

**Annual Report - General Order No. R5-2007-0035**

*Reporting period 01/01/2023 to 12/31/2023.*

**DAIRY FACILITY INFORMATION**

**A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY:** CSUF Ag Foundation Dairy

Physical address of dairy:

5450 N Sierra Vista AVE

Fresno

Fresno

93740

Number and Street

City

County

Zip Code

Street and nearest cross street (if no address): \_\_\_\_\_

Date facility was originally placed in operation: 01/01/1981

Regional Water Quality Control Board Basin Plan designation: Tulare Basin

County Assessor Parcel Number(s) for dairy facility:

0420-0020-0021-0000

**B. OPERATORS**

Ag Foundation of California State University, Fresno

Operator name: Ag Foundation of California State University, Fresno

Telephone no.: (559) 278-2011

Landline

Cellular

2771 E Shaw AVE

Fresno

CA

93710

Mailing Address Number and Street

City

State

Zip Code

**This operator is responsible for paying permit fees.**

Roos, Vince

Operator name: Roos, Vince

Telephone no.: (559) 278-1697

Landline

Cellular

2385 E Barstow Ave., M/S AG85

Fresno

CA

93740

Mailing Address Number and Street

City

State

Zip Code

**C. OWNERS**

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Ag Foundation of California State University, Fresno

Legal owner name: <u>Ag Foundation of California State University, Fresno</u>	Telephone no.: <u>(559) 278-2011</u>
	Landline
<u>2771 E Shaw AVE</u>	<u>CA</u>
Mailing Address Number and Street	City
	State
	Zip Code

**This owner is responsible for paying permit fees.**

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**AVAILABLE NUTRIENTS****A. HERD INFORMATION**

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo. to breeding)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number open confinement	0	37	75	57	26	18
Number under roof	160	0	0	0	0	0
Maximum number	170	39	77	59	28	22
Average number	160	37	75	57	26	18
Avg live weight (lbs)	1,150	1,200	875	475		

Predominant milk cow breed: Holstein

Average milk production: 65 pounds per cow per day

**B. MANURE GENERATED**

Total manure excreted by the herd: 5,916.57 tons per reporting period

Total nitrogen from manure: 73,960.95 lbs per reporting period

After ammonia losses (30% loss applied): 51,772.67 lbs per reporting period

Total phosphorus from manure: 12,028.98 lbs per reporting period

Total potassium from manure: 30,115.88 lbs per reporting period

Total salt from manure: 83,844.15 lbs per reporting period

**C. PROCESS WASTEWATER GENERATED**

Process wastewater generated: 7,032,000 gallons

Total nitrogen generated: 25,152.07 lbs

Total phosphorus generated: 2,861.08 lbs

Total potassium generated: 18,467.65 lbs

Total salt generated: 101,703.09 lbs

7,032,000 gallons applied
+ 0 gallons exported
- 0 gallons imported
= 7,032,000 gallons generated

**D. FRESH WATER SOURCES**

Source Description	Type
Canal 1	Surface water

**E. SUBSURFACE (TILE) DRAINAGE SOURCES**

No subsurface (tile) drainage sources entered.

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**F. NUTRIENT IMPORTS**

*No dry manure nutrient imports entered.*

*No process wastewater nutrient imports entered.*

*No commercial or other nutrient imports entered.*

**G. NUTRIENT EXPORTS**

*No solid nutrient exports entered.*

*No liquid nutrient exports entered.*

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**APPLICATION AREA****A. LIST OF LAND APPLICATION AREAS**

Field name	Controlled acres	Cropable acres	Total harvests	Type of waste applied	Parcel number
A2	37	37	0	none	0410-0040-0005-0000
A3	37	37	0	none	0410-0040-0007-0000
A4	35	35	1	manure	0410-0040-0007-0000
B1	31	31	2	manure	0410-0040-0015-0000
B3	36	36	2	both	0410-0040-0017-0000
B4	36	36	2	both	0410-0040-0017-0000
B5	23	23	0	none	0410-0050-0027-0000
Totals for areas that were used for application	138	138	7		
Totals for areas that were not used for application	97	97	0		
Land application area totals	235	235	7		

**B. CROPS AND HARVESTS**

A4

Field name: A4

01/24/2023: Bromegrass, forage

Crop: Bromegrass, forage      Acres planted: 35      Plant date: 01/24/2023

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
10/01/2023	350.00 ton	Dry-weight		29.0	15,000.00	3,000.00	12,000.00		9.00

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	8.00	288.00	45.60	392.00	0.00
Total actual harvest content	10.00	213.00	42.60	170.40	1,278.00

B1

Field name: B1

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**B1**

11/15/2022: Wheat, silage, soft dough

Crop: Wheat, silage, soft dough      Acres planted: 31      Plant date: 11/15/2022

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
04/28/2023	372.00 ton	Dry-weight		64.2	39,712.00	2,490.00	21,400.00		10.40

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	12.00	132.00	20.40	99.60	0.00
Total actual harvest content	12.00	341.21	21.39	183.87	893.57

05/12/2023: Corn, silage

Crop: Corn, silage      Acres planted: 31      Plant date: 05/12/2023

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
08/24/2023	775.00 ton	Dry-weight		65.1	27,440.00	3,150.00	13,400.00		9.70

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	25.00	200.00	37.50	165.00	0.00
Total actual harvest content	25.00	478.83	54.97	233.83	1,692.65

**B3**Field name: B3

11/15/2022: Wheat, silage, soft dough

Crop: Wheat, silage, soft dough      Acres planted: 36      Plant date: 11/15/2022

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
04/28/2023	432.00 ton	Dry-weight		65.4	31,792.00	2,770.00	19,600.00		10.90

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	12.00	132.00	20.40	99.60	0.00
Total actual harvest content	12.00	264.00	23.00	162.76	905.14

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**B3**

05/12/2023: Corn, silage

Crop: Corn, silage      Acres planted: 36      Plant date: 05/12/2023

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
08/24/2023	900.00 <i>ton</i>	Dry-weight		64.2	27,470.00	3,420.00	12,000.00		9.40

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	25.00	200.00	37.50	165.00	0.00
Total actual harvest content	25.00	491.71	61.22	214.80	1,682.60

**B4**

Field name: B4

11/15/2022: Wheat, silage, soft dough

Crop: Wheat, silage, soft dough      Acres planted: 36      Plant date: 11/15/2022

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
04/28/2023	432.00 <i>ton</i>	Dry-weight		67.2	32,862.00	2,054.00	15,366.00		14.00

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	12.00	132.00	20.40	99.60	0.00
Total actual harvest content	12.00	258.69	16.17	120.96	1,102.08

05/11/2023: Corn, silage

Crop: Corn, silage      Acres planted: 36      Plant date: 05/11/2023

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
08/24/2023	900.00 <i>ton</i>	Dry-weight		63.4	27,350.00	3,300.00	11,700.00		9.70

	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)
Anticipated harvest content	25.00	200.00	37.50	165.00	0.00
Total actual harvest content	25.00	500.51	60.39	214.11	1,775.10

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**NUTRIENT BUDGET****A. LAND APPLICATIONS**

A4 - 01/24/2023: Bromegrass, forage

Field name: A4

Crop: Bromegrass, forage Plant date: 01/24/2023

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
01/15/2023	Broadcast/incorporate	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Dry Manure	Corral solids	170.62	100.81	367.28	13,965.84	350.00 ton
Application event totals		170.62	100.81	367.28	13,965.84	
01/29/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.62	0.00	0.00	39.14	2,160,000.00 gal
Application event totals		0.62	0.00	0.00	39.14	
04/27/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.24	0.00	0.00	78.28	4,320,000.00 gal
Application event totals		1.24	0.00	0.00	78.28	
05/29/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.85	0.00	0.00	117.42	6,480,000.00 gal
Application event totals		1.85	0.00	0.00	117.42	
06/25/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.85	0.00	0.00	117.42	6,480,000.00 gal
Application event totals		1.85	0.00	0.00	117.42	

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A4 - 01/24/2023: Bromegrass, forage

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
07/12/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.85	0.00	0.00	117.42	6,480,000.00 gal
Application event totals		1.85	0.00	0.00	117.42	
08/01/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.85	0.00	0.00	117.42	6,480,000.00 gal
Application event totals		1.85	0.00	0.00	117.42	
09/01/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.85	0.00	0.00	117.42	6,480,000.00 gal
Application event totals		1.85	0.00	0.00	117.42	

B1 - 11/15/2022: Wheat, silage, soft dough

Field name:	B1	Plant date:	11/15/2022			
Crop:	Wheat, silage, soft dough					
Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
10/15/2022	Broadcast/incorporate	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Dry Manure	Corral solids	272.56	76.54	345.97	7,426.11	250.00 ton
Application event totals		272.56	76.54	345.97	7,426.11	
10/28/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		0.28	0.00	0.00	17.68	

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B1 - 11/15/2022: Wheat, silage, soft dough

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
11/11/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		0.28	0.00	0.00	17.68	
11/25/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		0.28	0.00	0.00	17.68	
12/09/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
UN 32	Liquid commercial fertilizer	70.00	0.00	0.00	0.00	
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		70.28	0.00	0.00	17.68	
12/23/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		0.28	0.00	0.00	17.68	
01/06/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		0.28	0.00	0.00	17.68	
01/20/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal
Application event totals		0.28	0.00	0.00	17.68	

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B1 - 05/12/2023: Corn, silage

Field name: B1

Crop: Corn, silage

Plant date: 05/12/2023

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
05/02/2023	Broadcast/incorporate	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Dry Manure	Corral solids	272.56	76.54	345.97	7,426.11	250.00 ton
Application event totals		272.56	76.54	345.97	7,426.11	
05/10/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	0.56	0.00	0.00	35.35	1,728,000.00 gal
Application event totals		0.56	0.00	0.00	35.35	
05/19/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	
05/29/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	
06/08/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	
06/17/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	

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B1 - 05/12/2023: Corn, silage

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
06/27/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	
07/07/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	
07/17/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.67	0.00	0.00	106.06	5,184,000.00 gal
Application event totals		1.67	0.00	0.00	106.06	
07/27/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.67	0.00	0.00	106.06	5,184,000.00 gal
Application event totals		1.67	0.00	0.00	106.06	
08/07/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	70.71	3,456,000.00 gal
Application event totals		1.12	0.00	0.00	70.71	

B3 - 11/15/2022: Wheat, silage, soft dough

Field name: B3

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022

Application date	Application method	Precipitation 24 hours prior	Precipitation during application	Precipitation 24 hours following

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B3 - 11/15/2022: Wheat, silage, soft dough

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
11/05/2022	Broadcast/incorporate	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Dry Manure	Corral solids	281.64	79.10	357.51	7,673.65	300.00 ton
Application event totals		281.64	79.10	357.51	7,673.65	
11/17/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.27	0.00	0.00	80.33	4,560,000.00 gal
Application event totals		1.27	0.00	0.00	80.33	
01/30/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Wastewater	Process wastewater	60.46	11.53	52.48	282.89	686,000.00 gal
Canal 1	Surface water	0.60	0.00	0.00	38.05	2,160,000.00 gal
Application event totals		61.06	11.53	52.48	320.95	

B3 - 05/12/2023: Corn, silage

Field name: B3

Crop: Corn, silage

Plant date: 05/12/2023

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
05/18/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Wastewater	Process wastewater	99.22	9.69	70.07	387.99	972,000.00 gal
Canal 1	Surface water	1.20	0.00	0.00	76.11	4,320,000.00 gal
Application event totals		100.42	9.69	70.07	464.10	

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B3 - 05/12/2023: Corn, silage

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
06/01/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Wastewater	Process wastewater	198.43	19.38	140.15	775.98	1,944,000.00 gal
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		200.84	19.38	140.15	928.20	
06/28/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
UN 32	Liquid commercial fertilizer	100.00	0.00	0.00	0.00	
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		102.40	0.00	0.00	152.21	
07/14/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	3.00	0.00	0.00	190.27	10,800,000.00 gal
Application event totals		3.00	0.00	0.00	190.27	
08/04/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		2.40	0.00	0.00	152.21	

B4 - 11/15/2022: Wheat, silage, soft dough

Field name: B4

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022

Application date	Application method	Precipitation 24 hours prior	Precipitation during application	Precipitation 24 hours following
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B4 - 11/15/2022: Wheat, silage, soft dough

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
11/06/2022	Broadcast/incorporate	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Dry Manure	Corral solids	281.64	79.10	357.51	7,673.65	300.00 ton
Application event totals		281.64	79.10	357.51	7,673.65	
11/14/2022	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.55	0.00	0.00	97.95	5,560,000.00 gal
Application event totals		1.55	0.00	0.00	97.95	
01/27/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Wastewater	Process wastewater	60.46	11.53	52.48	282.89	686,000.00 gal
Canal 1	Surface water	0.60	0.00	0.00	38.05	2,160,000.00 gal
Application event totals		61.06	11.53	52.48	320.95	

B4 - 05/11/2023: Corn, silage

Field name:	B4	Plant date:	05/11/2023			
Crop:	Corn, silage					
Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
05/05/2023	Broadcast/incorporate	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Dry Manure	Corral solids	150.21	42.18	190.67	4,092.61	160.00 ton
Application event totals		150.21	42.18	190.67	4,092.61	
05/20/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.80	0.00	0.00	114.16	6,480,000.00 gal
Application event totals		1.80	0.00	0.00	114.16	

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B4 - 05/11/2023: Corn, silage

Application date	Application method	Precipitation 24 hours prior	Precipitation during application		Precipitation 24 hours following	
06/04/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Wastewater	Process wastewater	81.66	7.97	57.67	319.34	800,000.00 gal
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		84.06	7.97	57.67	471.55	
07/01/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Wastewater	Process wastewater	198.43	19.38	140.15	775.98	1,944,000.00 gal
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		200.84	19.38	140.15	928.20	
07/18/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		2.40	0.00	0.00	152.21	
08/07/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal
Application event totals		2.40	0.00	0.00	152.21	

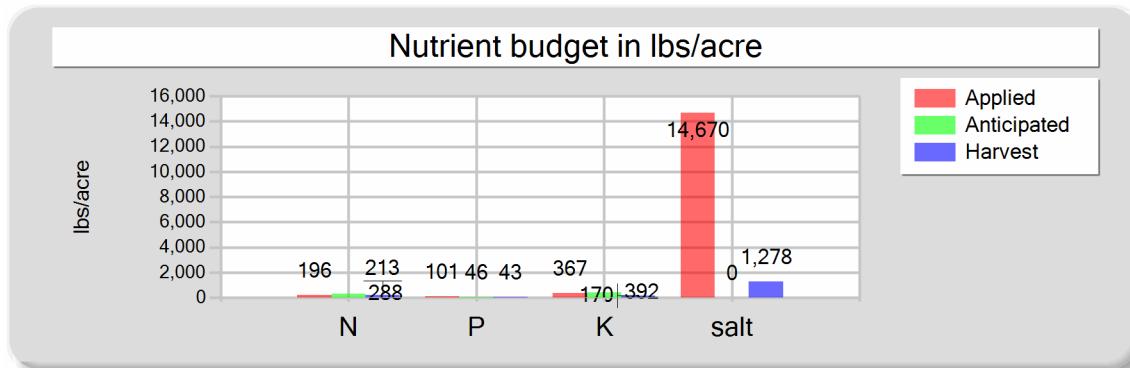
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**B. NUTRIENT BUDGET**

