

2023 ANNUAL REPORT

Prepared for

Hakker Dairy

12499 Idaho Ave
Hanford CA 93230

Kings County

January 01 through December 31, 2023

Prepared by:



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2023 ANNUAL REPORT**Hakker Dairy****Designated Person(s) Accountable for the Annual Report****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.

Dairy Owner

Signature:

Print:

Title:

Date:

Roger Hakker
Roger Hakker

6-21-24

Dairy Operator

Owner is also the Operator

Signature:

Print:

Title:

Date:

Roger Hakker
Roger HAKKER

6-21-24

Facility Configuration Changes or Information about this Report

Nothing significant to report.

This report contains information required to be submitted as outlined by the Annual Reporting section of the Revised Monitoring and Reporting Program No. R5-2013-0122 (pages MRP-12 through 14) for this dairy facility. This report is due by July 01 following the reporting year.

I. General Section

1. Reporting Period

This Annual Monitoring Report contains the required information for the period of January 01 through December 31. Field data contains information pertaining to crop activities for all crops harvested within this period. This allows for continuity of the winter crops.

2. Herd Profile and Housing of the Dairy

The maximum and average number and type of animals, whether in open confinement or housed under roof is provided in Attachment A.

3. Estimated Amount of Total Manure, Process Water, and Nutrients Generated

The estimated total amount of manure and process wastewater generated for this period is provided in Attachment A.

4. Estimated Amount of Total Manure, Process Water, and Nutrients Applied

The estimated total amount of manure and process wastewater applied for this period is provided in Attachment A.

Individual applications to each field (Item 17, Record Keeping) is provided in Attachment E.

5. Ratio of Total Nitrogen Applied to Removed for Land Application Areas

The ratio of total nitrogen (inorganic & organic) applied to land application areas and the total nitrogen removed by crop harvest is provided in Attachment C.

Also provided is the Plant Available Nitrogen (PAN) ratio which includes the inorganic nitrogen and calculates how much of the organic nitrogen has become available to the plant through mineralization for that crop. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

6. Estimated Amount of Total Manure, Process Water, and Nutrients Transferred

The estimated total amount of manure and process wastewater transferred offsite for this period is provided in Attachment A.

Individual transfers are documented in Attachment G.

Transfer documentation can be found in Item 13, Manure Tracking Manifests.

7. Land Application Areas Without Manure Applications

The total number of acres and APN's for all land application areas that did not receive manure applications during the period is provided in Attachment B.

8. Land Application Areas With Manure Applications

The total number of acres and APN's for all land application areas that did receive manure applications during the period is provided in Attachment B.

9. Summary of Manure and Process Wastewater Discharges from the Production Area

A summary of all manure and wastewater discharges from the production area to surface water or to land areas (land application areas or otherwise) when not in accordance with the facility's Nutrient Management Plan that occurred during the reporting period is provided.

- ☒ No discharges occurred during the reporting period.
☐ Yes, _____ discharges occurred. (See Attachment for detailed reports.)

10. Summary of Storm Water Discharges from the Production Area

A summary of all storm water discharges from the production areas to surface water during the reporting period is provided.

- ☒ No discharges occurred during the reporting period.
☐ Yes, _____ discharges occurred. (See Attachment for detailed reports.)

11. Summary of Discharges from the Land Application Area(s)

A summary of all discharges from land application area to surface water that have occurred during the reporting period is provided.

- ☒ No discharges occurred during the reporting period.
☐ Yes, _____ discharges occurred. (See Attachment for detailed reports.)

12. Nutrient Management Plan Update

12.1 Was the facility's NMP updated in the reporting period?

- ☐ No.
☒ Yes.

12.2 Was the facility's NMP developed and certified by a certified nutrient management specialist?

- ☐ No.
☒ Yes.

13. Manure/Process Wastewater Tracking Manifests

Solid, slurry, or process wastewater that is sold, given away, or otherwise removed from the facility is documented on a manifest.

- ☒ No transfers occurred.
☐ Yes, attached are the manure and/or wastewater tracking manifests (See Attachment D's as titled by R5-2007-0035 Attachment D).

14. Written Agreements

Any process wastewater transferred to a third party must have a written agreement consistent with the Regional Board requirements. Any new agreements within the reporting period must be submitted.

- ☒ No wastewater agreements for this facility.
☐ There are _____ current wastewater agreements for this facility.
☐ There are _____ new agreements this reporting period and are attached.

15. Laboratory Analysis for Discharges

Laboratory analysis chain-of-custody forms and laboratory quality assurance/quality control documentation of all discharges described in Items #9, #10 and/or #11 are in the reports provided in Attachment J.

16. Tabulated Nutrient Analytical Data

Analytical data for samples of manure, process wastewater, irrigation water, soil and plant tissue are tabulated in Attachment H.

17. Record-Keeping Results

- 17.1 Response of Item B.2.b and B.3.I. Corrective Action records to correct deficiencies of inspections from the production and land application areas.

- ☒ No corrective actions during the reporting period.
☐ Yes, _____ corrective actions. (See Attachment K for detailed reports.)

- 17.2 Response of Item B.2.c. Records of production area overflow are in reports provided in Attachment J.

- 17.3 Response of Items B.3.a and b. See Attachment D for field acres, crops, planting dates, expected yields, and harvest information.

- 17.4 Response of Item B.3.c, d and j. See Attachment E for field applications of solid and liquid manure and the total amount of nutrients applied.

- 17.5 Response of Item B.3.e. See Attachment F for weather conditions before, during, and after manure applications.

II. Groundwater Reporting Section**1. Supply Wells and Tile Drainage System Monitoring**

Water supply wells and/or subsurface (tile) drainage systems laboratory data including chain-of-custody and laboratory quality assurance/quality control documentation are attached.

2. Groundwater Monitoring Well Systems

- ☒ This facility does not have groundwater monitoring wells.
☐ This facility has groundwater monitoring wells required by the Regional Board and a certified report is attached.
☐ This facility has groundwater monitoring wells required by the County and the sampling requirements are attached.
☐ This facility has groundwater monitoring wells for research purposes. Data is exempt from this report.

III. Storm Water Reporting Section**1. Storm Water Discharges from Land Application Area**

A summary of all storm water discharges from the land application areas during the reporting period is provided including laboratory analysis chain-of-custody forms and laboratory quality assurance/quality control documentation

- ☒ No discharges occurred during the reporting period.
☐ Yes, _____ discharges occurred. (See Attachment J for detailed reports.)

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment A

Herd Profile, Housing, and Estimated Total Manure Production

(Ref MRP Annual Report, General Section, Items 3 and 4)

Average Herd Profile and Housing Type

Type of Animals	Average Open Confinement	Average Housed Under Roof	Max Open Confinement	Max Housed Under Roof	Average Live Weight	Average Milk Production (lbs/cow/day)	Predominant Breed
Milk Cows	0	780	0	812	1,400	78.0	Holstein
Dry Cows	121	0	109	0	1,600		Holstein
Bred Heifers 15-24 Months	259	0	275	0	1,160		Holstein
Heifers 7-14 Months	215	0	231	0	685		Holstein
Calves 4-6 Months	74	0	72	0			Holstein
Calves 0-3 Months	0	0	0	0			Holstein
Other type of commercial animals							

Number of months the dairy was occupied: 12

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Estimated Total Amount of Manure and Nutrients Based On Average Herd Size

Type of Animals	Total Manure (lbs/day)	Nitrogen (lbs/day)	Phosphorus (lbs/day)	Potassium (lbs/day)
Milk Cows	14,566	743	126	163
Dry Cows	1,331	61	8	40
Bred Heifers 15-24 Months	2,486	98	14	
Heifers 7-14 Months	1,279	44	7	
Calves 4-6 Months	231	10	1	
Calves 0-3 Months	0	0	0	
Other type of commercial animals				
Total Pounds for report period:		348,885	57,269	74,104
Total tons for report period:	3,631			

Notes:

1. Equations and factors used in this table to determine total manure, nitrogen, phosphorus and potassium were obtained from ASAE D384.2 March 2005.
2. The quantities presented in this table include both solid and liquid excretions and do not account for any losses or division into solid or liquid portions.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Estimated Total Amount of Solid Manure and Nutrients Generated

Total Tons (As Is) of Manure Generated	Total lbs Generated				
	Total Dry Manure	Nitrogen	Phosphorus	Potassium	Salt
1,640	781,624	15,476	5,940	17,430	0

Estimated Total Amount of Process Wastewater and Nutrients Generated

Total Gallons of Process Wastewater Generated (1,000 gals.)	Total lbs Generated			
	Nitrogen	Phosphorus	Potassium	Salt
7,790	25,671	303	1,342	191,394

Notes:

1. Generated totals are the sum of what was applied to all land application areas and what was transferred to others. See Attachment E for individual field applications and Attachment G for individual transfers.
2. Dry tons are calculated by:
$$\text{Dry Tons} = \text{Tons As-Is} * (100 - \text{sample moisture \%}) / 100$$
3. Solid manure nutrient pounds applied are calculated by:
$$\text{Total (N,P,K,Salts) lbs} = (\text{Dry Tons}) * ((\% \text{N,P,K,Ash}) / 100) * 2,000$$
4. Process wastewater nutrient pounds applied are calculated by:
$$\text{Total (P,K,Salts) lbs} = (\text{Gallons}) * (\text{P,K,TDS mg/l}) * (8.337\text{E-}06)$$

$$\text{Total (N) lbs} = (\text{Gallons}) * (\text{NO}_3\text{-N} + \text{TKN mg/l}) * (8.337\text{E-}06)$$
5. All solid manure applied is considered as the organic form of nitrogen. Inorganic and organic forms of nitrogen in process wastewater are calculated by:
$$\text{Inorganic N lbs} = (\text{Gallons}) * (\text{NO}_3\text{-N} + \text{NH}_4\text{-N mg/l}) * (8.337\text{E-}06)$$

$$\text{Organic N lbs} = (\text{Gallons}) * (\text{TKN} - \text{NH}_4\text{-N mg/l}) * (8.337\text{E-}06)$$
6. Estimated total salt content in solid manure is determined by fixed solids (ash) and in process wastewater by total dissolved solids. These are not direct relationships but are being used for estimation purposes. Ash can vary widely in a sample if corral dirt becomes part of the sample. Also, ash content is only required to be analyzed once every two years. The latest resultant value is applied to any subsequent applications.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Estimated Amount of Total Solid Manure And Nutrients Applied

Total Tons (As Is) of Manure Applied	Total lbs Applied				
	Manure	Nitrogen	Phosphorus	Potassium	Salt
1,640	781,624	15,476	5,940	17,430	0

Estimated Amount of Total Wastewater And Nutrients Applied

Total Gallons of Process Wastewater Applied (1,000 gals.)	Total lbs Applied			
	Nitrogen	Phosphorus	Potassium	Salts
7,790	25,671	303	1,342	191,394

