag Services, LLC

Lab No. : VI 2341449

Customer No. : 4018573

Quality Control - Metals

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	03/14/2023:202776EJC	Blank	mg/L		ND	<1	
		(CC 2380755-001)	LCS	mg/L	12.00	109 %	85-115	
			MS	mg/L	12.00	110 %	75-125	
			MSD	mg/L	12.00	117 %	75-125	
		(SP 2303496-001)	MSRPD	mg/L	0.8000	2.1%	≤20.0	
			MS	mg/L	12.00	108 %	75-125	
			MSD	mg/L	12.00	49.9 %	<¼	
			MSRPD	mg/L	0.8000	5.6%	≤20.0	
Magnesium	200.7	03/14/2023:202776EJC	Blank	mg/L		ND	<1	
		(CC 2380755-001)	LCS	mg/L	12.00	107 %	85-115	
			MS	mg/L	12.00	103 %	75-125	
			MSD	mg/L	12.00	116 %	75-125	
			MSRPD	mg/L	0.8000	1.6%	≤20	
		(SP 2303496-001)	MS	mg/L	12.00	111 %	75-125	
			MSD	mg/L	12.00	90.9 %	75-125	
			MSRPD	mg/L	0.8000	5.7%	≤20	
Potassium	200.7	03/14/2023:202776EJC	Blank	mg/L		ND	<1	
		(CC 2380755-001)	LCS	mg/L	12.00	96.3 %	85-115	
			MS	mg/L	12.00	102 %	75-125	
			MSD	mg/L	12.00	105 %	75-125	
			MSRPD	mg/L	0.8000	2.7%	≤20.0	
		(SP 2303496-001)	MS	mg/L	12.00	111 %	75-125	
			MSD	mg/L	12.00	100 %	75-125	
			MSRPD	mg/L	0.8000	7.5%	≤20.0	
Sodium	200.7	03/14/2023:202776EJC	Blank	mg/L		ND	<1	
		(CC 2380755-001)	LCS	mg/L	12.00	103 %	85-115	
			MS	mg/L	12.00	109 %	75-125	
			MSD	mg/L	12.00	113 %	75-125	
			MSRPD	mg/L	0.8000	2.0%	≤20.0	
		(SP 2303496-001)	MS	mg/L	12.00	98.3 %	75-125	
			MSD	mg/L	12.00	21.5 %	<¼	
			MSRPD	mg/L	0.8000	5.5%	≤20.0	

Definition

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

March 21, 2023

Innovative Ag Services, LLC

Lab No. : VI 2341449

Customer No. : 4018573

Quality Control - Wet Chem

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO ₃)	2320B	03/19/2023:202939AMM	ND	mg/L		0.07%	10	
Bicarbonate	2320B	(VI 2341449-001)	Dup	mg/L		0.07%	10	
E. C.	2320B	(VI 2341449-001)	Dup	umhos/cm		0.1%	5	
Solids, Total Dissolved	2540CE	03/13/2023:202703CTL (SP 2303453-004) (SP 2303453-004)	Blank LCS Dup Dup	mg/L mg/L mg/L mg/L	993.3	ND 101% 0.4% 2.24%	<20 90-110 5 5	
Chloride	300.0	03/09/2023:202645LDM (SP 2303307-001) (SP 2303158-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	25.00 50.00 50.00 50.00 10.00 50.00 50.00 10.00	1 98.8 % 98.8 % 92.7 % 5.4% 93.6 % 91.4 % 1.5%	<1 90-110 85-121 85-121 ≤19 85-121 85-121 ≤19	
Nitrate Nitrogen	300.0	03/09/2023:202645LDM (SP 2303307-001) (SP 2303158-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	20.00 40.00 40.00 10.00 10.00 40.00 40.00 10.00	ND 98.2 % 102 % 95.7 % 5.9% 102 % 99.4 % 2.3%	<0.4 90-110 85-119 85-119 ≤19 85-119 85-119 ≤19	
Sulfate Sulfur	300.0	03/09/2023:202645LDM (SP 2303307-001) (SP 2303158-001)	Blank LCS MS MSD MSRPD MS MSD MSRPD	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	50.00 100.0 100.0 10.00 10.00 100.0 100.0 10.00	ND 97.9 % 98.0 % 92.2 % 5.0% 96.4 % 94.3 % 1.6%	<0.5 90-110 82-124 82-124 ≤23 82-124 82-124 ≤23	

Definition

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



Laboratory Analysis Work Order

Nº 40214

ID: # 07362341449SITE NAME: OPEN SKY RANCHBilling: JAS**ANALYSIS TO BE COMPLETED:****Irrigation/Ground Water (ELAP Standards)**

- W1** EC, NO₃N (Dom) *20 154*
W2 EC, NO₃N, TDS, TN (Irr)
W3 NH₄-N (Ammonium)
W4 EC, NO₃N, Ca, Mg, Na, K, HCO₃, CO₃, SO₄S, Cl, TDS (Dam, GM)
W5 EC, NO₃N, TDS, TN, Ca, Mg, Na, HCO₃, CO₃, SO₄S, Cl (Irr, GM)
W6 NO₃N, NO₂ (Dom ILRP, Annually)
W7 Ca, Mg, Na, K, HCO₃, CO₃, SO₄, Cl + Lab Filtering (GWM)
W8 Other: _____

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

Sample ID	Description	Analysis	Date/Time	Sampled by	IAS USE ONLY: FIELD TESTS		
					NH ₃ N *	pH	Temp
1	Dm	W4	3/8/23 12:00	SEAN	0		
2							
3							
4							
5							
6							
7							
8							

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

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

NOTES:

CHAIN OF CUSTODY RECORDING

	Signature	Company	Received Date & Time	Relinquished Date & Time
1 st	<i>JK</i>	<i>FSL</i>		3/8/23 12:45
2 nd	<i>EMT</i>	<i>FSL</i>	3/8/23 16:05	
3 rd	<i>EMA</i>	<i>FSL</i>		3/8/23 16:20
4 th	<i>BB</i>		3/8/23 16:20	

LABORATORY USE ONLY

Logged In By: *BB*Total Samples: *3*Laboratory #: *742*

GLS IAC 3/9/23 12:20