A4 - 01/24/2023: Bromegrass, forage

Field name: A4      Crop: Bromegrass, forage      Plant date: 01/24/2023



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	0.00	0.00	0.00	0.00
Dry manure	170.62	100.81	367.28	13,965.84
Process wastewater	0.00	0.00	0.00	0.00
Fresh water	11.12	0.00	0.00	704.53
Atmospheric deposition	14.00	0.00	0.00	0.00
<b>Total nutrients applied</b>	<b>195.75</b>	<b>100.81</b>	<b>367.28</b>	<b>14,670.37</b>
Anticipated crop nutrient removal	288.00	45.60	392.00	0.00
Actual crop nutrient removal	213.00	42.60	170.40	1,278.00
Nutrient balance	-17.25	58.21	196.88	13,392.37
Applied to removed ratio	0.92	2.37	2.16	11.48

Fresh water applied
38,880,000.00 gallons
1,431.82 acre-inches
40.91 inches/acre
Process wastewater applied
0.00 gallons
0.00 acre-inches
0.00 inches/acre
Total harvests for the crop
1 harvests

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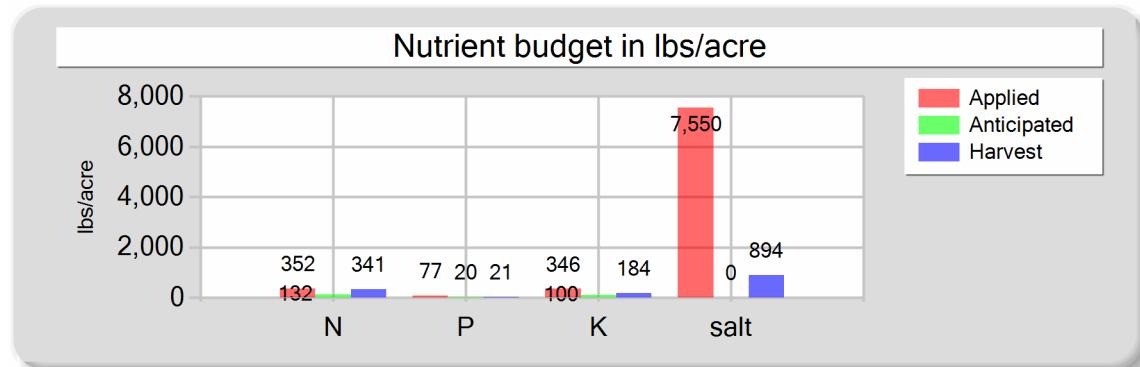
Reporting period 01/01/2023 to 12/31/2023.

B1 - 11/15/2022: Wheat, silage, soft dough

Field name: B1

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022



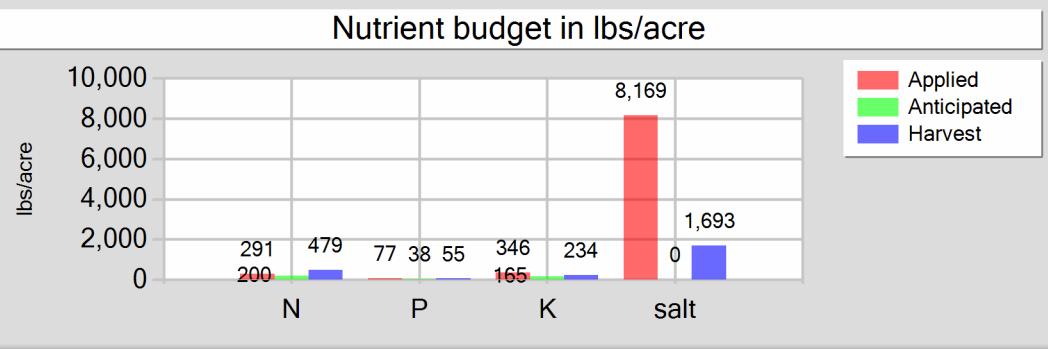
	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	6,048,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	222.73 acre-inches
Commercial fertilizer / Other	70.00	0.00	0.00	0.00	7.18 inches/acre
Dry manure	272.56	76.54	345.97	7,426.11	
Process wastewater	0.00	0.00	0.00	0.00	Process wastewater applied
Fresh water	1.95	0.00	0.00	123.73	0.00 gallons
Atmospheric deposition	7.00	0.00	0.00	0.00	0.00 acre-inches
Total nutrients applied	351.51	76.54	345.97	7,549.85	0.00 inches/acre
Anticipated crop nutrient removal	132.00	20.40	99.60	0.00	
Actual crop nutrient removal	341.21	21.39	183.87	893.57	Total harvests for the crop
Nutrient balance	10.31	55.15	162.11	6,656.28	1 harvests
Applied to removed ratio	1.03	3.58	1.88	8.45	

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B1 - 05/12/2023: Corn, silage

Field name: B1      Crop: Corn, silage      Plant date: 05/12/2023



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	0.00	0.00	0.00	0.00
Dry manure	272.56	76.54	345.97	7,426.11
Process wastewater	0.00	0.00	0.00	0.00
Fresh water	11.72	0.00	0.00	742.41
Atmospheric deposition	7.00	0.00	0.00	0.00
Total nutrients applied	291.28	76.54	345.97	8,168.52
Anticipated crop nutrient removal	200.00	37.50	165.00	0.00
Actual crop nutrient removal	478.83	54.97	233.83	1,692.65
Nutrient balance	-187.55	21.58	112.14	6,475.87
Applied to removed ratio	0.61	1.39	1.48	4.83

**Fresh water applied**  
36,288,000.00 gallons  
1,336.36 acre-inches  
43.11 inches/acre

**Process wastewater applied**  
0.00 gallons  
0.00 acre-inches  
0.00 inches/acre

**Total harvests for the crop**  
1 harvests

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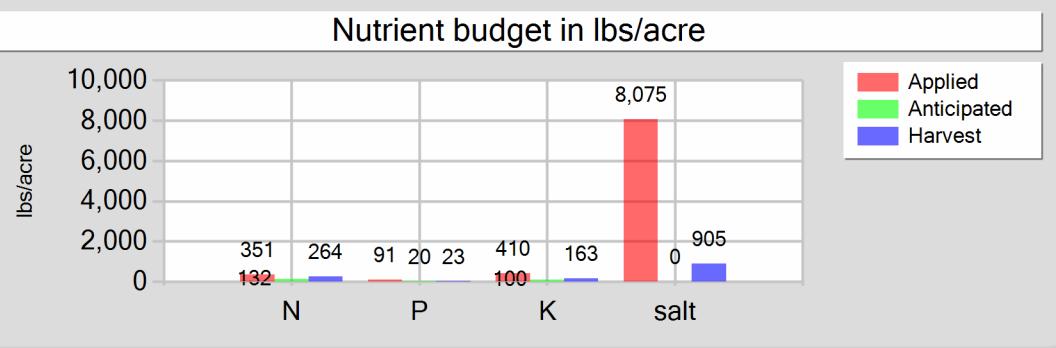
Reporting period 01/01/2023 to 12/31/2023.

B3 - 11/15/2022: Wheat, silage, soft dough

Field name: B3

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022



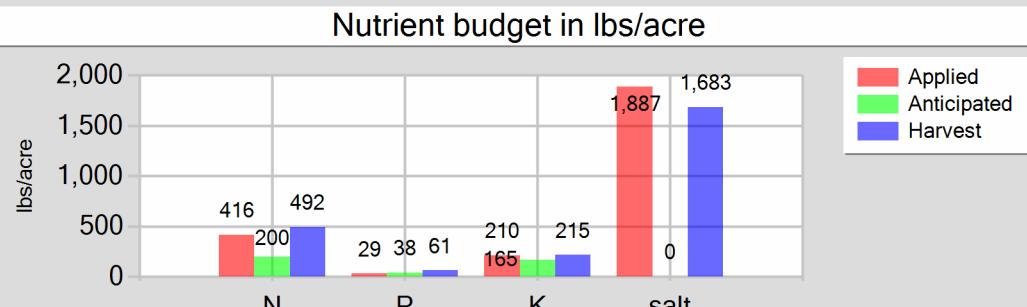
	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	6,720,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	247.47 acre-inches
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	6.87 inches/acre
Dry manure	281.64	79.10	357.51	7,673.65	
Process wastewater	60.46	11.53	52.48	282.89	Process wastewater applied
Fresh water	1.87	0.00	0.00	118.39	686,000.00 gallons
Atmospheric deposition	7.00	0.00	0.00	0.00	25.26 acre-inches
Total nutrients applied	350.97	90.62	409.98	8,074.93	0.70 inches/acre
Anticipated crop nutrient removal	132.00	20.40	99.60	0.00	
Actual crop nutrient removal	264.00	23.00	162.76	905.14	Total harvests for the crop
Nutrient balance	86.97	67.62	247.22	7,169.80	1 harvests
Applied to removed ratio	1.33	3.94	2.52	8.92	

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B3 - 05/12/2023: Corn, silage

Field name: B3      Crop: Corn, silage      Plant date: 05/12/2023



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	100.00	0.00	0.00	0.00
Dry manure	0.00	0.00	0.00	0.00
Process wastewater	297.65	29.07	210.22	1,163.98
Fresh water	11.42	0.00	0.00	723.01
Atmospheric deposition	7.00	0.00	0.00	0.00
Total nutrients applied	416.07	29.07	210.22	1,886.99
Anticipated crop nutrient removal	200.00	37.50	165.00	0.00
Actual crop nutrient removal	491.71	61.22	214.80	1,682.60
Nutrient balance	-75.64	-32.15	-4.58	204.39
Applied to removed ratio	0.85	0.47	0.98	1.12

**Fresh water applied**  
41,040,000.00 gallons  
1,511.36 acre-inches  
41.98 inches/acre

**Process wastewater applied**  
2,916,000.00 gallons  
107.39 acre-inches  
2.98 inches/acre

**Total harvests for the crop**  
1 harvests

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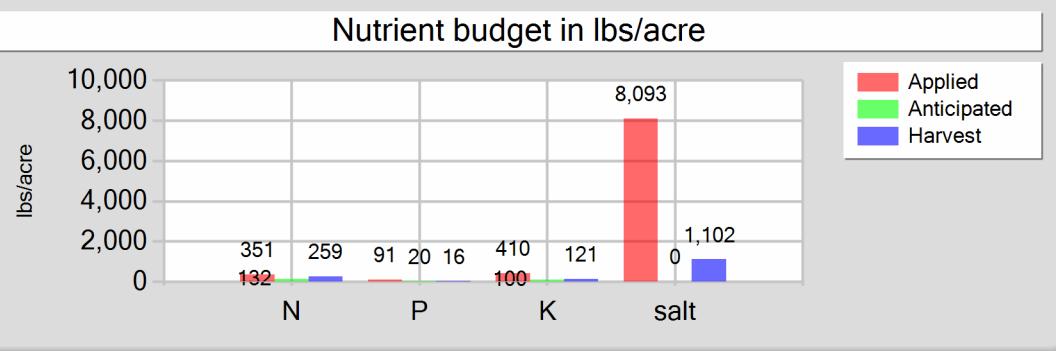
Reporting period 01/01/2023 to 12/31/2023.

B4 - 11/15/2022: Wheat, silage, soft dough

Field name: B4

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022



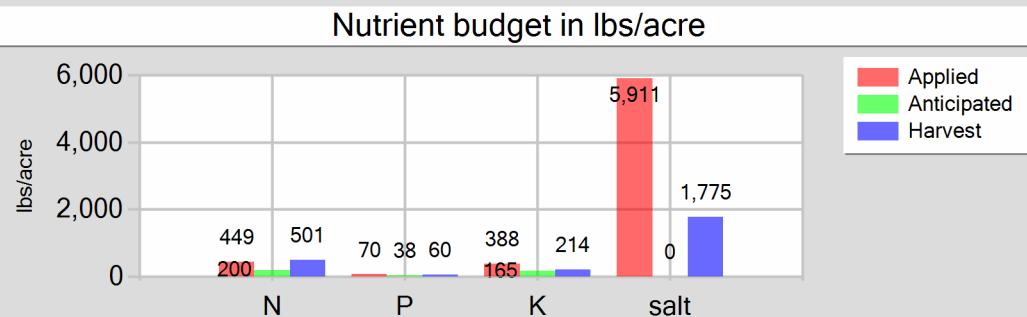
	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	7,720,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	284.30 acre-inches
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	7.90 inches/acre
Dry manure	281.64	79.10	357.51	7,673.65	
Process wastewater	60.46	11.53	52.48	282.89	686,000.00 gallons
Fresh water	2.15	0.00	0.00	136.00	25.26 acre-inches
Atmospheric deposition	7.00	0.00	0.00	0.00	0.70 inches/acre
Total nutrients applied	351.25	90.62	409.98	8,092.55	
Anticipated crop nutrient removal	132.00	20.40	99.60	0.00	
Actual crop nutrient removal	258.69	16.17	120.96	1,102.08	
Nutrient balance	92.56	74.46	289.02	6,990.47	
Applied to removed ratio	1.36	5.60	3.39	7.34	
Total harvests for the crop					1 harvests

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B4 - 05/11/2023: Corn, silage

Field name: B4      Crop: Corn, silage      Plant date: 05/11/2023



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	0.00	0.00	0.00	0.00
Dry manure	150.21	42.18	190.67	4,092.61
Process wastewater	280.10	27.35	197.82	1,095.32
Fresh water	11.42	0.00	0.00	723.01
Atmospheric deposition	7.00	0.00	0.00	0.00
Total nutrients applied	448.72	69.54	388.49	5,910.94
Anticipated crop nutrient removal	200.00	37.50	165.00	0.00
Actual crop nutrient removal	500.51	60.39	214.11	1,775.10
Nutrient balance	-51.78	9.15	174.38	4,135.84
Applied to removed ratio	0.90	1.15	1.81	3.33

**Fresh water applied**  
41,040,000.00 gallons  
1,511.36 acre-inches  
41.98 inches/acre

**Process wastewater applied**  
2,744,000.00 gallons  
101.05 acre-inches  
2.81 inches/acre

**Total harvests for the crop**  
1 harvests

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**NUTRIENT ANALYSES****A. MANURE ANALYSES****1st Half Corral Manure**Sample and source description: 1st Half Corral ManureSample date: 05/24/2023 Material type: Corral solids Source of analysis: Lab analysis Method of reporting: Dry-weightMoisture: 2.2 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulfur (mg/kg)	Chloride (mg/kg)	Total salt (mg/kg)	TFS (%)
Value	8,723.00	5,154.00	18,777.00							71.40
DL	500.00	100.00	200.00							0.67

**Corral Manure**Sample and source description: Corral ManureSample date: 10/13/2023 Material type: Corral solids Source of analysis: Lab analysis Method of reporting: Dry-weightMoisture: 8.1 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulfur (mg/kg)	Chloride (mg/kg)	Total salt (mg/kg)	TFS (%)
Value	18,388.00	5,164.00	23,341.00							50.10
DL	500.00	100.00	200.00							0.67

**B. PROCESS WASTEWATER ANALYSES****1st Qtr WW**Sample and source description: 1st Qtr WWSample date: 03/08/2023 Material type: Process wastewater Source of analysis: Lab analysis pH: 7.39

	Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC (µmhos/cm)	TDS (mg/L)
Value	380.00	134.60	0.00	0.21	72.50	330.00								2,781.00	1,779
DL	76.00	2.60	2.60	0.01	0.62	4.30								10.00	19