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Estimated Amount of Total Solid Manure And Nutrients Transferred

Total Tons (As Is) of Manure Transferred	Total lbs Transferred				
	Total Manure	Nitrogen	Phosphorus	Potassium	Salt
0	0	0	0	0	0

Estimated Amount of Total Wastewater And Nutrients Transferred

Total Gallons Process Wastewater Transferred (1,000 gal)	Total lbs Transferred			
	Nitrogen	Phosphorus	Potassium	Salts
0	0	0	0	0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment B

Land Application Area

(Ref MRP Annual Report, General Section, Items 7 and 8)

All APNs Associated With This Dairy

Total Number of APN Acres Associated with this Dairy: 1407.79

APN	County	Acres	Land Use	APN Not Part of Land Application Area
018-241-012	Kings	187.44	Cropland	
018-241-013	Kings	9.25	Cropland	
018-241-016	Kings	38.00	Cropland	
018-241-017	Kings	140.00	Cropland	
018-241-018	Kings	20.00	Cropland	
018-241-027	Kings	19.98	Cropland	
018-241-029	Kings	18.05	Cropland	
018-250-007	Kings	80.00	Cropland	
018-250-020	Kings	78.64	Cropland	
024-062-010	Kings	35.00	Cropland	
024-062-030	Kings	138.19	Cropland	
028-020-011	Kings	59.39	Cropland	
028-020-014	Kings	45.00	Cropland	
028-020-015	Kings	160.00	Dairy Site/Cropland	
028-020-033	Kings	15.37	Cropland	
028-020-041	Kings	15.10	Cropland	
028-020-045	Kings	5.32	Residential	
028-020-048	Kings	76.01	Cropland	

Dairy Name: Hakker Dairy LP
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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

028-020-049	Kings	1.00	Residential	
028-020-058	Kings	13.91	Cropland	
028-020-059	Kings	89.00	Cropland	
028-220-002	Kings	163.14	Cropland	

Total Land Application Areas For Manure And Wastewater

Total Land Application Area Acres: 1,119.0

Total Acres With Manure Applied For This Report: 343.0

Total Acres Without Manure Applied For This Report: 776.0

Field ID	Acres	APN	Type of Waste Applied For This Report	Field Not Part of Land Application Area
01	15.0	028-020-033	None	
02	13.0	028-020-041	Liquid	
03	16.0	028-020-015	Liquid	
04	12.0	028-020-015	None	
06	20.0	028-020-048	Liquid	
07	45.0	028-020-048	Liquid	
08	49.0	028-020-015	Liquid	
09	43.0	028-020-015	None	
10	42.0	028-020-014	Liquid	
11	54.0	028-020-011	Liquid	
12	6.0	018-250-007	None	

Dairy Name: Hakker Dairy LP
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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field ID	Acres	APN	Type of Waste Applied For This Report	Field Not Part of Land Application Area
13	25.0	018-250-007	None	
14	90.0	018-250-007 018-250-020	None	
15	33.0	024-062-010	None	
16	17.0	024-062-030	None	
17	38.0	024-062-030	None	
18	78.0	024-062-030	None	
21	28.0	018-250-020	None	
23	23.0	028-020-058 028-020-059	None	
24	57.0	028-020-058 028-020-059	None	
25	18.0	028-020-059	Liquid	
28	38.0	018-241-027 018-241-029	None	
29	86.0	018-241-017	None	
30	86.0	018-241-016 018-241-017	Solid	
31	40.0	018-241-012	None	
32	77.0	018-241-012	None	
33	70.0		None	

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
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Report Period: Jan 01 through Dec 31, 2023

Field ID	Acres	APN	Type of Waste Applied For This Report	Field Not Part of Land Application Area
		018-241-012 018-241-013		

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	01
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	15
Start Date	10/21/2022
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	3
Lagoon Water	
Total Applied	
PAN Applied	68
Irrigation Source	0
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	333
Balance Ratio	
By Crop	
Total	0.04
PAN	0.26
By Field	
Total	0.04
PAN	0.26
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	02
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	13
Start Date	10/21/2022
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	2
Lagoon Water	
Total Applied	350
PAN Applied	217
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	420
Balance Ratio	
By Crop	
Total	0.87
PAN	0.56
By Field	
Total	0.87
PAN	0.56
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	03
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	16
Start Date	11/01/2021
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	
Lagoon Water	
Total Applied	77
PAN Applied	52
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	393
Balance Ratio	
By Crop	
Total	0.23
PAN	0.17
By Field	
Total	0.23
PAN	0.17
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	04
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	12
Start Date	4/08/2023
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	
Lagoon Water	
Total Applied	
PAN Applied	14
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	294
Balance Ratio	
By Crop	
Total	0.03
PAN	0.08
By Field	
Total	0.03
PAN	0.08
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
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Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	06
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	20
Start Date	10/20/2022
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	1
Lagoon Water	
Total Applied	184
PAN Applied	111
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	429
Balance Ratio	
By Crop	
Total	0.46
PAN	0.30
By Field	
Total	0.46
PAN	0.30
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
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Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed
(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	07
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	45
Start Date	4/10/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	5
Lagoon Water	
Total Applied	137
PAN Applied	84
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	458
Balance Ratio	
By Crop	
Total	0.48
PAN	0.38
By Field	
Total	0.48
PAN	0.38
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.
PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
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Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	08
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	49
Start Date	11/02/2021
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	1
Lagoon Water	
Total Applied	118
PAN Applied	73
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	370
Balance Ratio	
By Crop	
Total	0.36
PAN	0.24
By Field	
Total	0.36
PAN	0.24
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	09
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	43
Start Date	10/23/2022
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	1
Lagoon Water	
Total Applied	
PAN Applied	4
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	379
Balance Ratio	
By Crop	
Total	0.04
PAN	0.05
By Field	
Total	0.04
PAN	0.05
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	10
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	42
Start Date	4/17/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	0
Lagoon Water	
Total Applied	27
PAN Applied	31
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	222
Balance Ratio	
By Crop	
Total	0.50
PAN	0.52
By Field	
Total	0.50
PAN	0.52
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	11
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	54
Start Date	11/03/2021
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	3
Lagoon Water	
Total Applied	
PAN Applied	5
Irrigation Source	2
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	338
Balance Ratio	
By Crop	
Total	0.05
PAN	0.07
By Field	
Total	0.05
PAN	0.07
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information		
Field ID	12	12
Crop	Wheat Silage	Corn Silage
Expected Yield (tons/ac)	15	30
Acres	6	6
Start Date	11/16/2022	6/06/2023
Applications		
Commercial		
Solid Manure		
Total Applied		
PAN Applied	1	1
Lagoon Water		
Total Applied		
PAN Applied		
Irrigation Source	0	1
Atmospheric		
Removal		
Planned Harvest		
Actual Harvest	155	249
Balance Ratio		
By Crop		
Total	0.00	0.00
PAN	0.01	0.01
By Field		
Total	0.00	0.00
PAN	0.01	0.01
By Farm		
Total	0.26	0.26
PAN	0.22	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information		
Field ID	13	13
Crop	Wheat Silage	Corn Silage
Expected Yield (tons/ac)	18	25
Acres	25	25
Start Date	11/20/2022	6/06/2023
Applications		
Commercial		75
Solid Manure		
Total Applied		
PAN Applied	1	1
Lagoon Water		
Total Applied		
PAN Applied		
Irrigation Source	0	1
Atmospheric		7
Removal		
Planned Harvest		
Actual Harvest	209	251
Balance Ratio		
By Crop		
Total	0.00	0.33
PAN	0.00	0.33
By Field		
Total	0.18	0.18
PAN	0.18	0.18
By Farm		
Total	0.26	0.26
PAN	0.22	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	14
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	90
Start Date	4/12/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	11
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	265
Balance Ratio	
By Crop	
Total	0.31
PAN	0.36
By Field	
Total	0.31
PAN	0.36
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed
(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	15
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	33
Start Date	4/13/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	2
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	238
Balance Ratio	
By Crop	
Total	0.35
PAN	0.36
By Field	
Total	0.35
PAN	0.36
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.
PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	16
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	17
Start Date	4/13/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	1
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	391
Balance Ratio	
By Crop	
Total	0.21
PAN	0.22
By Field	
Total	0.21
PAN	0.22
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	18
Crop	Alfalfa
Expected Yield (tons/ac)	0
Acres	78
Start Date	10/21/2020
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	4
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	277
Balance Ratio	
By Crop	
Total	0.05
PAN	0.07
By Field	
Total	0.05
PAN	0.07
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	21
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	28
Start Date	12/01/2022
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	1
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	253
Balance Ratio	
By Crop	
Total	0.06
PAN	0.06
By Field	
Total	0.06
PAN	0.06
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	23
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	23
Start Date	12/01/2020
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	
Lagoon Water	
Total Applied	
PAN Applied	3
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	296
Balance Ratio	
By Crop	
Total	0.05
PAN	0.06
By Field	
Total	0.05
PAN	0.06
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	24
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	57
Start Date	4/18/2023
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	
Lagoon Water	
Total Applied	
PAN Applied	1
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	250
Balance Ratio	
By Crop	
Total	0.03
PAN	0.04
By Field	
Total	0.03
PAN	0.04
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	25
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	18
Start Date	4/10/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	6
Lagoon Water	
Total Applied	175
PAN Applied	116
Irrigation Source	1
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	287
Balance Ratio	
By Crop	
Total	0.90
PAN	0.71
By Field	
Total	0.90
PAN	0.71
By Farm	
Total	0.26
PAN	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	29
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	86
Start Date	10/29/2022
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	6
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	1
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	372
Balance Ratio	
By Crop	
Total	0.04
PAN	0.06
By Field	
Total	0.04
PAN	0.06
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information		
Field ID	30	30
Crop	Wheat Silage	Corn Silage
Expected Yield (tons/ac)	20	25
Acres	86	86
Start Date	11/10/2022	6/10/2023
Applications		
Commercial		75
Solid Manure		
Total Applied		180
PAN Applied	2	71
Lagoon Water		
Total Applied		
PAN Applied		
Irrigation Source	0	0
Atmospheric	7	7
Removal		
Planned Harvest		
Actual Harvest	166	262
Balance Ratio		
By Crop		
Total	0.04	1.00
PAN	0.06	0.58
By Field		
Total	0.63	0.63
PAN	0.38	0.38
By Farm		
Total	0.26	0.26
PAN	0.22	0.22

Notes:

Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	32
Crop	Alfalfa
Expected Yield (tons/ac)	8
Acres	77
Start Date	11/13/2023
Applications	
Commercial	
Solid Manure	
Total Applied	
PAN Applied	
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	0
Atmospheric	14
Removal	
Planned Harvest	
Actual Harvest	662
Balance Ratio	
By Crop	
Total	0.02
PAN	0.02
By Field	
Total	0.02
PAN	0.02
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP

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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment C

Nitrogen Balance Ratio - Applied to Removed

(Nitrogen values presented as lbs/acre)

Field Information	
Field ID	33
Crop	Corn Silage
Expected Yield (tons/ac)	25
Acres	70
Start Date	4/15/2023
Applications	
Commercial	75
Solid Manure	
Total Applied	
PAN Applied	1
Lagoon Water	
Total Applied	
PAN Applied	
Irrigation Source	0
Atmospheric	7
Removal	
Planned Harvest	
Actual Harvest	273
Balance Ratio	
By Crop	
Total	0.30
PAN	0.31
By Field	
Total	0.30
PAN	0.31
By Farm	
Total	0.26
PAN	0.22

Notes:
Total Balance Ratio is based on the total nitrogen (inorganic & organic) applied only during the time of that crop's growing season.