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**2nd Qtr WW**

Sample and source description: 2nd Qtr WW

Sample date: 05/24/2023 Material type: Process wastewater Source of analysis: Lab analysis pH: 7.60

	Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC (µmhos/cm)	TDS (mg/L)
<b>Value</b>	440.00	132.70	0.00	0.35	43.00	311.00								2,691.00	1,722
<b>DL</b>	76.00	2.60	2.60	0.01	0.62	4.30								10.00	19

**3rd Qtr WW**

Sample and source description: 3rd Qtr WW

Sample date: 08/16/2023 Material type: Process wastewater Source of analysis: Lab analysis pH: 7.53

	Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC (µmhos/cm)	TDS (mg/L)
<b>Value</b>	96.00	46.20	0.00	3.55	26.50	318.00								2,156.00	1,379
<b>DL</b>	76.00	2.60	2.60	0.01	0.62	4.30								10.00	19

**4th Qtr WW**

Sample and source description: 4th Qtr WW

Sample date: 10/13/2023 Material type: Process wastewater Source of analysis: Lab analysis pH: 7.44

	Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC (µmhos/cm)	TDS (mg/L)
<b>Value</b>	240.00	99.40	0.00	0.33	41.80	251.00								2,516.00	1,610
<b>DL</b>	76.00	2.60	2.60	0.01	0.62	4.30								10.00	19

**C. FRESH WATER ANALYSES**

**Canal 1**

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**Canal 1**

**Canal 1**

Sample description: Canal 1

Sample date: 09/15/2023 Source of analysis: Lab analysis

	Total N (mg/L)	NH4-N (mg/L)	Nitrate-N (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Bicarbonate (mg/L)	Carbonate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC (µmhos/cm)	TDS (mg/L)
Value	1.20	0.00	1.20								98.00	76
DL	1.00	0.10	0.23								10.00	19

**D. SOIL ANALYSES**

*No soil analyses entered.*

**E. PLANT TISSUE ANALYSES**

A4 - 01/24/2023: Bromegrass, forage

**Grass**

Sample and source description: Grass

Sample date: 08/01/2023 Source of analysis: Other/estimated Method of reporting: Dry-weight

Moisture: 29.0 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
Value	15,000.00	3,000.00	12,000.00		9.00
DL	10.00	100.00	200.00		0.67

B1 - 11/15/2022: Wheat, silage, soft dough

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B1 - 11/15/2022: Wheat, silage, soft dough

**Wheat**

Sample and source description: Wheat

Sample date: 04/28/2023 Source of analysis: Lab analysis Method of reporting: Dry-weight

Moisture: 64.2 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
<b>Value</b>	39,712.00	2,490.00	21,400.00		10.40
<b>DL</b>	10.00	100.00	200.00		0.67

B1 - 05/12/2023: Corn, silage

**Corn**

Sample and source description: Corn

Sample date: 08/24/2023 Source of analysis: Lab analysis Method of reporting: Dry-weight

Moisture: 65.1 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
<b>Value</b>	27,440.00	3,150.00	13,400.00		9.70
<b>DL</b>	10.00	100.00	200.00		0.67

B3 - 11/15/2022: Wheat, silage, soft dough

**Wheat**

Sample and source description: Wheat

Sample date: 04/28/2023 Source of analysis: Lab analysis Method of reporting: Dry-weight

Moisture: 65.4 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
<b>Value</b>	31,792.00	2,770.00	19,600.00		10.90
<b>DL</b>	10.00	100.00	200.00		0.67

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B3 - 05/12/2023: Corn, silage

**Corn**

Sample and source description: Corn

Sample date: 08/24/2023 Source of analysis: Lab analysis Method of reporting: Dry-weight

Moisture: 64.2 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
<b>Value</b>	27,470.00	3,420.00	12,000.00		9.40
<b>DL</b>	10.00	100.00	200.00		0.67

B4 - 11/15/2022: Wheat, silage, soft dough

**Wheat**

Sample and source description: Wheat

Sample date: 04/28/2023 Source of analysis: Lab analysis Method of reporting: Dry-weight

Moisture: 67.2 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
<b>Value</b>	32,862.00	2,054.00	15,366.00		14.00
<b>DL</b>	10.00	100.00	200.00		0.67

B4 - 05/11/2023: Corn, silage

**Corn**

Sample and source description: Corn

Sample date: 08/24/2023 Source of analysis: Lab analysis Method of reporting: Dry-weight

Moisture: 63.4 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
<b>Value</b>	27,350.00	3,300.00	11,700.00		9.70
<b>DL</b>	10.00	100.00	200.00		0.67

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**F. SUBSURFACE (TILE) DRAINAGE ANALYSES**

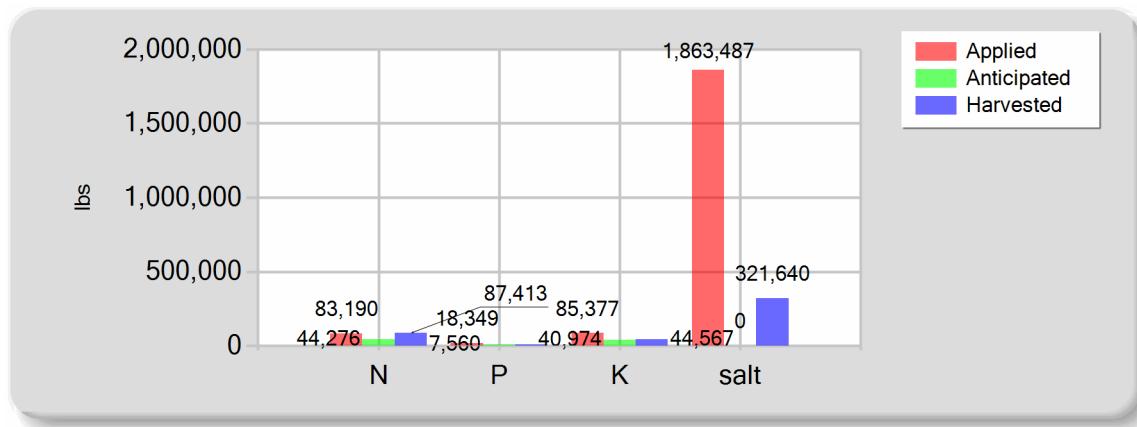
*No subsurface (tile) drainage analyses entered.*

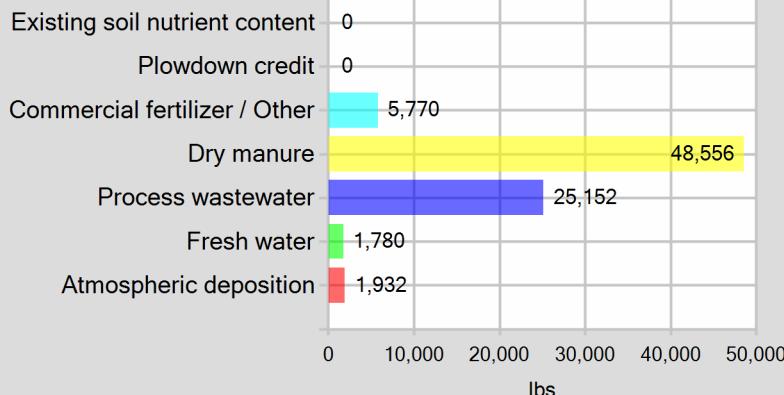
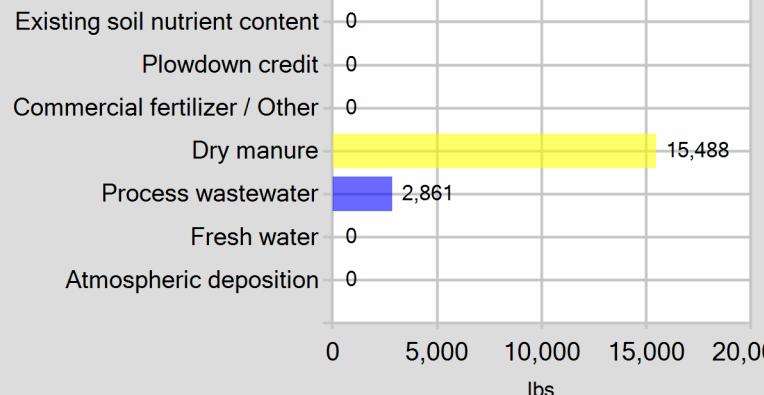
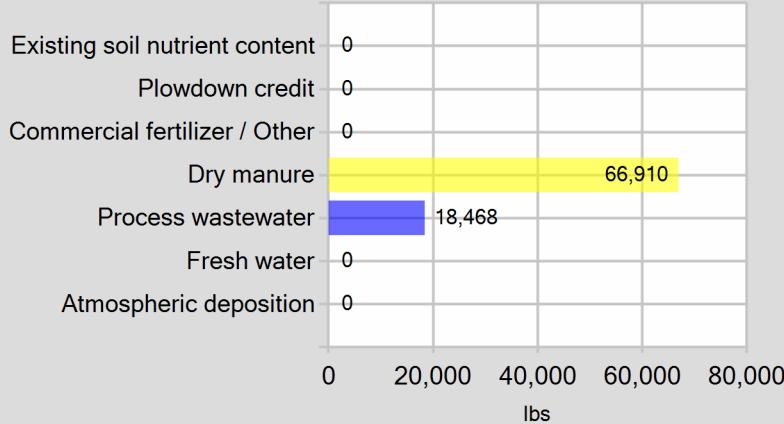
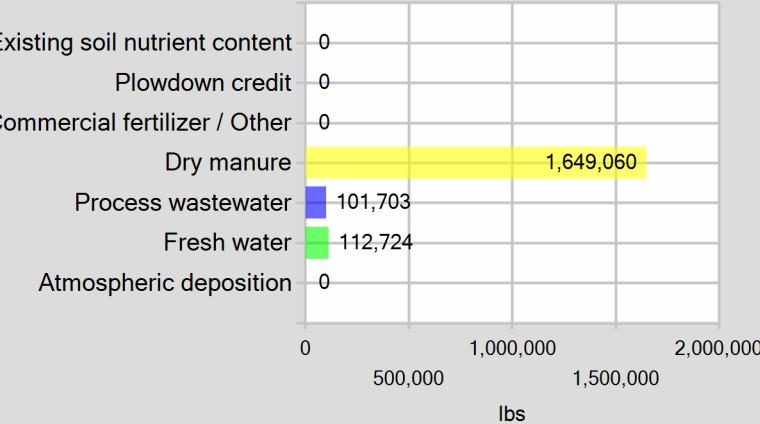
**Annual Report - General Order No. R5-2007-0035**

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**NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE****A. SUMMARY OF NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE**

	Total N (lbs)	Total P (lbs)	Total K (lbs)	Total salt (lbs)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	5,770.00	0.00	0.00	0.00
Dry manure	48,556.17	15,487.63	66,909.69	1,649,060.28
Process wastewater	25,152.07	2,861.08	18,467.65	101,703.09
Fresh water	1,779.85	0.00	0.00	112,723.73
Atmospheric deposition	1,932.00	0.00	0.00	0.00
Total nutrients applied	83,190.09	18,348.72	85,377.34	1,863,487.09
Anticipated crop nutrient removal	44,276.00	7,559.70	40,973.80	0.00
Actual crop nutrient removal	87,412.74	9,646.26	44,567.33	321,639.73
Nutrient balance	-4,222.65	8,702.46	40,810.01	1,541,847.36
Applied to removed ratio	0.95	1.90	1.92	5.79

**B. POUNDS OF NUTRIENT APPLIED VS. CROP REMOVAL**

**C. POUNDS OF NUTRIENT APPLIED BY MATERIAL TYPE****Pounds of nitrogen applied****Pounds of phosphorus applied****Pounds of potassium applied****Pounds of salt applied**

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**EXCEPTION REPORTING**

**A. MANURE, PROCESS WASTEWATER, AND OTHER DAIRY WASTE DISCHARGES**

The following is a summary of all manure and process 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.

*No manure or process wastewater discharges occurred during the reporting period.*

**B. STORM WATER DISCHARGES**

The following is a summary of all storm water discharges from the production area to surface water during the reporting period when not in accordance with the facility's Nutrient Management Plan.

*No stormwater discharges occurred during the reporting period.*

**C. LAND APPLICATION AREA TO SURFACE WATER DISCHARGES**

The following is a summary of all discharges from the land application area to surface water that have occurred during the reporting period when not in accordance with the facility's Nutrient Management Plan.

*No land application area to surface water discharges occurred during the reporting period.*

**NUTRIENT MANAGEMENT PLAN AND EXPORT AGREEMENT STATEMENTS**

**A. NUTRIENT MANAGEMENT PLAN STATEMENTS**

Was the facility's NMP updated in the reporting period? No

Was the facility's NMP developed by a certified nutrient management planner (specialist) as specified in Attachment C of the General Order? Yes

Was the facility's NMP approved by a certified nutrient management planner (specialist) as specified in Attachment C of the General Order? Yes

**B. EXPORT AGREEMENT STATEMENT**

Are there any written agreements with third parties to receive manure or process wastewater that are new or were revised within the reporting period? No

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**ADDITIONAL NOTES**

**A. NOTES**

Fresh water; only from canal, other wells not used for crop irrigation.

The bovine operation is combined with dairy. Some Bovines (non-dairy) are on pasture and are not counted in heifer totals for corrals.

The values for harvest lab results are higher than expected, sampling might have been non-homogenized.

Balance of fields did not receive wastewater or dry manure.

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**CERTIFICATION**

**A. OWNER AND/OR OPERATOR CERTIFICATION**

*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.*

---

SIGNATURE OF OWNER OF FACILITY

Ag Foundation of California State University, Fresno

PRINT OR TYPE NAME

---

SIGNATURE OF OPERATOR OF FACILITY

Vince Roos

PRINT OR TYPE NAME

---

DATE

---

DATE

**Annual Report - General Order No. R5-2007-0035**

*Reporting period 01/01/2023 to 12/31/2023.*

**ATTACHMENTS**

**A. REQUIRED ATTACHMENTS**

The following lists the required documents that should be attached to the Annual Report when submitted .

**Annual Dairy Facility Assessment**

Provide an Annual Dairy Facility Assessment (an update to the Preliminary Dairy Facility Assessment in Attachment A) for each reporting period. On the PDFA Final page, click on the ADFA Report button to generate an ADFA report after updating information as needed.

**Manure/Process Wastewater Tracking Manifests**

Provide copies of all manure/process wastewater tracking manifests for the reporting period, signed by both the owner/operator and the hauler.

**Corrective Actions Documents**

Provide records documenting any corrective actions taken to correct deficiencies noted as a result of the inspections required in the Monitoring Requirements of the General Order. Deficiencies not corrected in 30 days must be accompanied by an explanation of the factors preventing immediate correction.

**Groundwater Monitoring**

Dischargers that monitor supply wells or subsurface (tile) drainage systems, or that have monitoring well systems must submit monitoring results as directed in the General Order, Groundwater Reporting Section starting on page MRP-13.

**Storm Water Monitoring**

Dischargers that are required to monitor storm water more frequently than required in the General Order must submit monitoring results as directed in the General Order, Storm Water Reporting Section on page MRP-14.

**Annual Report - General Order No. R5-2007-0035**  
*Reporting period 01/01/2023 to 12/31/2023.*

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**Annual Report - General Order No. R5-2007-0035**  
*Reporting period 01/01/2023 to 12/31/2023.*

**DAIRY FACILITY INFORMATION**

**A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY:** CSUF Ag Foundation Dairy

Physical address of dairy:

5450 N Sierra Vista AVE  
Number and Street

Street and nearest cross street (if no address):

Date facility was originally placed in operation: 01/01/1981

Regional Water Quality Control Board Basin Plan designation: Tulare Basin

County Assessor Parcel Number(s) for dairy facility:  
0420-0020-0021-0000

**B. OPERATORS**

Ag Foundation of California State University, Fresno

Operator name: Ag Foundation of California State University, Fresno

2771 E Shaw AVE

Mailing Address Number and Street

**This operator is responsible for paying permit fees.**

Roos, Vince

Operator name: Roos, Vince

2385 E Barstow Ave., M/S AG85

Mailing Address Number and Street

Telephone no.: (559) 278-2011  
Landline      Cellular  
CA                93710

Fresno      County  
CA                93740

**C. OWNERS**

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*Reporting period 01/01/2023 to 12/31/2023.*

Ag Foundation of California State University, Fresno

Legal owner name: Ag Foundation of California State University, Fresno

2771 E Shaw Ave

Mailing Address Number and Street

**This owner is responsible for paying permit fees.**

Telephone no.: (559) 278-2011

Landline

Cellular

93710

State

Zip Code

Fresno

City

CA

State

Zip Code

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**AVAILABLE NUTRIENTS**

**A. HERD INFORMATION**

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo. to breeding)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number open confinement	0	37	75	57	26	18
Number under roof	160	0	0	0	0	0
Maximum number	170	39	77	59	28	22
Average number	160	37	75	57	26	18
Avg live weight (lbs)	1,150	1,200		475		
Predominant milk cow breed:	Holstein					
Average milk production:		65 pounds per cow per day				

**B. MANURE GENERATED**

Total manure excreted by the herd:	<u>5,916.57 tons per reporting period</u>
Total nitrogen from manure:	<u>73,960.95 lbs per reporting period</u>
Total phosphorus from manure:	<u>12,028.98 lbs per reporting period</u>
Total potassium from manure:	<u>30,115.88 lbs per reporting period</u>
Total salt from manure:	<u>83,844.15 lbs per reporting period</u>

**C. PROCESS WASTEWATER GENERATED**

Process wastewater generated:	<u>6,232,000 gallons</u>
Total nitrogen generated:	<u>22,212.30 lbs</u>
Total phosphorus generated:	<u>2,574.02 lbs</u>
Total potassium generated:	<u>16,391.42 lbs</u>
Total salt generated:	<u>90,207.01 lbs</u>

<i>6,232,000 gallons applied</i>
+ <i>0 gallons exported</i>
- <i>0 gallons imported</i>
= <i>6,232,000 gallons generated</i>

**D. FRESH WATER SOURCES**

Source Description	Type
Canal 1	Surface water

**E. SUBSURFACE (TILE) DRAINAGE SOURCES**

No subsurface (tile) drainage sources entered.

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**F. NUTRIENT IMPORTS**

No dry manure nutrient imports entered.

No process wastewater nutrient imports entered.

No commercial or other nutrient imports entered.

**G. NUTRIENT EXPORTS**

No solid nutrient exports entered.

No liquid nutrient exports entered.

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**APPLICATION AREA**

**A. LIST OF LAND APPLICATION AREAS**

Field name	Controlled acres	Cropable acres	Total harvests	Type of waste applied	Parcel number
A2	37	37	0	none	0410-0040-0005-0000
A3	37	37	0	none	0410-0040-0007-0000
A4	35	35	1	manure	0410-0040-0007-0000
B1	31	31	2	manure	0410-0040-0015-0000
B3	36	36	2	both	0410-0040-0017-0000
B4	36	36	2	both	0410-0040-0017-0000
B5	23	23	0	none	0410-0050-0027-0000
Totals for areas that were used for application	138	138	7		
Totals for areas that were not used for application	97	97	0		
Land application area totals	235	235	7		

**B. CROPS AND HARVESTS**

A4

Field name: A4

01/24/2023; Bromegrass, forage

Crop: Bromegrass, forage

Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
10/01/2023	350.00 ton	Dry-weight		29.0	15,000.00	3,000.00	12,000.00		9.00
Anticipated harvest content	Yield (tons/acre)	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)					
	8.00	288.00	45.60	392.00					
Total actual harvest content	10.00	213.00	42.60	170.40					

B1

Field name: B1

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B1

11/15/2022: Wheat, silage, soft dough

Crop: Wheat, silage, soft dough

						Acres planted: <u>31</u> Plant date: <u>11/15/2022</u>			
Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
04/28/2023	372.00	ton	Dry-weight	64.2	39,712.00	2,490.00	21,400.00		10.40
					Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)	
Anticipated harvest content	12.00				132.00	20.40	99.60	0.00	
Total actual harvest content	12.00				341.21	21.39	183.87	893.57	

05/12/2023: Corn, silage

						Acres planted: <u>31</u> Plant date: <u>05/12/2023</u>			
Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
08/24/2023	775.00	ton	Dry-weight	65.1	27,440.00	3,150.00	13,400.00		9.70
					Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)	
Anticipated harvest content	25.00				200.00	37.50	165.00	0.00	
Total actual harvest content	25.00				478.83	54.97	233.83	1,692.65	

B3

Field name: B3

11/15/2022: Wheat, silage, soft dough

Crop: Wheat, silage, soft dough

						Acres planted: <u>36</u> Plant date: <u>11/15/2022</u>			
Harvest date	Yield	Reporting basis	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	TFS (%)
04/28/2023	432.00	ton	Dry-weight	65.4	31,792.00	2,770.00	19,600.00		10.90
					Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)	
Anticipated harvest content	12.00				132.00	20.40	99.60	0.00	
Total actual harvest content	12.00				264.00	23.00	162.76	905.14	

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B3

05/12/2023: Corn, silage

Crop: Corn, silage

Harvest date	Yield 900.00 ton	Reporting basis Dry-weight	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	Acres planted:	36	Plant date: 05/12/2023
08/24/2023				64.2	27,470.00	3,420.00	12,000.00				9.40
					Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)			
	Anticipated harvest content	25.00	200.00		37.50	165.00	0.00				
	Total actual harvest content	25.00	491.71	61.22		214.80	1,682.60				

B4

Field name: B4

11/15/2022: Wheat, silage, soft dough

Crop: Wheat, silage, soft dough

Harvest date	Yield 432.00 ton	Reporting basis Dry-weight	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	Acres planted:	36	Plant date: 11/15/2022
04/28/2023				67.2	32,862.00	2,054.00	15,366.00				14.00
					Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)			
	Anticipated harvest content	12.00	132.00		20.40	99.60	0.00				
	Total actual harvest content	12.00	258.69	16.17		120.96	1,102.08				

05/11/2023: Corn, silage

Crop: Corn, silage

Harvest date	Yield 900.00 ton	Reporting basis Dry-weight	Density (lbs/cu ft)	Moisture (%)	N (mg/kg)	P (mg/kg)	K (mg/kg)	Salt (mg/kg)	Acres planted:	36	Plant date: 05/11/2023
08/24/2023				63.4	27,350.00	3,300.00	11,700.00				9.70
					Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Salt (lbs/acre)			
	Anticipated harvest content	25.00	200.00		37.50	165.00	0.00				
	Total actual harvest content	25.00	500.51	60.39		214.11	1,775.10				

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**NUTRIENT BUDGET**

**A. LAND APPLICATIONS**

A4 - 01/24/2023: Bromegrass, forage

Field name: A4

Crop: Bromegrass, forage

		Crop: Bromegrass, forage				Plant date: 01/24/2023					
		Application date		Application method		Precipitation 24 hours prior		Precipitation during application		Precipitation 24 hours following	
						No precipitation		No precipitation		No precipitation	
Source description		Material type				N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount	Amount
Dry Manure		Corral solids				170.62	100.81	367.28	13,965.84	350.00 ton	
Application event totals						170.62	100.81	367.28	13,965.84		
01/29/2023	Surface (irrigation)	No precipitation								No precipitation	
Source description		Material type				N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount	Amount
Canal 1		Surface water				0.62	0.00	0.00	0.00	39.14	2,160,000.00 gal
Application event totals						0.62	0.00	0.00	0.00	39.14	
04/27/2023	Surface (irrigation)	No precipitation								No precipitation	
Source description		Material type				N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount	Amount
Canal 1		Surface water				1.24	0.00	0.00	0.00	78.28	4,320,000.00 gal
Application event totals						1.24	0.00	0.00	0.00	78.28	
05/29/2023	Surface (irrigation)	No precipitation								No precipitation	
Source description		Material type				N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount	Amount
Canal 1		Surface water				1.85	0.00	0.00	0.00	117.42	6,480,000.00 gal
Application event totals						1.85	0.00	0.00	0.00	117.42	
06/25/2023	Surface (irrigation)	No precipitation								No precipitation	
Source description		Material type				N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount	Amount
Canal 1		Surface water				1.85	0.00	0.00	0.00	117.42	6,480,000.00 gal
Application event totals						1.85	0.00	0.00	0.00	117.42	

**Annual Report - General Order No. R5-2007-0035**

Reporting period 01/01/2023 to 12/31/2023.

A4 - 01/24/2023: Bromegrass, forage

Source description	Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
			No precipitation			No precipitation			No precipitation		
Canal 1	07/12/2023	Surface (irrigation)	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount
Application event totals			Surface water	1.85	0.00	0.00	0.00	117.42	6,480,000.00 gal		
08/01/2023	08/01/2023	Surface (irrigation)	No precipitation					117.42			
Source description			Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount
Canal 1			Surface water	1.85	0.00	0.00	0.00	117.42	6,480,000.00 gal		
Application event totals				1.85	0.00	0.00	0.00	117.42			
09/01/2023	09/01/2023	Surface (irrigation)	No precipitation								
Source description			Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount
Canal 1			Surface water	1.85	0.00	0.00	0.00	117.42	6,480,000.00 gal		
Application event totals				1.85	0.00	0.00	0.00	117.42			

B1 - 11/15/2022: Wheat, silage, soft dough

Source description	Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
			No precipitation			No precipitation			No precipitation		
Dry Manure	10/15/2022	Broadcast/incorporate	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount
Application event totals			Corral solids	272.56	76.54	345.97	7,426.11				250.00 ton
10/28/2022	10/28/2022	Surface (irrigation)	No precipitation					7,426.11			
Source description			Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount
Canal 1			Surface water	0.28	0.00	0.00	0.00	17.68	864,000.00 gal		
Application event totals				0.28	0.00	0.00	0.00	17.68			

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B1 - 11/15/2022: Wheat, silage, soft dough

Application date		Application method		Precipitation 24 hours prior		Precipitation during application		Precipitation 24 hours following	
				No precipitation				No precipitation	
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			0.28	0.00	0.00	17.68			
11/25/2022	Surface (irrigation)	No precipitation		No precipitation		No precipitation			
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			0.28	0.00	0.00	17.68			
12/09/2022	Surface (irrigation)	No precipitation		No precipitation		No precipitation			
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
UN 32	Liquid commercial fertilizer	Surface water	70.00	0.00	0.00	0.00	0.00		
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			70.28	0.00	0.00	17.68			
12/23/2022	Surface (irrigation)	No precipitation		No precipitation		No precipitation			
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			0.28	0.00	0.00	17.68			
01/06/2023	Surface (irrigation)	No precipitation		No precipitation		No precipitation			
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			0.28	0.00	0.00	17.68			
01/20/2023	Surface (irrigation)	No precipitation		No precipitation		No precipitation			
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			0.28	0.00	0.00	17.68			
01/20/2023	Surface (irrigation)	No precipitation		No precipitation		No precipitation			
Source description		Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)		Amount	
Canal 1	Surface water	Surface water	0.28	0.00	0.00	17.68	864,000.00 gal		
Application event totals			0.28	0.00	0.00	17.68			

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B1 - 05/12/2023: Corn, silage

Field name:		B1	Crop:		Corn, silage	Plant date:		05/12/2023
Application date	Application method		Precipitation 24 hours prior		Precipitation during application		Precipitation 24 hours following	
05/02/2023	Broadcast/incorporate	No precipitation	No precipitation		No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)			Amount
Dry Manure	Corral solids	272.56	76.54	345.97	7,426.11			250.00 ton
Application event totals		272.56	76.54	345.97	7,426.11			
05/10/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)			Amount
Canal 1	Surface water	0.56	0.00	0.00	0.00			35.35
Application event totals		0.56	0.00	0.00	0.00			35.35
05/19/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)			Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00			70.71
Application event totals		1.12	0.00	0.00	0.00			70.71
05/29/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)			Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00			3,456,000.00 gal
Application event totals		1.12	0.00	0.00	0.00			
06/08/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)			Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00			3,456,000.00 gal
Application event totals		1.12	0.00	0.00	0.00			
06/17/2023	Surface (irrigation)	No precipitation	No precipitation		No precipitation		No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)			Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00			3,456,000.00 gal
Application event totals		1.12	0.00	0.00	0.00			

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B1 - 05/12/2023: Corn, silage

Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
		No precipitation			No precipitation			No precipitation		
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00	70.71	1.12	0.00	0.00	3,456,000.00 gal
07/07/2023	Surface (irrigation)	No precipitation	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00	70.71	1.12	0.00	0.00	3,456,000.00 gal
Application event totals										
07/17/2023	Surface (irrigation)	No precipitation	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.67	0.00	0.00	0.00	106.06	1.67	0.00	0.00	5,184,000.00 gal
Application event totals										
07/27/2023	Surface (irrigation)	No precipitation	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.67	0.00	0.00	0.00	106.06	1.67	0.00	0.00	5,184,000.00 gal
Application event totals										
08/07/2023	Surface (irrigation)	No precipitation	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)	Amount
Canal 1	Surface water	1.12	0.00	0.00	0.00	70.71	1.12	0.00	0.00	3,456,000.00 gal
Application event totals										
<b>B3 - 11/15/2022: Wheat, silage, soft dough</b>										
Field name:	B3	Plant date: 11/15/2022			Precipitation 24 hours following					
Crop:	Wheat, silage, soft dough	Precipitation during application			Precipitation 24 hours following					
Application date	Application method									

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B3 - 11/15/2022: Wheat, silage, soft dough

Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
		No precipitation			No precipitation			No precipitation		
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Dry Manure	Corral solids	187.76	52.73	238.34	5,115.77					200.00 ton
Application event totals		187.76	52.73	238.34	5,115.77					
11/17/2022	Surface (irrigation)	No precipitation								
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Canal 1	Surface water	1.27	0.00	0.00	80.33					4,560,000.00 gal
Application event totals		1.27	0.00	0.00	80.33					
01/30/2023	Surface (irrigation)	No precipitation								
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Wastewater	Process wastewater	60.46	11.53	52.48	282.89					686,000.00 gal
Canal 1	Surface water	0.60	0.00	0.00	38.05					2,160,000.00 gal
Application event totals		61.06	11.53	52.48	320.95					

B3 - 05/12/2023: Corn, silage

Field name:	Crop:	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
		No precipitation			No precipitation			No precipitation		
Application date	Application method									
05/18/2023	Surface (irrigation)									
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Wastewater	Process wastewater	99.22	9.69	70.07	387.99					972,000.00 gal
Canal 1	Surface water	1.20	0.00	0.00	76.11					4,320,000.00 gal
Application event totals		100.42	9.69	70.07	464.10					