PAN Balance Ratio is based on Plant Available Nitrogen. In addition to inorganic nitrogen applied, PAN takes into consideration how much of the organic nitrogen has become available to the plant through mineralization. This includes both what is applied during that growing season and the residual amounts from previous applications to that field.

Dairy Name: Hakker Dairy LP
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Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment D

**Results of Record-Keeping Requirements
Planting and Harvest Data**

(Ref MRP Annual Report, General Section, Item 17, subitems B.3 a and b)

* - A crop's planting date is reported in the harvest year with the yield of that crop.

** - If no manure is applied to the crop within the year, harvest is not reported (See Attachment E).

*** - For multiple year crops, a starting date is set to increment into annual periods.

Crops and Harvests

Field ID	Crop	Acres	Plant Date *	Multi Year Crop ***	Harvest Date **	Yield (tons/acre)		Total Tons
						Expected	Actual	
01	Alfalfa	15.00	10/21/2022	X	10/05/2023	8	5.87	88
02	Alfalfa	13.00	10/21/2022	X	10/05/2023	8	7.15	93
03	Alfalfa	16.00	11/01/2021	X	10/10/2023	8	9.06	145
04	Corn Silage	12.00	04/08/2023		08/04/2023	25	22.42	269
06	Alfalfa	20.00	10/20/2022	X	10/20/2023	8	6.05	121
07	Corn Silage	45.00	04/10/2023		08/04/2023	25	33.42	1,504
08	Alfalfa	49.00	11/02/2021	X	11/12/2023	8	5.76	282
09	Alfalfa	43.00	10/23/2022	X	11/15/2023	8	7.49	322
10	Corn Silage	42.00	04/17/2023		08/05/2023	25	28.83	1,211
11	Alfalfa	54.00	11/03/2021	X	10/20/2023	8	7.78	420
12	Wheat Silage	6.00	11/16/2022		05/05/2023	15	15.17	91
12	Corn Silage	6.00	06/06/2023		09/07/2023	30	19.17	115
13	Wheat Silage	25.00	11/20/2022		05/05/2023	18	15.04	376
13	Corn Silage	25.00	06/06/2023		09/07/2023	25	19.80	495
14	Corn Silage	90.00	04/12/2023		07/03/2023	25	29.67	2,670
15	Corn Silage	33.00	04/13/2023		07/30/2023	25	27.58	910
16	Corn Silage	17.00	04/13/2023		07/30/2023	25	31.82	541
18	Alfalfa	78.00	10/21/2020	X	11/10/2023	0	7.13	556
21	Alfalfa	28.00	12/01/2022	X	11/10/2023	8	7.54	211

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field ID	Crop	Acres	Plant Date *	Multi Year Crop ***	Harvest Date **	Yield (tons/acre)		Total Tons
						Expected	Actual	
23	Alfalfa	23.00	12/01/2020	X	10/20/2023	8	4.17	96
24	Corn Silage	57.00	04/18/2023		03/02/2023	25	17.93	1,022
25	Corn Silage	18.00	04/10/2023		08/02/2023	25	25.06	451
29	Alfalfa	86.00	10/29/2022	X	10/10/2023	8	5.99	515
30	Wheat Silage	86.00	11/10/2022		05/06/2023	20	16.31	1,403
30	Corn Silage	86.00	06/10/2023		09/08/2023	25	20.59	1,771
32	Alfalfa	77.00	11/13/2023	X	10/08/2023	8	6.62	510
33	Corn Silage	70.00	04/15/2023		07/30/2023	25	26.96	1,887

Dairy Name: Hakker Dairy LP
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 Hanford, CA 93230

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Nutrients Removed

Field ID	Crop	Harvest Date	Total Tons (wet)	Total Tons (dry)	Sample ID	% Moisture	Conc. From Sample Analysis (% dry basis)			Total Pounds Removed		
							N	P	K	N	P	K
01	Alfalfa	10/05/2023	88	84		4.26	2.97	0.32	3.04	5,005	539	5,122
					16-23-P-24	4.26	2.97	0.32	3.04			
02	Alfalfa	10/05/2023	93	90		3.00	3.00	0.35	1.68	5,413	631	3,031
					16-23-P-25	3.00	3.00	0.35	1.68			
03	Alfalfa	10/10/2023	145	140		3.68	2.23	0.32	2.35	6,229	894	6,564
					16-23-P-26	3.68	2.23	0.32	2.35			
04	Corn Silage	8/04/2023	269	102		61.99	1.73	0.27	1.35	3,538	552	2,761
					16-23-P-5	61.99	1.73	0.27	1.35			
06	Alfalfa	10/20/2023	121	115		4.95	3.70	0.36	2.98	8,511	828	6,855
					16-20-P-4	4.95	3.70	0.36	2.98			
07	Corn Silage	8/04/2023	1,504	616		59.02	1.67	0.36	1.37	20,586	4,438	16,888
					16-23-P-6	59.02	1.67	0.36	1.37			
08	Alfalfa	11/12/2023	282	263		6.72	3.43	0.38	3.14	18,045	1,999	16,520
					16-23-P-19	6.72	3.43	0.38	3.14			
09	Alfalfa	11/15/2023	322	310		3.78	2.63	0.28	1.41	16,297	1,735	8,737
					16-23-P-27	3.78	2.63	0.28	1.41			
10	Corn Silage	8/05/2023	1,211	414		65.83	1.13	0.30	1.42	9,352	2,483	11,752
					16-23-P-7	65.83	1.13	0.30	1.42			
11	Alfalfa	10/20/2023	420	387		7.78	2.35	0.35	4.05	18,204	2,711	31,373
					16-23-P-20	7.78	2.35	0.35	4.05			
12	Wheat Silage	5/05/2023	91	35		61.87	1.34	0.22	1.55	930	153	1,076
					16-23-P-1	61.87	1.34	0.22	1.55			
12	Corn Silage	9/07/2023	115	41		64.61	1.83	0.37	1.62	1,490	301	1,319
					16-23-P-14	64.61	1.83	0.37	1.62			
13	Wheat Silage	5/05/2023	376	144		61.70	1.83	0.28	1.50	5,271	806	4,320
					16-23-P-2	61.70	1.83	0.28	1.50			
13	Corn Silage	9/07/2023	495	147		70.39	2.13	0.28	1.13	6,244	821	3,312
					16-23-P-15	70.39	2.13	0.28	1.13			
14	Corn Silage	7/03/2023	2,670	847		68.27	1.41	0.21	1.42	23,891	3,558	24,060
					16-23-P-8	68.27	1.41	0.21	1.42			
15	Corn Silage	7/30/2023	910	290		68.17	1.35	0.29	1.69	7,821	1,680	9,790

Dairy Name: Hakker Dairy LP
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 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field ID	Crop	Harvest Date	Total Tons (wet)	Total Tons (dry)	Sample ID	% Moisture	Conc. From Sample Analysis (% dry basis)			Total Pounds Removed		
							N	P	K	N	P	K
					16-23-P-9	68.17	1.35	0.29	1.69			
16	Corn Silage	7/30/2023	541	204		62.33	1.63	0.35	1.38	6,644	1,427	5,625
					16-23-P-10	62.33	1.63	0.35	1.38			
18	Alfalfa	11/10/2023	556	520		6.39	2.10	0.31	3.26	21,860	3,227	33,935
					16-23-P-21	6.39	2.10	0.31	3.26			
21	Alfalfa	11/10/2023	211	198		6.06	1.81	0.43	4.00	7,175	1,705	15,857
					16-23-P-22	6.06	1.81	0.43	4.00			
23	Alfalfa	10/20/2023	96	83		13.50	4.11	0.49	4.99	6,826	814	8,287
					16-23-P-23	13.50	4.11	0.49	4.99			
24	Corn Silage	3/02/2023	1,022	437		57.24	1.62	0.26	1.44	14,159	2,272	12,586
					16-23-P-11	57.24	1.62	0.26	1.44			
25	Corn Silage	8/02/2023	451	177		60.73	1.45	0.30	1.34	5,136	1,063	4,746
					16-23-P-12	60.73	1.45	0.30	1.34			
29	Alfalfa	10/10/2023	515	490		4.90	3.26	0.32	2.27	31,933	3,134	22,235
					16-23-P-28	4.90	3.26	0.32	2.27			
30	Wheat Silage	5/06/2023	1,403	535		61.87	1.34	0.22	1.55	14,337	2,354	16,584
					16-23-P-18	61.87	1.34	0.22	1.55			
30	Corn Silage	9/08/2023	1,771	598		66.21	1.87	0.28	1.13	22,381	3,351	13,524
					16-23-P-17	66.21	1.87	0.28	1.13			
32	Alfalfa	10/08/2023	510	488		4.27	5.25	0.33	2.31	51,263	3,222	22,556
					16-23-P-29	4.27	5.25	0.33	2.31			
33	Corn Silage	7/30/2023	1,887	711		62.33	1.34	0.25	1.27	19,050	3,554	18,055
					16-23-P-13	62.33	1.34	0.25	1.27			

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment E

**Results of Record-Keeping Requirements
Manure Applications to Fields**

(Ref MRP Annual Report, General Section, Item 17, subitems B.3 c, d, and j)

Field: 01

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	0 lbs
Phosphorus	0 lbs
Potassium	0 lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 01
Crop: Alfalfa

Irrigation Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO3-N	NH4-N	TKN	
Total =								

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 02

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	4,545	lbs
Phosphorus	28	lbs
Potassium	157	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
07/13/2023	700		0.00	779	4.8	27.0	4,526	28	157
		16-23-L-2	0.00	779	4.8	27.0			
Total =	700						4,526	28	157

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 02

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/08/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
6/08/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
7/13/2023	700							2.1
	700	16-23-I-3	LP #24	Surface	0.30			2.1
8/11/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
9/07/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
Total =	6,300							18.9

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 03

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	1,240	lbs
Phosphorus	26	lbs
Potassium	144	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
04/14/2023	700		0.00	210	4.4	24.7	1,217	26	144
		16-23-L-2	0.00	210	4.4	24.7			
Total =	700						1,217	26	144