Plant date: 05/12/2023

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B3 - 05/12/2023: Corn, silage

Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
		No precipitation			No precipitation			No precipitation		
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount	
Wastewater	Process wastewater	198.43	19.38	140.15	775.98	1,944,000.00 gal				
	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal				
Canal 1		200.84	19.38	140.15	928.20					
Application event totals										
06/28/2023	Surface (irrigation)									
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount	
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal				
Application event totals		2.40	0.00	0.00	152.21					
07/14/2023	Surface (irrigation)									
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount	
Canal 1	Surface water	3.00	0.00	0.00	190.27	10,800,000.00 gal				
Application event totals		3.00	0.00	0.00	190.27					
08/04/2023	Surface (irrigation)									
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount	
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal				
Application event totals		2.40	0.00	0.00	152.21					

B4 - 11/15/2022: Wheat, silage, soft dough

Field name: B4

Crop: Wheat, silage, soft dough

Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
		No precipitation			No precipitation			No precipitation		
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)				Amount	
11/06/2022	Broadcast/incorporate									
Source description	Corral solids	187.76	52.73	238.34	5,115.77					
Dry Manure		187.76	52.73	238.34	5,115.77					
Application event totals									200.00 ton	

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B4 - 11/15/2022: Wheat, silage, soft dough

Application date		Application method		Precipitation 24 hours prior		Precipitation during application		Precipitation 24 hours following	
				No precipitation				No precipitation	
Source description		Material type		N (lbs/acre)		P (lbs/acre)		K (lbs/acre)	
Canal 1		Surface water		1.27		0.00		Salt (lbs/acre)	
Application event totals				1.27		0.00		80.33	
01/27/2023		Surface (irrigation)		No precipitation				4,560,000.00 gal	
Source description		Material type		N (lbs/acre)		P (lbs/acre)		K (lbs/acre)	
Wastewater		Process wastewater		60.46		11.53		Salt (lbs/acre)	
Canal 1		Surface water		0.60		0.00		282.89	
Application event totals				61.06		11.53		38.05	
								686,000.00 gal	
								2,160,000.00 gal	
								320.95	

B4 - 05/11/2023: Corn, silage

Application date		Application method		Precipitation 24 hours prior		Precipitation during application		Precipitation 24 hours following	
				No precipitation				No precipitation	
Source description		Material type		N (lbs/acre)		P (lbs/acre)		K (lbs/acre)	
Dry Manure		Corral solids		150.21		42.18		Salt (lbs/acre)	
Application event totals				150.21		42.18		190.67	
05/20/2023		Surface (irrigation)		No precipitation				4,092.61	
Source description		Material type		N (lbs/acre)		P (lbs/acre)		K (lbs/acre)	
Canal 1		Surface water		1.80		0.00		Salt (lbs/acre)	
Application event totals				1.80		0.00		0.00	
06/04/2023		Surface (irrigation)		No precipitation				114.16	
Source description		Material type		N (lbs/acre)		P (lbs/acre)		K (lbs/acre)	
Canal 1		Surface water		2.40		0.00		Salt (lbs/acre)	
Application event totals				2.40		0.00		0.00	
								152.21	
								6,480,000.00 gal	
								8,640,000.00 gal	
								152.21	

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B4 - 05/11/2023; Corn, silage

Application date	Application method	Precipitation 24 hours prior			Precipitation during application			Precipitation 24 hours following		
		No precipitation		No precipitation	No precipitation		No precipitation	No precipitation		No precipitation
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Wastewater	Process wastewater	198.43	19.38	140.15	775.98	1,944,000.00 gal/				
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal/				
Application event totals		200.84	19.38	140.15	928.20					
07/18/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal/				
Application event totals		2.40	0.00	0.00	152.21					
08/07/2023	Surface (irrigation)	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	No precipitation	
Source description	Material type	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Salt (lbs/acre)					Amount
Canal 1	Surface water	2.40	0.00	0.00	152.21	8,640,000.00 gal/				
Application event totals		2.40	0.00	0.00	152.21					

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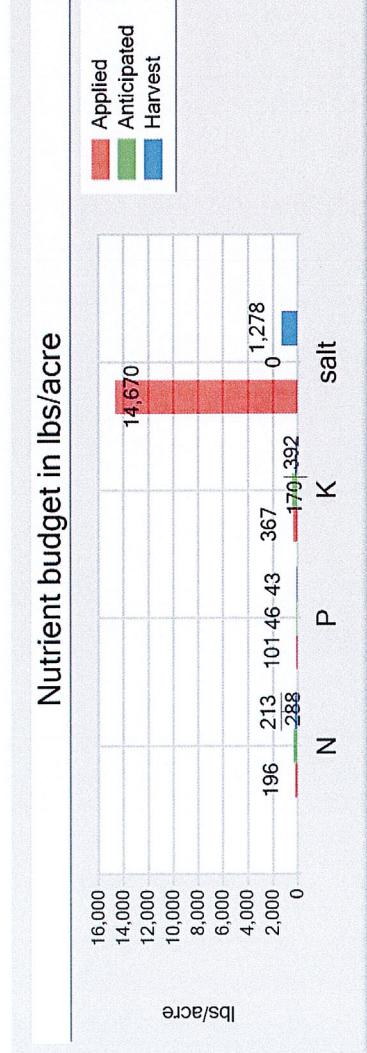
**B. NUTRIENT BUDGET**

A4 - 01/24/2023: Bromegrass, forage

Field name: A4

Plant date: 01/24/2023

Crop: Bromegrass, forage



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	0.00	38,880,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	0.00	1,431.82 acre-inches
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	0.00	40.91 inches/acre
Dry manure	170.62	100.81	367.28	13,965.84	13,965.84	
Process wastewater	0.00	0.00	0.00	0.00	0.00	Process wastewater applied
Fresh water	11.12	0.00	0.00	704.53	704.53	0.00 gallons
Atmospheric deposition	14.00	0.00	0.00	0.00	0.00	0.00 acre-inches
Total nutrients applied	195.75	100.81	367.28	14,670.37	14,670.37	0.00 inches/acre
Anticipated crop nutrient removal	288.00	45.60	392.00	0.00	0.00	
Actual crop nutrient removal	213.00	42.60	170.40	1,278.00	1,278.00	Total harvests for the crop
Nutrient balance	-17.25	58.21	196.88	13,392.37	13,392.37	1 harvests
Applied to removed ratio	0.92	2.37	2.16	11.48	11.48	

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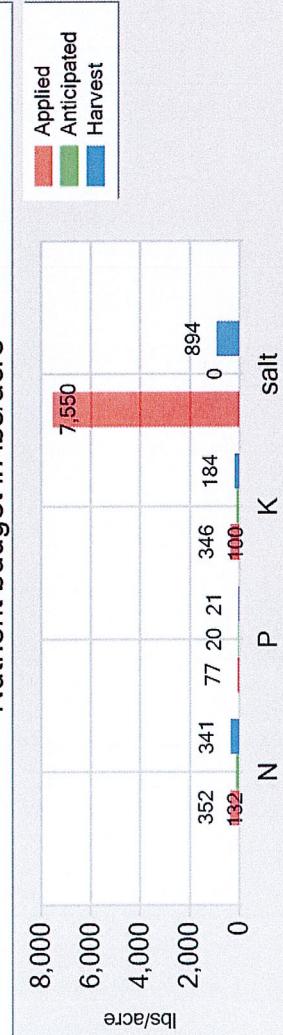
B1 - 11/15/2022: Wheat, silage, soft dough

Field name: B1

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022

**Nutrient budget in lbs/acre**



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	0.00	0,048,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	0.00	222.73 acre-inches
Commercial fertilizer / Other	70.00	0.00	0.00	0.00	0.00	7.18 inches/acre
Dry manure	272.56	76.54	345.97	7,426.11	7,426.11	
Process wastewater	0.00	0.00	0.00	0.00	0.00	Process wastewater applied
Fresh water	1.95	0.00	0.00	0.00	0.00	123.73 0.00 gallons
Atmospheric deposition	7.00	0.00	0.00	0.00	0.00	0.00 acre-inches
Total nutrients applied	351.51	76.54	345.97	7,549.85	7,549.85	
Anticipated crop nutrient removal	132.00	20.40	99.60	0.00	0.00	0.00 inches/acre
Actual crop nutrient removal	341.21	21.39	183.87	893.57	893.57	Total harvests for the crop
Nutrient balance	10.31	55.15	162.11	6,656.28	6,656.28	1 harvests
Applied to removed ratio	1.03	3.58	1.88	8.45	8.45	

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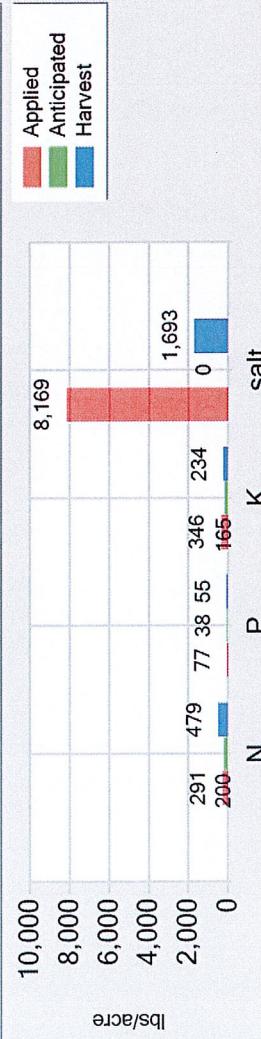
B1 - 05/12/2023: Corn, silage

Field name: B1

Crop: Corn, silage

Plant date: 05/12/2023

### Nutrient budget in lbs/acre



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	-	0.00	36,288,000.00 gallons
Plowdown credit	0.00	0.00	0.00	-	0.00	1,336.36 acre-inches
Commercial fertilizer / Other	0.00	0.00	0.00	-	0.00	43.11 inches/acre
Dry manure	272.56	76.54	345.97	-	7,426.11	
Process wastewater	0.00	0.00	0.00	-	0.00	
Fresh water	11.72	0.00	0.00	-	742.41	0.00 gallons
Atmospheric deposition	7.00	0.00	0.00	-	0.00	0.00 acre-inches
Total nutrients applied	291.28	76.54	345.97	8,168.52		
Anticipated crop nutrient removal	200.00	37.50	165.00	0.00		
Actual crop nutrient removal	478.83	54.97	233.83	1,692.65		
Nutrient balance	-187.55	21.58	112.14	6,475.87		
Applied to removed ratio	0.61	1.39	1.48	4.83		
Total harvests for the crop				1 harvests		

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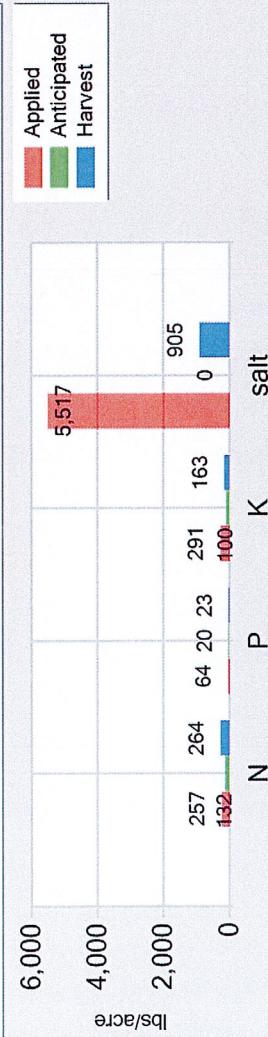
B3 - 11/15/2022: Wheat, silage, soft dough

Field name: B3

Crop: Vwheat, silage, soft dough

Plant date: 11/15/2022

Nutrient budget in lbs/acre



Total N (lbs/acre)      Total P (lbs/acre)      Total K (lbs/acre)      Total salt (lbs/acre)

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	0.00
Dry manure	187.76	52.73	238.34	5,115.77	6,720,000.00 gallons 247.47 acre-inches 6.87 inches/acre
Process wastewater	60.46	11.53	52.48	282.89	686,000.00 gallons 25.26 acre-inches
Fresh water	1.87	0.00	0.00	118.39	0.70 inches/acre
Atmospheric deposition	7.00	0.00	0.00	0.00	Total harvests for the crop 1 harvests
Total nutrients applied	257.09	64.26	290.81	5,517.05	4,611.91 6.10
Anticipated crop nutrient removal	132.00	20.40	99.60	0.00	
Actual crop nutrient removal	264.00	23.00	162.76	905.14	
Nutrient balance	-6.91	41.26	128.06		
Applied to removed ratio	0.97	2.79	1.79		

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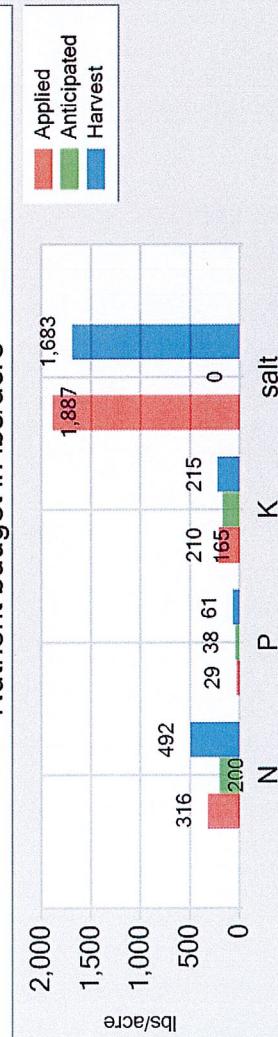
B3 - 05/12/2023: Corn, silage

Field name: B3

Crop: Corn, silage

Plant date: 05/12/2023

### Nutrient budget in lbs/acre



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Total salt (lbs/acre)
Existing soil nutrient content	0.00	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	0.00
Dry manure	0.00	0.00	0.00	0.00	0.00
Process wastewater	29.65	29.07	210.22	1,163.98	
Fresh water	11.42	0.00	0.00	723.01	41,040,000.00 gallons
Atmospheric deposition	7.00	0.00	0.00	0.00	1,511.36 acre-inches
Total nutrients applied	316.07	29.07	210.22	1,886.99	41.98 inches/acre
Anticipated crop nutrient removal	200.00	37.50	165.00	0.00	107.39 acre-inches
Actual crop nutrient removal	491.71	61.22	214.80	1,682.60	Total harvests for the crop
Nutrient balance	-175.64	-32.15	-4.58	204.39	1 harvests
Applied to removed ratio	0.64	0.47	0.98	1.12	

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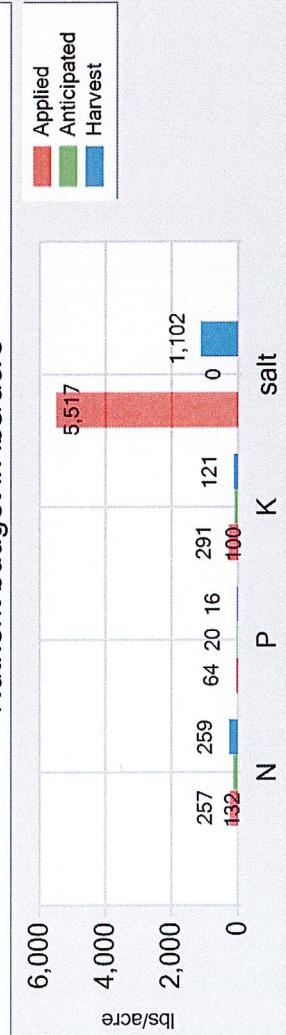
B4 - 11/15/2022: Wheat, silage, soft dough