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 03

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
4/14/2023	700							2.1
	700	16-23-I-3	LP #24	Surface	0.30			2.1
5/09/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
6/09/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
7/08/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
8/08/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
9/09/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
Total =	7,700							23.1

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 04

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	20	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 04

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
2/26/2023	980							2.9
	980	16-23-I-3	LP #24	Surface	0.30			2.9
5/12/2023	750							2.3
	750	16-23-I-3	LP #24	Surface	0.30			2.3
5/25/2023	980							2.9
	980	16-23-I-3	LP #24	Surface	0.30			2.9
6/10/2023	980							2.9
	980	16-23-I-3	LP #24	Surface	0.30			2.9
6/22/2023	980							2.9
	980	16-23-I-3	LP #24	Surface	0.30			2.9
7/05/2023	980							2.9
	980	16-23-I-3	LP #24	Surface	0.30			2.9
7/19/2023	980							2.9
	980	16-23-I-3	LP #24	Surface	0.30			2.9
Total =	6,630							19.9

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 06

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	3,668	lbs
Phosphorus	47	lbs
Potassium	125	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
09/10/2023	700		0.00	628	8.1	21.6	3,649	47	125
		16-23-L-3	0.00	628	8.1	21.6			
Total =	700						3,649	47	125

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 06

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/13/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
6/01/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
6/23/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
7/08/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
7/23/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
8/04/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
8/20/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
9/10/2023	1,100							2.2
	1,100	16-23-I-6	LP # 7	Surface	0.20			2.2
10/06/2023	700							1.4
	700	16-23-I-6	LP # 7	Surface	0.20			1.4
Total =	9,500							19.0

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 07

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	9,570	lbs
Phosphorus	38	lbs
Potassium	213	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/02/2023	3,375		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
05/13/2023	950		0.00	779	4.8	27.0	6,142	38	213
		16-23-L-2	0.00	779	4.8	27.0			
Total =	950						6,142	38	213

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 07

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/01/2023	3,900							7.8
	3,900	16-23-I-6	LP # 7	Surface	0.20			7.8
5/13/2023	3,500							7.0
	3,500	16-23-I-6	LP # 7	Surface	0.20			7.0
5/28/2023	3,900							7.8
	3,900	16-23-I-6	LP # 7	Surface	0.20			7.8
6/11/2023	3,900							7.8
	3,900	16-23-I-6	LP # 7	Surface	0.20			7.8
6/28/2023	3,900							7.8
	3,900	16-23-I-6	LP # 7	Surface	0.20			7.8
7/08/2023	3,900							7.8
	3,900	16-23-I-6	LP # 7	Surface	0.20			7.8
7/21/2023	3,200							6.4
	3,200	16-23-I-6	LP # 7	Surface	0.20			6.4
Total =	26,200							52.4

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 08

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	5,789	lbs
Phosphorus	74	lbs
Potassium	197	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
10/29/2023	1,100		0.00	628	8.1	21.6	5,734	74	197
		16-23-L-3	0.00	628	8.1	21.6			
Total =	1,100						5,734	74	197

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 08

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
4/20/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
5/16/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
6/16/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
7/15/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
8/15/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
9/13/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
10/08/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
10/29/2023	3,000							6.0
	3,000	16-20-I-7	LP # 9	Surface	0.20			6.0
Total =	27,500							55.0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 09

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	56	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 09

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/13/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
6/01/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
6/14/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
7/02/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
7/14/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
8/01/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
8/30/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
9/27/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
Total =	28,000							56.0

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 10

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	4,312	lbs
Phosphorus	23	lbs
Potassium	131	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/01/2023	3,150		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
03/24/2023	640		0.00	210	4.4	24.7	1,113	23	131
		16-23-L-2	0.00	210	4.4	24.7			
Total =	640						1,113	23	131

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 10

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/24/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
5/17/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
6/01/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
6/15/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
6/29/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
7/12/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
7/22/2023	3,500							7.0
	3,500	16-20-I-7	LP # 9	Surface	0.20			7.0
Total =	24,500							49.0

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 11

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	124	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 11

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
4/24/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
5/03/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
5/25/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
6/15/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
7/01/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
7/18/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
8/05/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
9/01/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
9/28/2023	4,600							13.8
	4,600	16-23-I-3	LP #24	Surface	0.30			13.8
Total =	41,400							124.2

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 12

Crop: Wheat Silage

Total Nutrients Applied To This Crop:

Nitrogen	1	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO3-N	NH4-N	TKN	
4/18/2023	700							1.4
	700	16-23-I-1	TO #14	Surface	0.20			1.4
Total =	700							1.4

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 12

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	8 lbs
Phosphorus	0 lbs
Potassium	0 lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 12

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/17/2023	650							1.3
	650	16-23-I-1	TO #14	Surface	0.20			1.3
6/26/2023	650							1.3
	650	16-23-I-1	TO #14	Surface	0.20			1.3
7/10/2023	650							1.3
	650	16-23-I-1	TO #14	Surface	0.20			1.3
7/24/2023	650							1.3
	650	16-23-I-1	TO #14	Surface	0.20			1.3
8/07/2023	650							1.3
	650	16-23-I-1	TO #14	Surface	0.20			1.3
8/20/2023	650							1.3
	650	16-23-I-1	TO #14	Surface	0.20			1.3
Total =	3,900							7.8

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 13

Crop: Wheat Silage

Total Nutrients Applied To This Crop:

Nitrogen	4 lbs
Phosphorus	0 lbs
Potassium	0 lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO3-N	NH4-N	TKN	
4/19/2023	2,100							4.2
	2,100	16-23-I-1	TO #14	Surface	0.20			4.2
Total =	2,100							4.2

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 13

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	1,903	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
6/19/2023	1,875		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 13

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/18/2023	2,500							5.0
	2,500	16-23-I-1	TO #14	Surface	0.20			5.0
6/27/2023	2,500							5.0
	2,500	16-23-I-1	TO #14	Surface	0.20			5.0
7/12/2023	2,200							4.4
	2,200	16-23-I-1	TO #14	Surface	0.20			4.4
7/25/2023	2,200							4.4
	2,200	16-23-I-1	TO #14	Surface	0.20			4.4
8/09/2023	2,200							4.4
	2,200	16-23-I-1	TO #14	Surface	0.20			4.4
8/21/2023	2,200							4.4
	2,200	16-23-I-1	TO #14	Surface	0.20			4.4
Total =	13,800							27.6

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 14

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	6,843	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/02/2023	6,750		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 14

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/01/2023	7,400							14.8
	7,400	16-23-I-1	TO #14	Surface	0.20			14.8
5/18/2023	7,400							14.8
	7,400	16-23-I-1	TO #14	Surface	0.20			14.8
6/02/2023	7,400							14.8
	7,400	16-23-I-1	TO #14	Surface	0.20			14.8
6/15/2023	7,400							14.8
	7,400	16-23-I-1	TO #14	Surface	0.20			14.8
6/29/2023	7,000							14.0
	7,000	16-23-I-1	TO #14	Surface	0.20			14.0
7/13/2023	5,000							10.0
	5,000	16-23-I-1	TO #14	Surface	0.20			10.0
7/20/2023	5,000							10.0
	5,000	16-23-I-1	TO #14	Surface	0.20			10.0
Total =	46,600							93.2

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 15

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	2,519	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/08/2023	2,475		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 15

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/01/2023	3,500							7.0
	3,500	16-20-I-1	TO #18	Surface	0.20			7.0
5/12/2023	3,500							7.0
	3,500	16-20-I-1	TO #18	Surface	0.20			7.0
5/24/2023	3,000							6.0
	3,000	16-20-I-1	TO #18	Surface	0.20			6.0
6/08/2024	3,000							6.0
	3,000	16-20-I-1	TO #18	Surface	0.20			6.0
6/22/2024	3,000							6.0
	3,000	16-20-I-1	TO #18	Surface	0.20			6.0
7/05/2024	3,000							6.0
	3,000	16-20-I-1	TO #18	Surface	0.20			6.0
7/17/2024	3,000							6.0
	3,000	16-20-I-1	TO #18	Surface	0.20			6.0
Total =	22,000							44.0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 16

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	1,304	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/08/2023	1,275		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 16

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/06/2023	2,500							5.0
	2,500	16-20-I-1	TO #18	Surface	0.20			5.0
5/16/2023	2,200							4.4
	2,200	16-20-I-1	TO #18	Surface	0.20			4.4
5/28/2023	2,200							4.4
	2,200	16-20-I-1	TO #18	Surface	0.20			4.4
6/12/2023	1,900							3.8
	1,900	16-20-I-1	TO #18	Surface	0.20			3.8
6/26/2023	1,900							3.8
	1,900	16-20-I-1	TO #18	Surface	0.20			3.8
7/03/2023	1,900							3.8
	1,900	16-20-I-1	TO #18	Surface	0.20			3.8
7/15/2023	1,900							3.8
	1,900	16-20-I-1	TO #18	Surface	0.20			3.8
Total =	14,500							29.0

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 18

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	77	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 18

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
4/24/2023	6,500							13.0
	6,500	16-20-I-1	TO #18	Surface	0.20			13.0
5/18/2023	6,500							13.0
	6,500	16-20-I-1	TO #18	Surface	0.20			13.0
6/18/2023	6,500							13.0
	6,500	16-20-I-1	TO #18	Surface	0.20			13.0
7/17/2023	6,500							13.0
	6,500	16-20-I-1	TO #18	Surface	0.20			13.0
9/10/2023	6,500							13.0
	6,500	16-20-I-1	TO #18	Surface	0.20			13.0
10/01/2023	5,800							11.6
	5,800	16-20-I-1	TO #18	Surface	0.20			11.6
Total =	38,300							76.6

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 21

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	30	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 21

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/10/2023	2,500							5.0
	2,500	16-23-I-2	TO #21	Surface	0.20			5.0
6/10/2023	2,500							5.0
	2,500	16-23-I-2	TO #21	Surface	0.20			5.0
7/03/2023	2,500							5.0
	2,500	16-23-I-2	TO #21	Surface	0.20			5.0
8/02/2023	2,500							5.0
	2,500	16-23-I-2	TO #21	Surface	0.20			5.0
9/01/2023	2,500							5.0
	2,500	16-23-I-2	TO #21	Surface	0.20			5.0
9/28/2023	2,500							5.0
	2,500	16-23-I-2	TO #21	Surface	0.20			5.0
Total =	15,000							30.0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 23

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	25 lbs
Phosphorus	0 lbs
Potassium	0 lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 23

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
4/24/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
5/18/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
6/18/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
7/17/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
8/16/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
9/16/2023	1,400							4.2
	1,400	16-23-I-3	LP #24	Surface	0.30			4.2
Total =	8,400							25.2

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 24

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	99 lbs
Phosphorus	0 lbs
Potassium	0 lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 24

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/02/2023	5,200							15.6
	5,200	16-23-I-3	LP #24	Surface	0.30			15.6
5/20/2023	5,200							15.6
	5,200	16-23-I-3	LP #24	Surface	0.30			15.6
6/02/2023	4,500							13.5
	4,500	16-23-I-3	LP #24	Surface	0.30			13.5
6/15/2023	4,500							13.5
	4,500	16-23-I-3	LP #24	Surface	0.30			13.5
6/29/2023	4,500							13.5
	4,500	16-23-I-3	LP #24	Surface	0.30			13.5
7/08/2023	4,500							13.5
	4,500	16-23-I-3	LP #24	Surface	0.30			13.5
7/21/2023	4,500							13.5
	4,500	16-23-I-3	LP #24	Surface	0.30			13.5
Total =	32,900							98.7

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 25

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	4,511	lbs
Phosphorus	66	lbs
Potassium	369	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/04/2023	1,350		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
02/27/2023	1,800		0.00	210	4.4	24.7	3,130	66	369
		16-23-L-2	0.00	210	4.4	24.7			
Total =	1,800						3,130	66	369

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 25

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
2/27/2023	950							2.9
	950	16-23-I-3	LP #24	Surface	0.30			2.9
5/15/2023	1,650							5.0
	1,650	16-23-I-3	LP #24	Surface	0.30			5.0
5/29/2023	1,650							5.0
	1,650	16-23-I-3	LP #24	Surface	0.30			5.0
6/13/2023	1,650							5.0
	1,650	16-23-I-3	LP #24	Surface	0.30			5.0
6/27/2023	1,650							5.0
	1,650	16-23-I-3	LP #24	Surface	0.30			5.0
7/07/2023	1,350							4.1
	1,350	16-23-I-3	LP #24	Surface	0.30			4.1
7/18/2023	1,350							4.1
	1,350	16-23-I-3	LP #24	Surface	0.30			4.1
Total =	10,250							30.8

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 29

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	94	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 29

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
6/08/2023	7,800							15.6
	7,800	16-23-I-6	LP # 7	Surface	0.20			15.6
6/22/2023	7,800							15.6
	7,800	16-23-I-6	LP # 7	Surface	0.20			15.6
7/14/2023	7,800							15.6
	7,800	16-23-I-6	LP # 7	Surface	0.20			15.6
8/05/2023	7,800							15.6
	7,800	16-23-I-6	LP # 7	Surface	0.20			15.6
8/21/2023	7,800							15.6
	7,800	16-23-I-6	LP # 7	Surface	0.20			15.6
9/20/2023	7,800							15.6
	7,800	16-23-I-6	LP # 7	Surface	0.20			15.6
Total =	46,800							93.6

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 30

Crop: Wheat Silage

Total Nutrients Applied To This Crop:

Nitrogen	23	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO3-N	NH4-N	TKN	
4/14/2023	7,500							22.5
	7,500	16-23-I-5	LP #29	Surface	0.30			22.5
Total =	7,500							22.5

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 30

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	21,926	lbs
Phosphorus	5,940	lbs
Potassium	17,430	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
6/26/2023	6,450		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
05/10/2023	1,640	391		76.170	1.980	0.760	2.230	15,476	5,940	17,430
			16-23-M-2	76.170	1.980	0.760	2.230			
Totals =	1,640	391						15,476	5,940	17,430

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 30

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
5/17/2023	6,500							0.0
	6,500	16-23-I-4	LP #28	Surface				0.0
6/28/2023	6,500							0.0
	6,500	16-23-I-4	LP #28	Surface				0.0
7/10/2023	6,500							0.0
	6,500	16-23-I-4	LP #28	Surface				0.0
7/25/2023	6,500							0.0
	6,500	16-23-I-4	LP #28	Surface				0.0
8/10/2023	6,500							0.0
	6,500	16-23-I-4	LP #28	Surface				0.0
Total =	32,500							0.0

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 32

Crop: Alfalfa

Total Nutrients Applied To This Crop:

Nitrogen	0 lbs
Phosphorus	0 lbs
Potassium	0 lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 32

Crop: Alfalfa

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
4/21/2023	6,200							0.0
	6,200	16-23-I-4	LP #28	Surface				0.0
5/21/2023	6,200							0.0
	6,200	16-23-I-4	LP #28	Surface				0.0
6/21/2023	6,200							0.0
	6,200	16-23-I-4	LP #28	Surface				0.0
7/20/2023	6,200							0.0
	6,200	16-23-I-4	LP #28	Surface				0.0
8/19/2023	6,200							0.0
	6,200	16-23-I-4	LP #28	Surface				0.0
9/18/2023	6,200							0.0
	6,200	16-23-I-4	LP #28	Surface				0.0
Total =	37,200							0.0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 33

Crop: Corn Silage

Total Nutrients Applied To This Crop:

Nitrogen	5,250	lbs
Phosphorus	0	lbs
Potassium	0	lbs

Commercial Fertilizer Applied To This Crop:

Date	Total Pounds Applied		
	N	P	K
5/08/2023	5,250		

Solid Manure Applications:

Date	Total Tons (as is)	Total Tons (dry)	Sample ID	Moisture (%)	Conc. from Sample Analysis (% dry)			Total Pounds Applied		
					N	P	K	N	P	K
Totals =	0	0						0	0	0

Wastewater Applications:

Date	Total Gal (1,000 Gal)	Sample ID	Conc. from Sample Analysis (mg/l)				Total Pounds Applied		
			No3-N	TKN	P	K	N	P	K
Total =									

Irrigation Applications:

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Field: 33

Crop: Corn Silage

Date	Total Gal (1,000 Gal)	Sample ID	Source ID	Source Type	Conc. from Sample Analysis (mg/l)			Total Pounds N Applied
					NO ₃ -N	NH ₄ -N	TKN	
3/01/2023	6,500							0.0
	6,500	16-23-I-4	LP #28	Surface				0.0
5/12/2023	5,900							0.0
	5,900	16-23-I-4	LP #28	Surface				0.0
5/24/2023	5,500							0.0
	5,500	16-23-I-4	LP #28	Surface				0.0
6/12/2023	5,800							0.0
	5,800	16-23-I-4	LP #28	Surface				0.0
6/22/2023	5,800							0.0
	5,800	16-23-I-4	LP #28	Surface				0.0
7/05/2023	5,800							0.0
	5,800	16-23-I-4	LP #28	Surface				0.0
7/17/2023	4,800							0.0
	4,800	16-23-I-4	LP #28	Surface				0.0
Total =	40,100							0.0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment F

**Results of Record-Keeping Requirements
Weather Conditions During Applications**

(Ref MRP Annual Report, General Section, Item 17, subitem B.3 e)

Application Weather Conditions

Field	Date	Type of Application	Weather Conditions		
			24 hr Prior	During	24 hr After
02	07/13/2023	Process Wastewater	Nominal	Nominal	Nominal
03	04/14/2023	Process Wastewater	Nominal	Nominal	Nominal
06	09/10/2023	Process Wastewater	Nominal	Nominal	Nominal
07	05/13/2023	Process Wastewater	Nominal	Nominal	Nominal
08	10/29/2023	Process Wastewater	Nominal	Nominal	Nominal
10	03/24/2023	Process Wastewater	Nominal	Nominal	Nominal
11	06/15/2023	Process Wastewater	Nominal	Nominal	Nominal
25	02/27/2023	Process Wastewater	Nominal	Nominal	Nominal
30	05/10/2023	Manure	Nominal	Nominal	Nominal

Note: Nominal applies to any weather condition that is not Precipitation or Standing Water when the application occurred .

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230
Report Period: Jan 01 through Dec 31, 2023

Attachment G

Support for Estimated Solid Manure & Wastewater and Nutrients Transferred Offsite
(Ref MRP Annual Report, General Section, Item 6)

Solid Manure Transfers

Date Of Transfer	Total Manure (tons)	Total Dry Manure (tons)	Sample ID	Moisture %	Total (% dry basis)			Total Pounds Transferred		
					N	P	K	N	P	K
Grand Total / Average	0							0	0	0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Wastewater Transfers

Date Of Transfer	Source Location	Location Aerated?	Total Gal (1,000 gal)	Sample ID	Conc. From Sample Analysis (mg/l)				EC (umhos/cm)	Total lbs Transferred			
					NO3-N	TKN	P	K		N	P	K	Salt
Grand Totals / Averages			0							0	0	0	0

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Attachment H

Tabulated Analytical Sample Data
(Ref MRP Annual Report, General Section, Item 16)

Manure Samples

Sample Date	Source Location	Sample ID	Moisture %	Total (% Dry Basis)		
				N	P	K
05/08/2023	Corral	16-23-M-1	1.70	2.11	0.31	1.99
05/08/2023	Screen Separator	16-23-M-2	76.17	1.98	0.76	2.23
10/11/2023	Screen Separator	16-23-M-3	64.46	0.35	0.08	0.14
10/11/2023	Corral	16-23-M-4	12.72	1.02	0.48	1.94
Average			38.76	1.37	0.41	1.58

Manure General Mineral Analysis

Required Once Every Two Years

Last Analysis Date: 5/11/2020

Sample Date	Source Location	Sample ID	%Na	%Ca	%Mg	%S	%Cl	%ASH

Dairy Name: Hakker Dairy LP

Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Wastewater Samples

(NO₃-N required only if lagoon is aerated)

Sample Date	Source Location	Sample ID	Location Aerated?	Total (mg/l)						EC (umhos/cm)
				NO ₃ - N	NH ₄ - N	TKN	P	K	TDS	
03/08/2023	Storage 2	16-23-L-2	N		156.0	210	4.4	24.7		6,852
05/08/2023	Storage 2	16-23-L-2	N		407.1 2.6	779 76	4.8 0.6	27.0 4.3	7,476 19	7,476 10.00
08/10/2023	Storage 2	16-23-L-3	N		311.0 2.6	628 76	8.1 0.6	21.6 4.3	5,901 19	5,901 10.00
10/11/2023	Storage 2	16-23-L-4	N		266.0 2.6	359 76	3.2 0.6	23.4 4.3		6,087 10.00
Averages					285.0	494	5.1	24.2	3,344	6,579

Wastewater General Minerals Analysis

Required Once Every Two Years

Last Analysis Date: 6/4/2018

Sample Date	Source Location	Sample ID	CO ₃ (mg/l)	HCO ₃ (mg/l)	Cl (mg/l)	SO ₄ -S (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Water Supply Samples

(NH4-N analyzed only if Field Test is positive)