Field name: B4

Crop: Wheat, silage, soft dough

Plant date: 11/15/2022

### Nutrient budget in lbs/acre



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	0.00	6,720,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	0.00	247.47 acre-inches
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	0.00	6.87 inches/acre
Dry manure	187.76	52.73	238.34	5,115.77	5,115.77	
Process wastewater	60.46	11.53	52.48	282.89	282.89	
Fresh water	1.87	0.00	0.00	118.39	118.39	686,000.00 gallons
Atmospheric deposition	7.00	0.00	0.00	0.00	0.00	25.26 acre-inches
Total nutrients applied	257.09	64.26	290.81	5,517.05	5,517.05	
Anticipated crop nutrient removal	132.00	20.40	99.60	0.00	0.00	0.70 inches/acre
Actual crop nutrient removal	258.69	16.17	120.96	1,102.08	1,102.08	Total harvests for the crop
Nutrient balance	-1.60	48.09	169.85	4,414.97	4,414.97	1 harvests
Applied to removed ratio	0.99	3.97	2.40	5.01	5.01	

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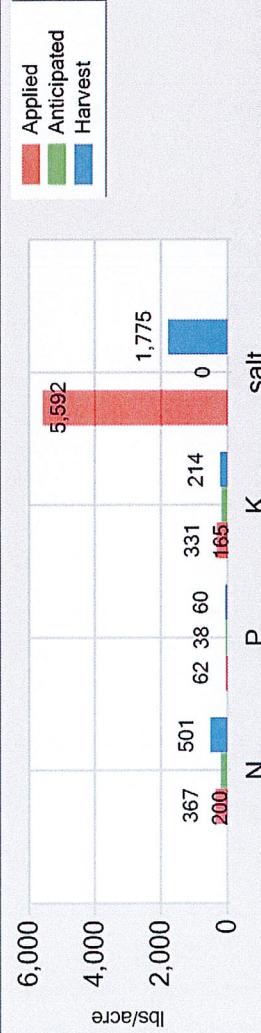
B4 - 05/11/2023: Corn, silage

Field name: B4

Crop: Corn, silage

Plant date: 05/11/2023

### Nutrient budget in lbs/acre



	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)	Total salt (lbs/acre)	Total salt (lbs/acre)	Fresh water applied
Existing soil nutrient content	0.00	0.00	0.00	0.00	0.00	41,040,000.00 gallons
Plowdown credit	0.00	0.00	0.00	0.00	0.00	1,511.36 acre-inches
Commercial fertilizer / Other	0.00	0.00	0.00	0.00	0.00	41.98 inches/acre
Dry manure	150.21	42.18	190.67	4,092.61	4,092.61	
Process wastewater	198.43	19.38	140.15	775.98	775.98	
Fresh water	11.42	0.00	0.00	723.01	723.01	1,944,000.00 gallons
Atmospheric deposition	7.00	0.00	0.00	0.00	0.00	71.59 acre-inches
Total nutrients applied	367.06	61.56	330.82	5,591.61	5,591.61	
Anticipated crop nutrient removal	200.00	37.50	165.00	0.00	0.00	1.99 inches/acre
Actual crop nutrient removal	500.51	60.39	214.11	1,775.10	1,775.10	Total harvests for the crop
Nutrient balance	-133.44	1.17	116.71	3,816.51	3,816.51	1 harvests
Applied to removed ratio	0.73	1.02	1.55	3.15	3.15	

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**NUTRIENT ANALYSES**

**A. MANURE ANALYSES**

**1st Half Corral Manure**

Sample and source description: 1st Half Corral Manure

Sample date: 05/24/2023 Material type: Corral solids

Moisture: 2.2 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulfur (mg/kg)	Chloride (mg/kg)	Total salt (mg/kg)	TFS (%)	Method of reporting: Dry-weight
Value	8,723.00	5,154.00	18,777.00	200.00						71.40	
DL	500.00	100.00								0.67	

**Corral Manure**

Sample and source description: Corral Manure

Sample date: 10/13/2023 Material type: Corral solids

Moisture: 8.1 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sulfur (mg/kg)	Chloride (mg/kg)	Total salt (mg/kg)	TFS (%)	Method of reporting: Dry-weight
Value	18,388.00	5,164.00	23,341.00	200.00						50.10	
DL	500.00	100.00								0.67	

**B. PROCESS WASTEWATER ANALYSES**

**1st Qtr WW**

Sample and source description: 1st Qtr WW

Sample date: 03/08/2023 Material type: Process wastewater

	Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC (µmhos/cm)	TDS (mg/L)
Value	380.00	134.60	0.00	0.21	72.50	330.00						2,781.00	1,779		
DL	76.00	2.60	2.60	0.01	0.62	4.30						10.00	19		

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2nd Qtr WW

Sample and source description: 2nd Qtr WW

Sample date:	05/24/2023	Material type:	Process wastewater	Source of analysis: Lab analysis						pH:	7.60	
Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)
Value	440.00	132.70	0.00	0.35	43.00	311.00						
DL	76.00	2.60	0.01	0.62	4.30							

3rd Qtr WW

Sample and source description: 3rd Qtr WW

Sample date:	08/16/2023	Material type:	Process wastewater	Source of analysis: Lab analysis						pH:	7.53	
Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)
Value	96.00	46.20	0.00	3.55	26.50	318.00						
DL	76.00	2.60	0.01	0.62	4.30							

4th Qtr WW

Sample and source description: 4th Qtr WW

Sample date:	10/13/2023	Material type:	Process wastewater	Source of analysis: Lab analysis						pH:	7.44	
Kjeldahl-N (mg/L)	NH4-N (mg/L)	NH3-N (mg/L)	Nitrate-N (mg/L)	Total P (mg/L)	Total K (mg/L)	Calcium (mg/L)	Magnes. (mg/L)	Sodium (mg/L)	Bicarb. (mg/L)	Carb. (mg/L)	Sulfate (mg/L)	Chloride (mg/L)
Value	240.00	99.40	0.00	0.33	41.80	251.00						
DL	76.00	2.60	0.01	0.62	4.30							

### C. FRESH WATER ANALYSES

Canal 1

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Canal 1

Canal 1

Sample description: Canal 1

Sample date: 09/15/2023

Source of analysis: Lab analysis

	Total N (mg/L)	NH4-N (mg/L)	Nitrate-N (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Bicarbonate (mg/L)	Carbonate (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	EC ( $\mu$ hos/cm)	TDS (mg/L)
Value	1.20	0.00	1.20								98.00	76
DL	1.00	0.10	0.23								10.00	19

**D. SOIL ANALYSES**

No soil analyses entered.

**E. PLANT TISSUE ANALYSES**

A4 - 01/24/2023: Bromegrass, forage

Grass

Sample and source description: Grass

Sample date: 08/01/2023

Source of analysis: Other/estimated

Moisture: 29.0 %

	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
Value	15,000.00	3,000.00	12,000.00		9.00
DL	10.00	100.00	200.00		0.67

B1 - 11/15/2022: Wheat, silage, soft dough

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B1 - 11/15/2022: Wheat, silage, soft dough

Wheat

Sample and source description: Wheat

Sample date: 04/28/2023  
Moisture: 64.2 %

Value	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
DL	39,712.00	2,490.00	21,400.00		10.40

B1 - 05/12/2023: Corn, silage

Corn

Sample and source description: Corn

Sample date: 08/24/2023  
Moisture: 65.1 %

Value	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
DL	27,440.00	3,150.00	13,400.00		9.70

B3 - 11/15/2022: Wheat, silage, soft dough

Wheat

Sample and source description: Wheat

Sample date: 04/28/2023  
Moisture: 65.4 %

Value	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg)	Total salt (mg/kg)	TFS (%)
DL	31,792.00	2,770.00	19,600.00		10.90

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B3 - 05/12/2023: Corn, silage

Corn

Sample and source description:		Corn		Method of reporting: Dry-weight
Sample date:	08/24/2023	Source of analysis:	Lab analysis	
Moisture:	64.2 %	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg) Total salt (mg/kg) TFS (%)
Value	27,470.00	3,420.00	12,000.00	9.40
DL	10.00	100.00	200.00	0.67

B4 - 11/15/2022: Wheat, silage, soft dough

Wheat

Sample and source description:		Wheat		Method of reporting: Dry-weight
Sample date:	04/28/2023	Source of analysis:	Lab analysis	
Moisture:	67.2 %	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg) Total salt (mg/kg) TFS (%)
Value	32,862.00	2,054.00	15,366.00	14.00
DL	10.00	100.00	200.00	0.67

B4 - 05/11/2023: Corn, silage

Corn

Sample and source description:		Corn		Method of reporting: Dry-weight
Sample date:	08/24/2023	Source of analysis:	Lab analysis	
Moisture:	63.4 %	Total N (mg/kg)	Total P (mg/kg)	Total K (mg/kg) Total salt (mg/kg) TFS (%)
Value	27,350.00	3,300.00	11,700.00	9.70
DL	10.00	100.00	200.00	0.67

**F. SUBSURFACE (TILE) DRAINAGE ANALYSES**

No subsurface (tile) drainage analyses entered.

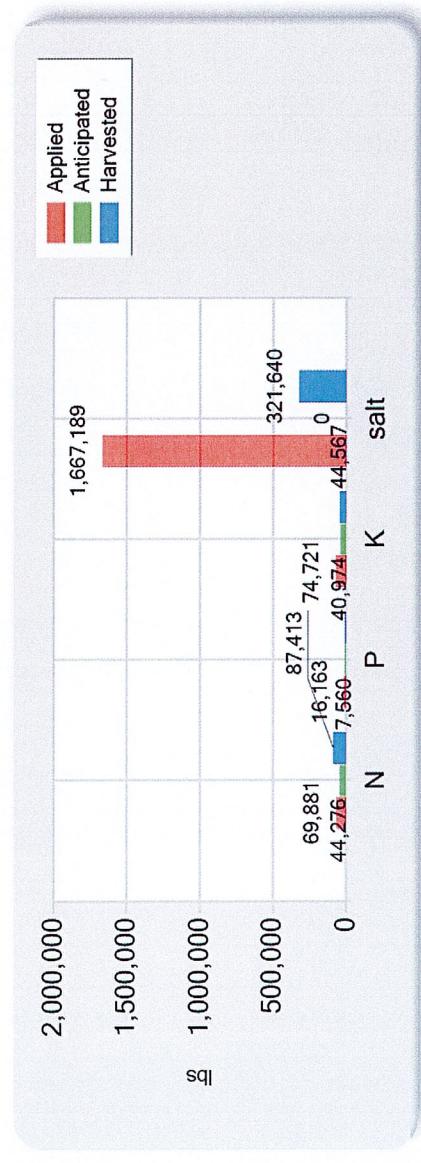
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NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE

A. SUMMARY OF NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE

	Total N (lbs)	Total P (lbs)	Total K (lbs)	Total salt (lbs)
Existing soil nutrient content	0.00	0.00	0.00	0.00
Plowdown credit	0.00	0.00	0.00	0.00
Commercial fertilizer / Other	2,170.00	0.00	0.00	0.00
Dry manure	41,796.74	13,589.35	58,329.54	1,464,892.68
Process wastewater	22,212.30	2,574.02	16,391.42	90,207.01
Fresh water	1,769.83	0.00	0.00	112,089.51
Atmospheric deposition	1,932.00	0.00	0.00	0.00
Total nutrients applied	69,880.87	16,163.36	74,720.95	1,667,189.20
Anticipated crop nutrient removal	44,276.00	7,559.70	40,973.80	0.00
Actual crop nutrient removal	87,412.74	9,646.26	44,567.33	321,639.73
Nutrient balance	-17,531.87	6,517.10	30,153.63	1,345,549.47
Applied to removed ratio	0.80	1.68	1.68	5.18

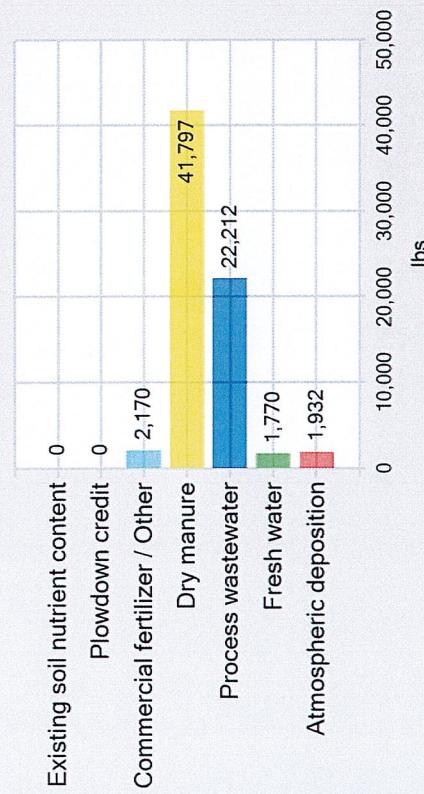
B. POUNDS OF NUTRIENT APPLIED VS. CROP REMOVAL



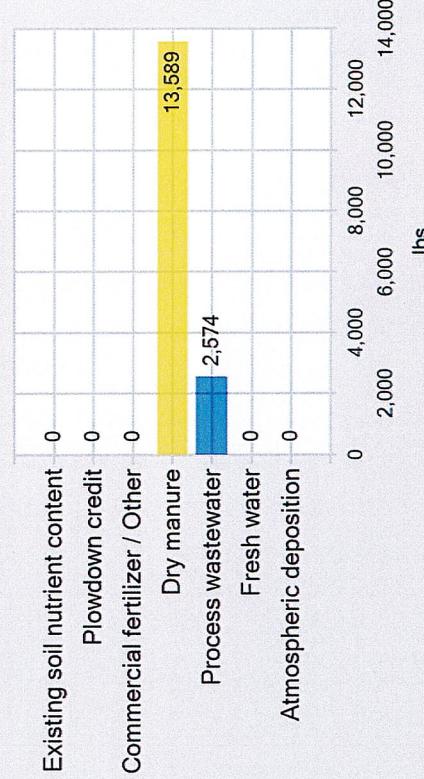
Annual Report - General Order No. R5-2007-0035  
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C. POUNDS OF NUTRIENT APPLIED BY MATERIAL TYPE

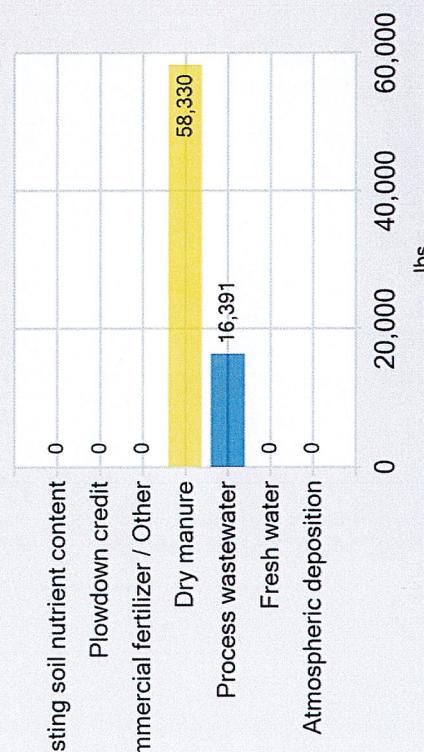
Pounds of nitrogen applied



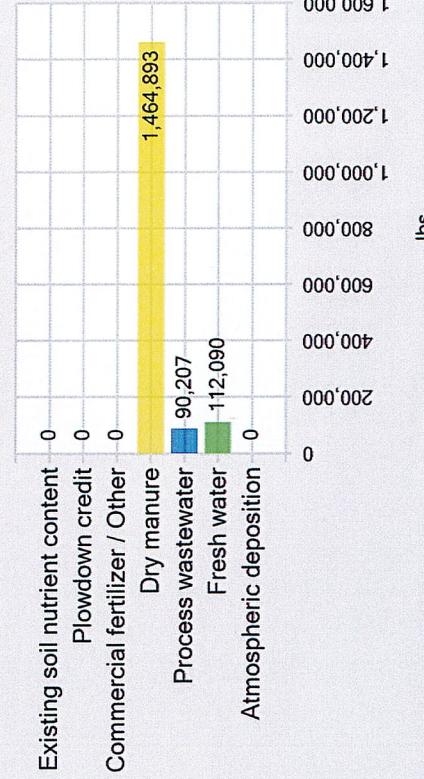
Pounds of phosphorus applied



Pounds of potassium applied



Pounds of salt applied



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**EXCEPTION REPORTING**

**A. MANURE, PROCESS WASTEWATER, AND OTHER DAIRY WASTE DISCHARGES**

The following is a summary of all manure and process 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.