Sample Date	Source ID	Source Type	Status	Sample ID	Condition	Last Gen Min Analysis	EC (umhos/cm)	NO3-N (mg/l)	NH4-N (mg/l)	TKN (mg/l)	Notes
7/17/2023	LP # 7	Surface	Active	16-23-I-6	Wet		22 1.00	< 0.2 0.20		< 1.00	
7/16/2023	LP # 9	Surface	Active	16-20-I-7	Wet		22 1.00	< 0.2 0.20		< 1.00	
7/17/2023	LP #24	Surface	Active	16-23-I-3	Wet		21 1.00	0.3 0.20		< 1.00	
9/17/2023	LP #28	Surface	Active	16-23-I-4	Wet		21 1.00	0.20		< 1.00	
7/13/2023	LP #29	Surface	Active	16-23-I-5	Wet		21 1.00	0.3 0.20		< 1.00	
7/17/2023	TO #14	Surface	Active	16-23-I-1	Wet		20 1.00	< 0.2 0.20		< 1.00	
	TO #18	Surface	Active								
7/17/2023	TO #21	Surface	Active	16-23-I-2	Wet		20 1.00	< 0.2 0.20		< 1.00	
	Mom's Domestic	Well	Active			10/14/2021					
	Well # 1	Well	Active			8/17/2016					
	Well # 2	Well	Active			8/17/2016					
	Well # 3	Well	Active			8/17/2016					
	Well # 4	Well	Active			8/17/2016					
	Well # 5	Well	Active			8/17/2016					
	Well # 6	Well	Active			5/26/2016					

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Sample Date	Source ID	Source Type	Status	Sample ID	Condition	Last Gen Min Analysis	EC (umhos/cm)	NO ₃ -N (mg/l)	NH ₄ -N (mg/l)	TKN (mg/l)	Notes
	Well # 7	Well	Active			8/17/2022					
	Well # 8	Well	Active			8/17/2022					
	Well # 9	Well	Active			8/17/2022					
	Well #10	Well	Active			8/17/2022					
	Well #19	Well	Active			11/27/2018					
	Well #20	Well	Active			3/21/2022					
	Well #23	Well	Active			3/21/2022					
	Well #24	Well	Active			11/27/2018					
	Well #26	Well	Active			4/30/2020					
	Well #27	Well	Active			2/25/2020					
	Well #27-V	Well	Active			7/11/2013					
	Well #28	Well	Active			10/16/2015					
	Well #28-J	Well	Active			11/27/2018					
	Well #28-R	Well	Active			11/27/2018					
	Well #29	Well	Active			10/16/2015					
	Well #30-D	Well	Active			4/19/2021					
	Well #31	Well	Active			5/03/2019					

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Sample Date	Source ID	Source Type	Status	Sample ID	Condition	Last Gen Min Analysis	EC (umhos/cm)	NO ₃ -N (mg/l)	NH ₄ -N (mg/l)	TKN (mg/l)	Notes
	Well #32-D	Well	Active			12/12/2019					
	Well #33	Well	Active			5/03/2019					
	Well #34	Well	Active			5/03/2019					
	Well #35	Well	Active			5/03/2019					
	Well #36	Well	Active			5/03/2019					
	Well #37	Well	Active			4/30/2020					
	Well #38	Well	Active								
	Well #39	Well	Active			4/11/2022					

UTS - Unable To Sample (well needing repair, power disconnected, no ditch water received, etc.)

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Water Supply General Minerals Analysis
Required Every Five Years (20% Anually Allowed)

Sample Date	Source ID	Source Type	Sample ID	TDS (mg/l)	CO3 (mg/l)	HCO3 (mg/l)	Cl (mg/l)	SO4-S (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Soil Samples
Soluable Phosphorus (PO4-P) required once every five years (20% anually allowed)
Remainder of soil analysis is recommended but not required

Sample Date	Field ID	Sample Location	Sample ID	Last PO4-P Analysis	Depth 0 to 1 ft					Depth 1 to 2 ft
					NO3-N (mg/kg)	PO4-P (mg/kg)	K (AA) (mg/kg)	EC (dS/m)	%OM	NO3-N (mg/kg)
	01									
	02									
	03									
	04									
	06									
	07									
	08									
	09									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	21									
	23									
	24									
	25									

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Sample Date	Field ID	Sample Location	Sample ID	Last PO4-P Analysis	Depth 0 to 1 ft					Depth 1 to 2 ft
					NO3-N (mg/kg)	PO4-P (mg/kg)	K (AA) (mg/kg)	EC (dS/m)	%OM	NO3-N (mg/kg)
	28									
	29									
	30									
	31									
	32									
	33									

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Plant Tissue Samples
 Harvest

Sample Date	Field ID	Crop	Sample Location	Sample ID	Volume % Moisture	Total (% Dry Basis)			
						N	P	K	ASH
08/07/2023	01	Alfalfa		16-23-P-24	4.26 1.52	2.97 0.050	0.32 0.010	3.04 0.020	12.70 0.67
08/07/2023	02	Alfalfa		16-23-P-25	3.00 1.52	3.00 0.050	0.35 0.010	1.68 0.020	12.30 0.67
08/07/2023	03	Alfalfa		16-23-P-26	3.68 1.52	2.23 0.050	0.32 0.010	2.35 0.020	10.30 0.67
08/07/2023	04	Corn Silage		16-23-P-5	61.99 1.52	1.73 0.050	0.27 0.010	1.35 0.020	5.11 0.67
08/07/2023	07	Corn Silage		16-23-P-6	59.02 1.52	1.67 0.050	0.36 0.010	1.37 0.020	7.80 0.67
05/11/2023	08	Alfalfa		16-23-P-19	6.72 1.52	3.43 0.050	0.38 0.010	3.14 0.020	11.42 0.67
08/07/2023	09	Alfalfa		16-23-P-27	3.78 1.52	2.63 0.050	0.28 0.010	1.41 0.020	9.40 0.67
08/07/2023	10	Corn Silage		16-23-P-7	65.83 1.52	1.13 0.050	0.30 0.010	1.42 0.020	5.21 0.67
05/11/2023	11	Alfalfa		16-23-P-20	7.78 1.52	2.35 0.050	0.35 0.010	4.05 0.020	11.20 0.67
05/11/2023	12	Wheat Silage		16-23-P-1	61.87	1.34	0.22	1.55	
09/11/2023	12	Corn Silage		16-23-P-14	64.61	1.83	0.37	1.62	
05/11/2023	13	Wheat Silage		16-23-P-2	61.70 1.52	1.83 0.050	0.28 0.010	1.50 0.020	7.22 0.67
05/11/2023	13	Oat Hay		16-23-P-3	5.79 1.52	1.67 0.050	0.23 0.010	1.54 0.020	7.22 0.67
05/11/2023	13	Wheat Silage		16-23-P-4	62.44 1.52	0.89 0.050	0.25 0.010	1.44 0.020	7.22 0.67

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
 Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Sample Date	Field ID	Crop	Sample Location	Sample ID	Volume % Moisture	Total (% Dry Basis)			
						N	P	K	ASH
09/11/2023	13	Corn Silage		16-23-P-15	70.39 1.52	2.13 0.050	0.28 0.010	1.13 0.020	7.22 0.67
08/07/2023	14	Corn Silage		16-23-P-8	68.27 1.52	1.41 0.050	0.21 0.010	1.42 0.020	6.50 0.67
08/07/2023	15	Corn Silage		16-23-P-9	68.17 1.52	1.35 0.050	0.29 0.010	1.69 0.020	6.01 0.67
08/07/2023	16	Corn Silage		16-23-P-10	62.33 1.52	1.63 0.050	0.35 0.010	1.38 0.020	5.80 0.67
09/11/2023	17	Corn Silage		16-23-P-16	65.83 1.52	2.33 0.050	0.25 0.010	1.08 0.020	7.40 0.67
05/11/2023	18	Alfalfa		16-23-P-21	6.39 1.52	2.10 0.050	0.31 0.010	3.26 0.020	11.42 0.67
05/11/2023	21	Alfalfa		16-23-P-22	6.06 1.52	1.81 0.050	0.43 0.010	4.00 0.020	10.67 0.67
05/11/2023	23	Alfalfa		16-23-P-23	13.50 1.52	4.11 0.050	0.49 0.010	4.99 0.020	12.90 0.67
08/07/2023	24	Corn Silage		16-23-P-11	57.24 1.52	1.62 0.050	0.26 0.010	1.44 0.020	9.60 0.67
08/07/2023	25	Corn Silage		16-23-P-12	60.73 1.52	1.45 0.050	0.30 0.010	1.34 0.020	5.10 0.67
08/07/2023	29	Alfalfa		16-23-P-28	4.90 1.52	3.26 0.050	0.32 0.010	2.27 0.020	9.50 0.67
05/11/2023	30	Wheat Silage		16-23-P-18	61.87	1.34	0.22	1.55	
09/11/2023	30	Corn Silage		16-23-P-17	66.21 1.52	1.87 0.050	0.28 0.010	1.13 0.020	6.10 0.67
08/07/2023	32	Alfalfa		16-23-P-29	4.27 1.52	5.25 0.050	0.33 0.010	2.31 0.020	12.00 0.67
08/07/2023	33	Corn Silage		16-23-P-13	62.33 1.52	1.34 0.050	0.25 0.010	1.27 0.020	5.38 0.67

Dairy Name: Hakker Dairy LP
Dairy Address: 12499 Idaho Ave
Hanford, CA 93230

Report Period: Jan 01 through Dec 31, 2023

Plant Tissue Samples
Mid-Season - Optional analysis, required only if fertilizing in excess of 1.4 nitrogen balance

Sample Date	Field ID	Sample Location	Description	Sample ID	Leaf %N (dry)	Grain Stem NO3-N (mg/kg)



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

AGG2088

7/31/2023

Invoice: AG17571

Roger Hakker
Hakker Brothers Dairy
12499 Idaho Ave
Hanford, CA 93230

RE: Report for AGG2088 RB5 Surface

Dear Roger Hakker,

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 7/17/2023. 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, Mary Thao, at 559-497-2888.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Mary Thao", written over a light gray rectangular background.

Mary Thao, Project Manager



Accredited in Accordance with NELAP
ORELAP #4021

Case Narrative

Project and Report Details	Invoice Details
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Client: Hakker Brothers Dairy
Report To: Roger Hakker
Project #: RB5-Surface
Received: 7/17/2023 - 16:00
Report Due: 7/31/2023

Invoice To: Hakker Brothers Dairy
Invoice Attn: Roger Hakker
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 27.8

Custody Seals
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received On Blue Ice
 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:
Roger Hakker	FINAL.RPT	
Madison Looper	FINAL.RPT	

**AGG2088****RB5 Surface**

RB5-Surface

Certificate of Analysis**Sample ID:** AGG2088-01**Sampled By:** Madison Looper**Sample Description:** Mccrary Ditch**Sample Date - Time:** 07/17/2023 - 10:25**Matrix:** Surface 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	20	1.0	umhos/cm	1	AGG1088	07/18/23	07/18/23	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AGG1038	07/18/23 03:28	07/18/23	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	AGG1038	07/18/23 03:28	07/18/23	
Total Dissolved Solids	SM 2540C	32	5.0	mg/L	1	AGG1131	07/18/23	07/18/23	
Total Kjeldahl Nitrogen	EPA 351.2	ND	1.0	mg/L	1	AGG1212	07/19/23	07/20/23	
Total Nitrogen, IC	CALC	ND	1.0	mg/L					

**AGG2088****RB5 Surface**

RB5-Surface

Certificate of Analysis**Sample ID:** AGG2088-02**Sampled By:** Madison Looper**Sample Description:** New Deal Ditch**Sample Date - Time:** 07/17/2023 - 10:35**Matrix:** Surface 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	21	1.0	umhos/cm	1	AGG1088	07/18/23	07/18/23	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AGG1038	07/18/23 03:42	07/18/23	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	AGG1038	07/18/23 03:42	07/18/23	
Total Dissolved Solids	SM 2540C	23	5.0	mg/L	1	AGG1131	07/18/23	07/18/23	
Total Kjeldahl Nitrogen	EPA 351.2	ND	1.0	mg/L	1	AGG1253	07/20/23	07/21/23	
Total Nitrogen, IC	CALC	ND	1.0	mg/L					

**AGG2088****RB5 Surface**

RB5-Surface

Certificate of Analysis

Sample ID: AGG2088-03
Sampled By: Madison Looper
Sample Description: 16th Ave Ditch

Sample Date - Time: 07/17/2023 - 10:30
Matrix: Surface 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	23	1.0	umhos/cm	1	AGG1088	07/18/23	07/18/23	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AGG1038	07/18/23 03:57	07/18/23	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	AGG1038	07/18/23 03:57	07/18/23	
Total Dissolved Solids	SM 2540C	27	5.0	mg/L	1	AGG1131	07/18/23	07/18/23	
Total Kjeldahl Nitrogen	EPA 351.2	ND	1.0	mg/L	1	AGG1253	07/20/23	07/21/23	
Total Nitrogen, IC	CALC	ND	1.0	mg/L					

**AGG2088****RB5 Surface**

RB5-Surface

Certificate of Analysis**Sample ID:** AGG2088-04**Sampled By:** Madison Looper**Sample Description:** Lone Oak Ditch**Sample Date - Time:** 07/17/2023 - 10:40**Matrix:** Surface 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	22	1.0	umhos/cm	1	AGG1088	07/18/23	07/18/23	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AGG1038	07/18/23 04:12	07/18/23	
Nitrite as N	EPA 300.0	ND	0.050	mg/L	1	AGG1038	07/18/23 04:12	07/18/23	
Total Dissolved Solids	SM 2540C	40	5.0	mg/L	1	AGG1131	07/18/23	07/18/23	
Total Kjeldahl Nitrogen	EPA 351.2	ND	1.0	mg/L	1	AGG1253	07/20/23	07/21/23	
Total Nitrogen, IC	CALC	ND	1.0	mg/L					



AGG2088

RB5 Surface

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

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

Batch: AGG1038

Prepared: 7/17/2023

Prep Method: Method Specific Preparation

Analyst: DXR

Blank (AGG1038-BLK1)

Nitrate as N	ND	0.23	mg/L							07/17/23	
Nitrite as N	ND	0.050	mg/L							07/17/23	

Blank Spike (AGG1038-BS1)

Nitrate as N	22	0.23	mg/L	23	ND	97	90-110			07/17/23	
Nitrite as N	1.0	0.050	mg/L	1.0	ND	101	90-110			07/17/23	

Matrix Spike (AGG1038-MS1), Source: AGG1995-02

Nitrate as N	10	0.23	mg/L	11	ND	91	80-120			07/17/23	
Nitrite as N	0.49	0.050	mg/L	0.50	ND	98	80-120			07/17/23	

Matrix Spike (AGG1038-MS2), Source: AGG2016-02

Nitrate as N	12	0.23	mg/L	11	1.2	94	80-120			07/18/23	
Nitrite as N	0.49	0.050	mg/L	0.50	ND	97	80-120			07/18/23	

Matrix Spike Dup (AGG1038-MSD1), Source: AGG1995-02

Nitrate as N	10	0.23	mg/L	11	ND	92	80-120	2	20	07/17/23	
Nitrite as N	0.50	0.050	mg/L	0.50	ND	100	80-120	2	20	07/17/23	

Matrix Spike Dup (AGG1038-MSD2), Source: AGG2016-02

Nitrate as N	12	0.23	mg/L	11	1.2	97	80-120	2	20	07/18/23	
Nitrite as N	0.50	0.050	mg/L	0.50	ND	100	80-120	3	20	07/18/23	

EPA 351.2 - Quality Control

Batch: AGG1212

Prepared: 7/19/2023

Prep Method: Method Specific Preparation

Analyst: ERA

Blank (AGG1212-BLK1)

Total Kjeldahl Nitrogen	ND	1.0	mg/L							07/20/23	
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Blank Spike (AGG1212-BS1)

Total Kjeldahl Nitrogen	9.7	1.0	mg/L	10	ND	97	90-110			07/20/23	
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Blank Spike Dup (AGG1212-BSD1)

Total Kjeldahl Nitrogen	10	1.0	mg/L	10	ND	100	90-110	3	10	07/20/23	
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Matrix Spike (AGG1212-MS1), Source: AGG1713-01

Total Kjeldahl Nitrogen	13	1.0	mg/L	10	3.5	95	90-110			07/20/23	
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Matrix Spike (AGG1212-MS2), Source: AGG2079-02

Total Kjeldahl Nitrogen	9.1	1.0	mg/L	10	ND	91	90-110			07/20/23	
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Matrix Spike Dup (AGG1212-MSD1), Source: AGG1713-01

Total Kjeldahl Nitrogen	13	1.0	mg/L	10	3.5	95	90-110	0	10	07/20/23	
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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.

AGG2088 FINAL 07312023 1814

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

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

Batch: AGG1212

Prepared: 7/19/2023

Prep Method: Method Specific Preparation

Analyst: ERA

Matrix Spike Dup (AGG1212-MSD2), Source: AGG2079-02

Total Kjeldahl Nitrogen	9.2	1.0	mg/L	10	ND	92	90-110	1	10	07/20/23
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EPA 351.2 - Quality Control

Batch: AGG1253

Prepared: 7/20/2023

Prep Method: Method Specific Preparation

Analyst: ERA

Blank (AGG1253-BLK1)

Total Kjeldahl Nitrogen	ND	1.0	mg/L							07/21/23
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Blank Spike (AGG1253-BS1)

Total Kjeldahl Nitrogen	9.4	1.0	mg/L	10	ND	94	90-110			07/21/23
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Blank Spike Dup (AGG1253-BSD1)

Total Kjeldahl Nitrogen	9.4	1.0	mg/L	10	ND	94	90-110	1	10	07/21/23
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Matrix Spike (AGG1253-MS1), Source: AGG1691-02

Total Kjeldahl Nitrogen	8.0	1.0	mg/L	10	ND	80	90-110			07/21/23	MS1.0 Low
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Matrix Spike (AGG1253-MS2), Source: AGG2148-04

Total Kjeldahl Nitrogen	67	5.0	mg/L	10	62	44	90-110			07/21/23	MS1.0 Low
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Matrix Spike Dup (AGG1253-MSD1), Source: AGG1691-02

Total Kjeldahl Nitrogen	7.9	1.0	mg/L	10	ND	79	90-110	1	10	07/21/23	MS1.0 Low
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Matrix Spike Dup (AGG1253-MSD2), Source: AGG2148-04

Total Kjeldahl Nitrogen	70	5.0	mg/L	10	62	76	90-110	5	10	07/21/23	MS1.0 Low
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SM 2510B - Quality Control

Batch: AGG1088

Prepared: 7/18/2023

Prep Method: Method Specific Preparation

Analyst: EFG

Blank Spike (AGG1088-BS1)

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	99	90-110			07/18/23
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Blank Spike Dup (AGG1088-BSD1)

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	99	90-110	1	5	07/18/23
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Duplicate (AGG1088-DUP1), Source: AGG1977-01

Conductivity @ 25C	210	1.0	umhos/cm		210			1	5	07/18/23
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SM 2540C - Quality Control

Batch: AGG1131

Prepared: 7/18/2023

Prep Method: Method Specific Preparation

Analyst: SYY

Blank (AGG1131-BLK1)

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.

AGG2088 FINAL 07312023 1814

**AGG2088****RB5 Surface**

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

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

Batch: AGG1131

Prepared: 7/18/2023

Prep Method: Method Specific Preparation

Analyst: SYU

Blank (AGG1131-BLK1)

Total Dissolved Solids	ND	5.0	mg/L							07/18/23	
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Blank Spike (AGG1131-BS1)

Total Dissolved Solids	1000		mg/L	1000		103	70-130			07/18/23	
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Duplicate (AGG1131-DUP1), Source: AGG2116-01

Total Dissolved Solids	350	5.0	mg/L		340			1	10	07/18/23	
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Duplicate (AGG1131-DUP2), Source: AGG2116-02

Total Dissolved Solids	330	5.0	mg/L		330			2	10	07/18/23	
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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.

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	4021-021
State of Nevada	CA000792022-1	State of Oregon - NELAP	4021-021
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	4119-007	State of Oregon - NELAP	4119-007

Vancouver

NELAP certified	WA100008-016	State of Oregon - NELAP	WA100008-016
State of Washington	C824-22		



Sample Integrity

BSK Bottles: Yes No

Page 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$			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)?			Yes	No	NA
	Did all bottles arrive unbroken and intact?			Yes	No		TB Received? (Check Method Below)			Yes	No	NA
	Did all bottle labels agree with COC?			Yes	No		Was a sufficient amount of sample received?			Yes	No	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?			Yes	NA		Do samples have a hold time <72 hours?			Yes	No	
Bottles Received	250ml(A) 500ml(B) 1Liter(C) 40ml/VOA(V) 125ml(D)			Checks*	Passed?		1-4					
	Bacti Na ₂ S ₂ O ₃			—	—		1C					
	None (P) White Cap			—	—							
	Cr6 (P) Lt. Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW			Cl, pH > 8	P F							
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW			pH 9.3-9.7	P F							
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***			pH 9.0-9.5	P F							
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label			—	—							
	H ₂ SO ₄ (P) or (AG) Yellow Cap/Label			pH < 2	P F		1A					
	NaOH (P) Green Cap			Cl, pH > 10	P F							
	NaOH + ZnAc (P)			pH > 9	P F							
	Dissolved Oxygen 300ml (g)			—	—							
	None (AG) 608/8081/8082, 625, 632/8321, 8151, 8270			—	—							
	HCl (AG) Lt. Blue Label O&G, Diesel, TCP			—	—							
	Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525			—	—							
	Na ₂ SO ₃ 250mL (AG) Neon Green Label 515			—	—							
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549			—	—							
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524			—	—							
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547			—	—							
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531			pH < 3	P F							
	NH ₄ 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)			—	—							
	H ₃ PO ₄ (CG) Salmon Label			—	—							
	Trizma - EPA 537, 1 Light Blue Label FB			---	---							
	Ammonia Acetate - EPA 533 Purple Label FB			---	---							
	Bottled Water			—	—							
	Asbestos 1L (P) w/ Foil / LL Metals Bottle			—	—							
	Clear Glass			—	—							
	OTHER:			—	—							
Split	Container	Preservative	Lot #	Initials	Date/Time	Preservation Check						
	S P					pH Lot # AG104945						
Comments	*Preservation check completed by lab performing analysis.					✓ Indicates Blanks Received						
	Labeled by:					504 ___ 524.2 ___ TTHM ___ 537/533 ___ TCP ___						
Labels Checked by:					✓ MS/MSD Received Method: _____							