No manure or process wastewater discharges occurred during the reporting period.

**B. STORM WATER DISCHARGES**

The following is a summary of all storm water discharges from the production area to surface water during the reporting period when not in accordance with the facility's Nutrient Management Plan.

No stormwater discharges occurred during the reporting period.

**C. LAND APPLICATION AREA TO SURFACE WATER DISCHARGES**

The following is a summary of all discharges from the land application area to surface water that have occurred during the reporting period when not in accordance with the facility's Nutrient Management Plan.

No land application area to surface water discharges occurred during the reporting period.

**NUTRIENT MANAGEMENT PLAN AND EXPORT AGREEMENT STATEMENTS**

**A. NUTRIENT MANAGEMENT PLAN STATEMENTS**

Was the facility's NMP updated in the reporting period? No \_\_\_\_\_

Was the facility's NMP developed by a certified nutrient management planner (specialist) as specified in Attachment C of the General Order? Yes \_\_\_\_\_

Was the facility's NMP approved by a certified nutrient management planner (specialist) as specified in Attachment C of the General Order? Yes \_\_\_\_\_

**B. EXPORT AGREEMENT STATEMENT**

Are there any written agreements with third parties to receive manure or process wastewater that are new or were revised within the reporting period? No \_\_\_\_\_

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CERTIFICATION

**A. OWNER AND/OR OPERATOR CERTIFICATION**

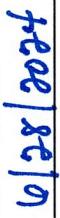
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate,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



SIGNATURE OF OWNER OF FACILITY

Ag Foundation of California State University, Fresno

PRINT OR TYPE NAME

  
Vince Roos

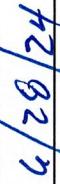
DATE

6/28/2024

SIGNATURE OF OPERATOR OF FACILITY

  
Vince Roos

PRINT OR TYPE NAME

  
Vince Roos

DATE

6/28/24

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**ADDITIONAL NOTES**

**A. NOTES**

Fresh water; only from canal, other wells not used for crop irrigation.  
The bovine operation is combined with dairy. Some Bovines (non-dairy) are on pasture and are not counted in heifer totals for corrals.  
The values for harvest lab results are higher than expected, sampling might have been non-homogenized.  
Balance of fields did not receive wastewater or dry manure.



## JMLord, Inc.

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4184 N. Knoll Drive, Fresno, CA 93722  
Phone: (559) 268-9755 Fax: (559) 486-6504  
[www.jmlordinc.com](http://www.jmlordinc.com)

## 2023 Groundwater Well Report

**Dairy:** CSUF Ag. Foundation Dairy      **Address:** 5450 N. Sierra Vista  
**Contact:** John Robison (Fresno State)      Fresno, CA 93740

### Summary

Seven wells were sampled by JMLord personnel. Samples were collected on September 15th of 2023. The samples collected are listed below. Electrical conductivity (EC) was measured in the laboratory. Ammonium presence was measured in the field using test strips. Results were recorded on the sampling record for each sample collected. Samples were collected in bottles provided by the testing laboratory. The samples were placed in a cooler with ice packs and delivered to BSK Analytical Laboratories, an ELAP laboratory. Well samples were analyzed as defined in the MRP, updated in February 2011. The five year analysis was performed on approximately 100% of the wells sampled.

<u>Wells Sampled</u>	<u>Date Sampled</u>
20	9/15/23
27	9/15/23
USDA	9/15/23
2	9/15/23
19	9/15/23
3	9/15/23
13	9/15/23
Canal	9/15/23

Attached are copies of the field records developed when samples were collected, the Chain of Custody forms, map showing well locations, and the analytical results from BSK Analytical Laboratories.

FYI: The regulatory limit for Nitrate as NO<sub>3</sub>N is 10 mg/L.



## JMLORD, INC.

4184 N. KNOLL DRIVE, FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

### FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: Well #20

Time: 9:00am

Source Location:

S. side of Barstow Ave,  
East of Chestnut

#### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from discharge pipe.

Sample was clear & without smell.

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Dstu Chtr



# JMLORD, INC.

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PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: Well #27

Time: 9:10 am

Source Location: 1/2 mile south of well #19

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from pipe that feeds standpipe.

Sample clear + no smell

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Datta Chitr



# JMLORD, INC.

4184 N. KNOLL DRIVE, FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: USDA

Time: 9:20

Source Location: 1/3 mile NE of Well #20

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from spigot off discharge pipe.  
Sample clear & no smell.

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must  
also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Dorte Ohrn



# JMLORD, INC.

4184 N. KNOLL DRIVE FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/2023

Source ID: Well #2

Time: 9:30

Source Location: NW Corner of Rodeo Grounds

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from discharge pipe.

Sample clear + no smell

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must  
also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Darin Chitt



# JMLORD, INC.

4184 N. KNOLL DRIVE FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: 19

Time: 9:50

Source Location: South of Bullard, 1/4 mile E. of Chestnut.

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from pipe that feeds standpipe  
Sample clear & no smell.

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must  
also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Dotti Chtr



# JMLORD, INC.

4184 N. KNOLL DRIVE FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: Well #3

Time: 10:00

Source Location: Inside parking lot E. of Barstow Ave.  
+ Jackson Ave. intersection

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from discharge pipe.

Sample clear & no smell.

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must  
also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Dale Olt



# JMLORD, INC.

4184 N. KNOLL DRIVE FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: Well #13

Time: 10:10

Source Location: East side of Cedar Ave., 1/8 mile South  
of Cedar & Bullard Ave.

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.  
 Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)  
Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent  
 Not Applicable.

Notes: Took from discharge pipe.

Sample clear & no smell.

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must  
also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:

Dan Chh



# JMLORD, INC.

4184 N. KNOLL DRIVE FRESNO, CA 93722  
PHONE: (559) 268-9755 FAX: (559) 486-6504  
[WWW.JMLORDINC.COM](http://WWW.JMLORDINC.COM)

## FRESH WATER SAMPLING RECORD

For any fresh water source, such as domestic wells, irrigation wells or canal water used for irrigation.  
Refer to the Sampling and Analysis Plan for details of how the sample should be collected.

Facility: CSUF Ag Foundation

Date: 9/15/23

Source ID: Canal

Time: 9:40

Source Location: N side of Bullard Ave., NW of  
Well #19

### Sample Properties at Time of Sampling

Sample Type:  Groundwater Well  Surface Water

EC:  Measured in laboratory.

Field measurement.

EC \_\_\_\_\_ ( $\mu$ S or mS)

Circle the correct units for EC.

Ammonium:  Field measurement.  Present  Absent

Not Applicable.

Notes: Took from Canal

Sample clear & no smell

Sample should be delivered to an ELAP Certified Laboratory for testing within 48 hours of collection.  
Field testing for ammonium is only required for groundwater wells. If ammonium is present, sample must  
also be analyzed for ammonium in the ELAP laboratory.

Sampler Signature:



BSK Associates Laboratory Fresno  
687 N. Laverne Avenue  
Fresno, CA 93727  
559-497-2888 (Main)

AGI2088  
9/27/2023  
Invoice: AG22722

Mark Salwasser  
Ag Foundation at Fresno State  
2385 East Barstow Ave M/S Ag 85  
Fresno, CA 93740-8004

**RE: Report for AGI2088 RB5 Surface**

Dear Mark Salwasser,

Thank you for using BSK Associates for your analytical testing needs. In the following pages, you will find the test results for the samples submitted to our laboratory on 9/15/2023. The results have been approved for release by our Laboratory Director as indicated by the authorizing signature below.

The samples were analyzed for the test(s) indicated on the Chain of Custody (see attached) and the results relate only to the samples analyzed. BSK certifies that the testing was performed in accordance with the quality system requirements specified in the 2016 TNI Standard. Any deviations from this standard or from the method requirements for each test procedure performed will be annotated alongside the analytical result or noted in the Case Narrative. Unless otherwise noted, the sample results are reported on an "as received" basis.

This certificate of analysis shall not be reproduced except in full, without written approval of the laboratory.

If additional clarification of any information is required, please contact your Project Manager, PM Staff , at 559-497-2888.

Thank you again for using BSK Associates. We value your business and appreciate your loyalty.

Sincerely,

Adam Trevarrow, Project Manager



Accredited in Accordance with NELAP  
ORELAP #4021

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Case Narrative

## Project and Report Details

Client: Ag Foundation at Fresno State  
Report To: Mark Salwasser  
Project #: -  
Received: 9/15/2023 - 14:36  
Report Due: 9/29/2023

## Invoice Details

Invoice To: Ag Foundation at Fresno State  
Invoice Attn: Accounts Payable  
Project PO#: -

## Sample Receipt Conditions

Cooler: Default Cooler  
Temperature on Receipt °C: 33.0  
Containers Intact  
COC/Labels Agree  
Received On Blue Ice  
Sample(s) arrived at lab on same day sampled.  
Sample(s) were received in temperature range.  
Initial receipt at BSK-FAL

## Data Qualifiers

The following qualifiers have been applied to one or more analytical results:

MS1.0 Matrix spike recoveries exceed control limits.

## Report Distribution

Recipient(s)	Report Format	CC:
Accounts Payable	FINAL.RPT	
Mark Salwasser	FINAL.RPT	
Madison Looper	FINAL.RPT	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-01

Sampled By: Dustie Christensen

Sample Description: Well 20

Sample Date - Time: 09/15/2023 - 09:00

Matrix: Water

Sample Type: Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	390	1.0	umhos/cm	1	AGI1056	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	11	0.23	mg/L	1	AGI0957	09/16/23 02:50	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-02

Sampled By: Dustie Christensen

Sample Description: Well 27

Sample Date - Time: 09/15/2023 - 09:10

Matrix: Water

Sample Type: Grab

BSK Associates Laboratory Fresno  
General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	310	1.0	umhos/cm	1	AGI1056	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	4.9	0.23	mg/L	1	AGI0956	09/16/23 04:00	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-03

Sampled By: Dustie Christensen

Sample Description: USDA

Sample Date - Time: 09/15/2023 - 09:20

Matrix: Water

Sample Type: Grab

BSK Associates Laboratory Fresno  
General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	280	1.0	umhos/cm	1	AGI1056	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	3.7	0.23	mg/L	1	AGI0957	09/16/23 03:06	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-04

Sampled By: Dustie Christensen

Sample Description: Well 2

Sample Date - Time: 09/15/2023 - 09:30

Matrix: Water

Sample Type: Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	260	1.0	umhos/cm	1	AGI1056	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	3.4	0.23	mg/L	1	AGI0957	09/16/23 04:25	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-05

Sampled By: Dustie Christensen

Sample Description: Canal

Sample Date - Time: 09/15/2023 - 09:40

Matrix: Water

Sample Type: Grab

BSK Associates Laboratory Fresno  
General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	98	1.0	umhos/cm	1	AGI1118	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	1.2	0.23	mg/L	1	AGI0957	09/16/23 02:03	09/16/23	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	AGI0957	09/16/23 02:03	09/16/23	
Total Dissolved Solids	SM 2540C	76	5.0	mg/L	1	AGI1311	09/21/23	09/21/23	
Total Kjeldahl Nitrogen	EPA 351.2	ND	1.0	mg/L	1	AGI1094	09/19/23	09/21/23	
Total Nitrogen, IC	CALC	1.2	1.0	mg/L					

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-06

Sampled By: Dustie Christensen

Sample Description: Well 19

Sample Date - Time: 09/15/2023 - 09:50

Matrix: Water

Sample Type: Grab

BSK Associates Laboratory Fresno  
General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	330	1.0	umhos/cm	1	AGI1118	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	7.9	0.23	mg/L	1	AGI0957	09/16/23 02:19	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-07

Sampled By: Dustie Christensen

Sample Description: Well 3

Sample Date - Time: 09/15/2023 - 10:00

Matrix: Water

Sample Type: Grab

**BSK Associates Laboratory Fresno**  
**General Chemistry**

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	310	1.0	umhos/cm	1	AGI1118	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	5.5	0.23	mg/L	1	AGI0957	09/16/23 02:35	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## Certificate of Analysis

Sample ID: AGI2088-08

Sampled By: Dustie Christensen

Sample Description: Well 13

Sample Date - Time: 09/15/2023 - 10:10

Matrix: Water

Sample Type: Grab

BSK Associates Laboratory Fresno  
General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Conductivity @ 25C	SM 2510B	390	1.0	umhos/cm	1	AGI1118	09/19/23	09/19/23	
Nitrate as N	EPA 300.0	4.9	0.23	mg/L	1	AGI0957	09/16/23 04:40	09/16/23	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

**BSK Associates Laboratory Fresno**  
**General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Date Limit Analyzed	Qual
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**EPA 300.0 - Quality Control**

**Batch: AGI0956** Prepared: 9/15/2023  
**Prep Method: Method Specific Preparation** Analyst: AAS

**Blank (AGI0956-BLK1)**

Nitrate as N	ND	0.23	mg/L							09/15/23
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**Blank Spike (AGI0956-BS1)**

Nitrate as N	23	0.23	mg/L	23	ND	102	90-110			09/15/23
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**Matrix Spike (AGI0956-MS1), Source: AGI1990-03**

Nitrate as N	12	0.23	mg/L	11	0.62	101	80-120			09/16/23
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**Matrix Spike (AGI0956-MS2), Source: AGI2088-02**

Nitrate as N	16	0.23	mg/L	11	4.9	102	80-120			09/16/23
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**Matrix Spike Dup (AGI0956-MSD1), Source: AGI1990-03**

Nitrate as N	12	0.23	mg/L	11	0.62	102	80-120	0	20	09/16/23
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**Matrix Spike Dup (AGI0956-MSD2), Source: AGI2088-02**

Nitrate as N	16	0.23	mg/L	11	4.9	103	80-120	0	20	09/16/23
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**EPA 300.0 - Quality Control**

**Batch: AGI0957** Prepared: 9/15/2023  
**Prep Method: Method Specific Preparation** Analyst: AAS

**Blank (AGI0957-BLK1)**

Nitrate as N	ND	0.23	mg/L							09/15/23
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Nitrite as N	ND	0.050	mg/L							09/15/23
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**Blank Spike (AGI0957-BS1)**

Nitrate as N	22	0.23	mg/L	23	ND	97	90-110			09/15/23
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Nitrite as N	0.97	0.050	mg/L	1.0	ND	97	90-110			09/15/23
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**Matrix Spike (AGI0957-MS1), Source: AGI1990-01**

Nitrate as N	15	0.23	mg/L	11	4.1	100	80-120			09/16/23
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Nitrite as N	0.47	0.050	mg/L	0.50	ND	94	80-120			09/16/23
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**Matrix Spike Dup (AGI0957-MSD1), Source: AGI1990-01**

Nitrate as N	16	0.23	mg/L	11	4.1	101	80-120	1	20	09/16/23
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Nitrite as N	0.48	0.050	mg/L	0.50	ND	95	80-120	1	20	09/16/23
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**EPA 351.2 - Quality Control**

**Batch: AGI1094** Prepared: 9/19/2023  
**Prep Method: Method Specific Preparation** Analyst: PXC

**Blank (AGI1094-BLK1)**

Total Kjeldahl Nitrogen	ND	1.0	mg/L							09/21/23
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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

**BSK Associates Laboratory Fresno**  
**General Chemistry Quality Control Report**

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Date Limit Analyzed	Qual
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**EPA 351.2 - Quality Control**

**Batch: AGI1094** Prepared: 9/19/2023  
**Prep Method: Method Specific Preparation** Analyst: PXC

**Blank Spike (AGI1094-BS1)**

Total Kjeldahl Nitrogen 9.3 1.0 mg/L 10 ND 93 90-110 0 10 09/21/23

**Blank Spike Dup (AGI1094-BSD1)**

Total Kjeldahl Nitrogen 9.3 1.0 mg/L 10 ND 93 90-110 0 10 09/21/23

**Matrix Spike (AGI1094-MS1), Source: AGI1735-01**

Total Kjeldahl Nitrogen 95 20 mg/L 10 80 141 90-110 0 10 09/21/23 MS1.0 High

**Matrix Spike (AGI1094-MS2), Source: AGI1875-01**

Total Kjeldahl Nitrogen 12 1.0 mg/L 10 2.9 96 90-110 0 10 09/21/23

**Matrix Spike Dup (AGI1094-MSD1), Source: AGI1735-01**

Total Kjeldahl Nitrogen 98 20 mg/L 10 80 177 90-110 4 10 09/21/23 MS1.0 High

**Matrix Spike Dup (AGI1094-MSD2), Source: AGI1875-01**

Total Kjeldahl Nitrogen 11 1.0 mg/L 10 2.9 85 90-110 9 10 09/21/23 MS1.0 Low

**SM 2510B - Quality Control**

**Batch: AGI1056** Prepared: 9/19/2023  
**Prep Method: Method Specific Preparation** Analyst: BAG

**Blank Spike (AGI1056-BS1)**

Conductivity @ 25C 1400 1.0 umhos/cm 1400 ND 99 90-110 0 10 09/19/23

**Blank Spike Dup (AGI1056-BSD1)**

Conductivity @ 25C 1400 1.0 umhos/cm 1400 ND 99 90-110 1 5 09/19/23

**Duplicate (AGI1056-DUP1), Source: AGI2088-01**

Conductivity @ 25C 390 1.0 umhos/cm 390 1 5 09/19/23

**SM 2510B - Quality Control**

**Batch: AGI1118** Prepared: 9/19/2023  
**Prep Method: Method Specific Preparation** Analyst: CEG

**Blank Spike (AGI1118-BS1)**

Conductivity @ 25C 1400 1.0 umhos/cm 1400 ND 100 90-110 0 10 09/19/23

**Blank Spike Dup (AGI1118-BSD1)**

Conductivity @ 25C 1400 1.0 umhos/cm 1400 ND 100 90-110 0 5 09/19/23

**Duplicate (AGI1118-DUP1), Source: AGI2158-01**

Conductivity @ 25C 270 1.0 umhos/cm 270 0 5 09/19/23

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237



AGI2088

RB5 Surface

## BSK Associates Laboratory Fresno

## General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	RDLimits	RPD Limit	Date Analyzed	Qual
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## SM 2540C - Quality Control

Batch: AGI1311

Prepared: 9/21/2023

Prep Method: Method Specific Preparation

Analyst: RRV

## Blank (AGI1311-BLK1)

Total Dissolved Solids ND 5.0 mg/L 09/21/23

## Blank Spike (AGI1311-BS1)

Total Dissolved Solids 1000 mg/L 1000 103 70-130 09/21/23

## Duplicate (AGI1311-DUP1), Source: AGI2043-01

Total Dissolved Solids 9500 5.0 mg/L 9500 0 10 09/21/23

## Duplicate (AGI1311-DUP2), Source: AGI2158-01

Total Dissolved Solids 220 5.0 mg/L 210 3 10 09/21/23

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

AGI2088 FINAL 09272023 1237

**Certificate of Analysis****Notes:**

- The Chain of Custody document and Sample Integrity Sheet are part of the analytical report.
- Any remaining sample(s) for testing will be disposed of according to BSK's sample retention policy unless other arrangements are made in advance.
- All positive results for EPA Methods 504.1 and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed.
- Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.
- J-value is equivalent to DNQ (Detected, not quantified) which is a trace value. A trace value is an analyte detected between the MDL and the laboratory reporting limit. This result is of an unknown data quality and is only qualitative (estimated). Baseline noise, calibration curve extrapolation below the lowest calibrator, method blank detections, and integration artifacts can all produce apparent DNQ values, which contribute to the un-reliability of these values.
- (1) - Residual chlorine and pH analysis have a 15 minute holding time for both drinking and waste water samples as defined by the EPA and 40 CFR 136. Waste water and ground water (monitoring well) samples must be field filtered to meet the 15 minute holding time for dissolved metals.
- Field tests are outside the scope of laboratory accreditation and there is no certification available for field testing.
- Summations of analytes (i.e. Total Trihalomethanes) may appear to add individual amounts incorrectly, due to rounding of analyte values occurring before or after the total value is calculated, as well as rounding of the total value.
- RL Multiplier is the factor used to adjust the reporting limit (RL) due to variations in sample preparation procedures and dilutions required for matrix interferences.
- Due to the subjective nature of the Threshold Odor Method, all characterizations of the detected odor are the opinion of the panel of analysts. The characterizations can be found in Standard Methods 2170B Figure 2170:1.
- The MCLs provided in this report (if applicable) represent the primary MCLs for that analyte.
- (2) - Formerly known as Bis(2-Chloroisopropyl) ether.  
Unless otherwise noted, TOC results by SM 5310C method do not include purgeable organic carbon, which is removed along with the inorganic carbon interference. The POC contribution to TOC is considered to be negligible.



AGI2088

RB5 Surface

## Certificate of Analysis

### Definitions

mg/L:	Milligrams/Liter (ppm)	MDL:	Method Detection Limit	MDA95:	Min. Detected Activity
mg/Kg:	Milligrams/Kilogram (ppm)	RL:	Reporting Limit: DL x Dilution	MPN:	Most Probable Number
µg/L:	Micrograms/Liter (ppb)	ND:	None Detected below MRL/MDL	CFU:	Colony Forming Unit
µg/Kg:	Micrograms/Kilogram (ppb)	pCi/L:	PicoCuries per Liter	Absent:	Less than 1 CFU/100mLs
%:	Percent	RL Mult:	RL Multiplier	Present:	1 or more CFU/100mLs
NR:	Non-Reportable	MCL:	Maximum Contaminant Limit	U:	The analyte was not detected at or above the reported sample quantitation limit.

Please see the individual Subcontract Lab's report for applicable certifications.

The following parameters are not available for certification through CA ELAP:

Odor Diisopropyl ether (DIPE) by EPA 524.2

The following parameters are calculated values and are outside the scope of our NELAP accreditation:

Total Nitrogen Aggressive Index Trivalent Chromium

BSK is not accredited under the NELAP program for the following additional parameters:

\*\*NA\*\*

**Certifications:** Please refer to our website for a copy of our Accredited Fields of Testing under each certification.

**Fresno**

State of California - ELAP	1180	State of Hawaii	4021
Los Angeles CSD	9254479	NELAP certified	4021-022
State of Nevada	CA000792022-1	State of Oregon - NELAP	4021-022
EPA UCMR5	CA00079	State of Washington	C997-23

**Sacramento**

State of California - ELAP	1180-S1
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**San Bernardino**

State of California - ELAP	1180-S2	Los Angeles CSD	9254478
NELAP certified	4119-008	State of Oregon - NELAP	4119-008

**Vancouver**

NELAP certified	WA100008-016	State of Oregon - NELAP	WA100008-016
State of Washington	C824-23		



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# Sample Integrity

BSK Bottles: Yes No

Page 1 of 1

COC Info	Was temperature within range? Chemistry ≤ 6°C Micro < 8°C	Yes	No	NA	Were correct containers and preservatives received for the tests requested?		Yes	No	NA
	If samples were taken today, is there evidence that chilling has begun?	Yes	No	NA	Bubbles Present VOAs (524.2/TTHM/TCP)? TB Received? (Check Method Below)		Yes	No	NA
	Did all bottles arrive unbroken and intact?	Yes	No		Was a sufficient amount of sample received?		Yes	No	
	Did all bottle labels agree with COC?	Yes	No		Do samples have a hold time <72 hours?		Yes	No	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	NA		Was PM notified of discrepancies? PM: _____ By/Time: _____		Yes	No	NA
	250ml(A) 500ml(B) 1Liter(C) 40ml/VOA(V) 125ml(D)				Checks*	Passed?	1-4	5	6-8
	Bacti Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
	None (P) White Cap						1A	1C	1A
	Cr6 (P) LL Green Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> DW				Cl, pH > 8	P F			
	Cr6 (P) Pink Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> WW				pH 9.3-9.7	P F			
	Cr6 (P) Black Label/Blue Cap NH <sub>4</sub> OH(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 7199 ***24 HOUR HOLD TIME***				pH 9.0-9.5	P F			
	HNO <sub>3</sub> (P) Red Cap or HCl (P) Purple Cap/LL Blue Label								
	H <sub>2</sub> SO <sub>4</sub> (P) or (AG) Yellow Cap/Label				pH < 2	P F			
	NaOH (P) Green Cap				Cl, pH > 10	P F			
	NaOH+ZnAc (P)				pH > 9	P F			
	Dissolved Oxygen 300ml (g)								
	None (AG) 808/8081/8082/625/632/8321/8151/8270								
	HCl (AG) LL Blue Label O&G, Diesel, TCP								
	Ascorbic/EDTA/KH <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> (AG) Pink Label 525								
	Na <sub>2</sub> SO <sub>3</sub> 250mL (AG) Neon Green Label 515								
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 1 Liter (Brown P) 549								
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (AG) Blue Label 548, THM, 524								
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CG) Blue Label 504, 505, 547								
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> + MCAA (CG) Orange Label 531				pH < 3	P F			
	NH <sub>4</sub> Cl (AG) Purple Label 552								
	EDA (P) or (AG) Brown Label DBPs								
	HCL (CG) 524.2,BTEX,Gas, MTBE, 8260/624								
	Buffer pH 4 (CG)								
	Na <sub>3</sub> PO <sub>4</sub> (CG) Salmon Label								
	Trizma - EPA 537 1 Light Blue Label FB								
	Ammonia/Acetate - EPA 533 2 mL Label FB								
	Bottled Water								
	Asbestos 1L (P) w/ Foil w/ 1L Metals Bottle								
	Clear Glass								
	OTHER:								
Split	Container	Preservative	Lot #		Initials	Date/Time	Preservation	Check	
	S P						pH Lot #	Ag604945	Cl Lot #
	*Preservation check completed by lab performing analysis.				✓ Indicates Blanks Received				
Comments					504 524.2 TTHM 537/533 TCP				
					✓ MS/MSD Received Method:				
	Labeled by:		Labels Checked by:						

Scanned: Caw

Rush/Short HT Page: \_\_\_\_\_ Time: \_\_\_\_\_



1414 Stanislaus St., Fresno, CA 93706  
(559) 497-2888 · Fax (559) 497-2893  
www.bskassociates.com

Turnaround Time Request

- Standard - 10 business days
  - Rush (Surcharge may apply)
- Date needed:

AGI2088 csula9755 09/15/2023



*Required Fields				Temp: <i>33.0°</i>	Invoice To: <i>77</i>	Phone:	Fax:
Company/Client Name: <i>CSUF Ag Foundation</i>	Report Attention: <i>madison@jmlordinc.com</i>	PO#:					
Address*:	City:	State*:	Zip*:				
Project:	Project #:	How would you like to receive your completed results? <input type="checkbox"/> E-Mail <input type="checkbox"/> Fax <input type="checkbox"/> Mail					
Reporting Options: <input type="checkbox"/> Trace (J-Flag) <input type="checkbox"/> Swamp <input type="checkbox"/> EDD Type: _____	Regulatory Carbon Copies <input type="checkbox"/> SWRCB (Drinking Water) <input type="checkbox"/> Merced Co <input type="checkbox"/> Fresno Co <input type="checkbox"/> Madera Co <input type="checkbox"/> Tulare Co <input type="checkbox"/> Other: _____	Regulatory Compliance <input type="checkbox"/> EDT to California SWRCB (Drinking Water) System Number: _____ <input type="checkbox"/> Geotracker #: _____					
Sampler Name (Printed/Signature): <i>Dustin Christensen</i>							
Matrix Types: SW=Surface Water BW=Bottled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid							
#	Sample Description*	Sampled* Date <i>9/15/23</i> Time <i>9:00</i>	Matrix*	Comments / Station Code / WTRAX			
1	Well 20						
2	Well 21	1 9:10					
3	USDA	9:20					
4	Well 2	9:30					
5	Canal	9:40					
6	Well 19	9:50					
7	Well 3	10:00					
8	Well 13	10:10					
<i>NH 9-15-23</i>							
Released by (Signature and Printed Name): <i>Dustin Christensen</i>	Company: JM Lord Inc	Date: <i>9/15/23</i>	Time: <i>2:30</i>	Received by: (Signature and Printed Name)	Company		
Released by (Signature and Printed Name)	Company	Date	Time	Received by: (Signature and Printed Name)	Company		
Received for Lab by (Signature and Printed Name): <i>J. H. Hammond</i>	Company	Date: <i>9/15/23</i>	Time: <i>14:30</i>	Payment Received at Delivery: Date: <i>9/15/23</i> Amount: _____	Check <input type="checkbox"/> / Cash <input type="checkbox"/>	PI#: _____	Int. _____
Shipping Method: ONTRAC UPS GSO WALK-IN FED EX Courier: _____	Custody Seal: Y / N						
Cooling Method: Well Blue None	Chilling Process Begun: Y / N						

Payment for services rendered as noted herein are due in full within 30 days from the date invoice. If not so paid, account balances are deemed delinquent. Delinquent balances are subject to monthly service charges and interest specified in BSK's current Standard Terms and Conditions for Laboratory Services. The person signing for the Client/Company acknowledges that they are either the Client or an authorized agent to the Client, that the Client agrees to be responsible for payment for the services on this Chain of Custody, and agrees to BSK's terms and conditions for laboratory services unless contractually bound otherwise. BSK's current terms and conditions can be found at [www.bskassociates.com/BSKLabTermsConditions.pdf](http://www.bskassociates.com/BSKLabTermsConditions.pdf).