Scanned: _____ Rush/Short HT Page: _____ Time: _____

Turnaround Time Request
☐ Standard - 10 business days
☐ Rush (Surcharge may apply)
 Date needed:



Company/Client Name: **Hakker Bros Dairy**

Report Attention: **Robert Hakker**

Temp: **21°C** Invoice To: **#17**

Phone:

Fax:

Address: **12499 Lake Ave**
 City: **Hanford**

State: **CA** Zip: **93820**

Email:

Project:

Project #:

How would you like to receive your completed results?
☐ E-Mail ☐ Fax ☐ Mail

Reporting Options:
☐ Trace (J-Flag) ☐ Swamp ☐ EDD Type: _____

Regulatory Carbon Copies
☐ SWRCB (Drinking Water)
☐ Merced Co
☐ Madera Co
☐ Fresno Co
☐ Tulare Co
☐ Other: _____

Regulatory Compliance
☐ EDT to California SWRCB (Drinking Water)
 System Number: _____
☐ Geotracker #: _____

Sampler Name (Printed/Signature): **Makson Lopez**

Matrix: **SW=Surface Water BW=Boiled Water GW=Ground Water WW=Waste Water STW=Storm Water DW=Drinking Water SO=Solid**

Sample Description:

Sampled:

Matrix:

Comments / Station Code / WTRAX

#	Sample Description	Date	Time	Matrix	Comments / Station Code / WTRAX
1	McCray Ditch	7/17	10:25	SW	
2	New Deal Ditch		10:35		
3	10th Ave Ditch		10:30		
4	Love Oak Ditch		10:40		

7-17-23

Relinquished by (Signature and Printed Name): **Makson Lopez** Company: **JM Lord Inc**

Relinquished by (Signature and Printed Name):

Company:

Date:

Time:

Received by (Signature and Printed Name):

Date:

Time:

Payment Received at Delivery:

Amount:

PIA#:

Check / Int. Cash

Shipping Method:

ONPAC Blue

UPS

GSO

WALK-IN

FED EX

Courier:

Date:

Time:

Payment Received at Delivery:

Date:

Time:

Payment Received at Delivery:

Amount:

PIA#:

Check / Int. Cash

Payment for services rendered as noted herein and due in full within 30 days from the date invoiced. If not to pay, 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/BSKLabFormsConditions.pdf



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

AGJ3459

11/06/2023

Invoice: AG26237

Roger Hakker
Hakker Brothers Dairy
12499 Idaho Ave
Hanford, CA 93230

RE: Report for AGJ3459 RB5 Well

Dear Roger Hakker,

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 10/24/2023. 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,

A handwritten signature in black ink, appearing to read "Adam (M)", written over a horizontal line.

Adam Trevarrow, Project Manager



Accredited in Accordance with NELAP
ORELAP #4021



Case Narrative

Project and Report Details

Client: Hakker Brothers Dairy
Report To: Roger Hakker
Project #: Dairy Wells
Received: 10/24/2023 - 15:00
Report Due: 11/07/2023

Invoice Details

Invoice To: Hakker Brothers Dairy
Invoice Attn: Roger Hakker
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 19.9

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

Detailed Narrative

MCL Exceedance Client Notification

MCL exceedance(s) for: Nitrate
Client Sample ID(s): Well #3
Reported to: Dustie Christensen
Notification via: Email
Date: 10-26-2023
Time: 09:38
Initials: LMC

Data Qualifiers

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

B2.0 Analyte present in the method blank above the method detection limit (MDL). Laboratory does not determine batch acceptance on detections below the reporting limit (RL).

Report Distribution

Recipient(s)	Report Format	CC:
Roger Hakker	FINAL.RPT	
Madison Looper	FINAL.RPT	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-01**Sampled By:** Client**Sample Description:** Mom's DW**Sample Date - Time:** 10/24/2023 - 10:25**Matrix:** Ground 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	1400	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AGJ1666	10/25/23 03:16	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-02**Sampled By:** Client**Sample Description:** Well #1**Sample Date - Time:** 10/24/2023 - 10:35**Matrix:** Ground 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	750	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	0.46	0.23	mg/L	1	AGJ1666	10/25/23 00:40	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-03**Sampled By:** Client**Sample Description:** Well #3**Sample Date - Time:** 10/24/2023 - 10:45**Matrix:** Ground 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	1100	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	10	0.23	mg/L	1	AGJ1676	10/25/23 02:46	10/25/23	



AGJ3459

RB5 Well

Dairy Wells

Certificate of Analysis

Sample ID: AGJ3459-04

Sampled By: Client

Sample Description: Sam's DW

Sample Date - Time: 10/24/2023 - 10:55

Matrix: Ground 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	380	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	0.59	0.23	mg/L	1	AGJ1676	10/25/23 03:02	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-05**Sampled By:** Client**Sample Description:** Domestic Well #30D**Sample Date - Time:** 10/24/2023 - 11:15**Matrix:** Ground 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	970	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	3.3	0.23	mg/L	1	AGJ1666	10/25/23 00:09	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-06**Sampled By:** Client**Sample Description:** Domestic Well #32D**Sample Date - Time:** 10/24/2023 - 11:30**Matrix:** Ground 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	1200	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	0.79	0.23	mg/L	1	AGJ1666	10/24/23 23:53	10/24/23	



AGJ3459

RB5 Well

Dairy Wells

Certificate of Analysis

Sample ID: AGJ3459-07

Sampled By: Client

Sample Description: Domestic Well #28J

Sample Date - Time: 10/24/2023 - 11:45

Matrix: Ground 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	630	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	7.8	0.23	mg/L	1	AGJ1676	10/25/23 02:15	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-08**Sampled By:** Client**Sample Description:** Domestic Well #28R**Sample Date - Time:** 10/24/2023 - 11:55**Matrix:** Ground 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	520	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	7.1	0.23	mg/L	1	AGJ1676	10/25/23 02:31	10/25/23	



AGJ3459

RB5 Well

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

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

Batch: AGJ1666

Prepared: 10/24/2023

Prep Method: Method Specific Preparation

Analyst: AAS

Blank (AGJ1666-BLK1)

Nitrate as N	ND	0.23	mg/L							10/24/23	
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Blank Spike (AGJ1666-BS1)

Nitrate as N	22	0.23	mg/L	23	ND	97	90-110			10/24/23	
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Matrix Spike (AGJ1666-MS1), Source: AGJ3368-01

Nitrate as N	12	0.23	mg/L	11	1.3	98	80-120			10/24/23	
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Matrix Spike (AGJ1666-MS2), Source: AGJ3474-05

Nitrate as N	15	0.23	mg/L	11	3.7	100	80-120			10/25/23	
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Matrix Spike Dup (AGJ1666-MSD1), Source: AGJ3368-01

Nitrate as N	12	0.23	mg/L	11	1.3	99	80-120	1	20	10/24/23	
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Matrix Spike Dup (AGJ1666-MSD2), Source: AGJ3474-05

Nitrate as N	15	0.23	mg/L	11	3.7	104	80-120	2	20	10/25/23	
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EPA 300.0 - Quality Control

Batch: AGJ1676

Prepared: 10/24/2023

Prep Method: Method Specific Preparation

Analyst: IDM

Blank (AGJ1676-BLK1)

Nitrate as N	ND	0.23	mg/L							10/24/23	B2.0
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Blank Spike (AGJ1676-BS1)

Nitrate as N	24	0.23	mg/L	23	ND	105	90-110			10/24/23	
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Matrix Spike (AGJ1676-MS1), Source: AGJ3368-03

Nitrate as N	13	0.23	mg/L	11	1.3	105	80-120			10/25/23	
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Matrix Spike (AGJ1676-MS2), Source: AGJ3474-02

Nitrate as N	12	0.23	mg/L	11	0.37	101	80-120			10/25/23	
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Matrix Spike Dup (AGJ1676-MSD1), Source: AGJ3368-03

Nitrate as N	13	0.23	mg/L	11	1.3	105	80-120	1	20	10/25/23	
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Matrix Spike Dup (AGJ1676-MSD2), Source: AGJ3474-02

Nitrate as N	12	0.23	mg/L	11	0.37	103	80-120	2	20	10/25/23	
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SM 2510B - Quality Control

Batch: AGJ1854

Prepared: 10/27/2023

Prep Method: Method Specific Preparation

Analyst: CEG

Blank Spike (AGJ1854-BS1)

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.

AGJ3459 FINAL 11062023 1527

**AGJ3459****RB5 Well**

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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SM 2510B - Quality Control

Batch: AGJ1854

Prepared: 10/27/2023

Prep Method: Method Specific Preparation

Analyst: CEG

Blank Spike (AGJ1854-BS1)

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	98	90-110			10/27/23
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Blank Spike Dup (AGJ1854-BSD1)

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	99	90-110	1	5	10/27/23
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Duplicate (AGJ1854-DUP1), Source: AGJ3652-01

Conductivity @ 25C	1800	1.0	umhos/cm		1800			3	5	10/27/23
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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.

Certificate of Analysis**Definitions**

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%: Percent
NR: Non-Reportable

MDL: Method Detection Limit
RL: Reporting Limit: DL x Dilution
ND: None Detected below MRL/MDL
pCi/L: PicoCuries per Liter
RL Mult: RL Multiplier
MCL: Maximum Contaminant Limit

MDA95: Min. Detected Activity
MPN: Most Probable Number
CFU: Colony Forming Unit
Absent: Less than 1 CFU/100mLs
Present: 1 or more CFU/100mLs
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	CA000792024-03	State of Oregon - NELAP	4021-022
EPA UCMR5	CA00079	State of Washington	C997-23

Sacramento

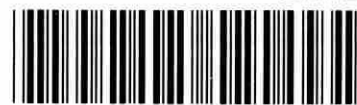
State of California - ELAP	1180-S1
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San Bernardino

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		



10

Sample Integrity

BSK Bottles: Yes NoPage 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$		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)?		Yes	No	NA
	Did all bottles arrive unbroken and intact?		Yes	No		TB Received? (Check Method Below)		Yes	No	NA
	Did all bottle labels agree with COC?		Yes	No		Was a sufficient amount of sample received?		Yes	No	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?		Yes	NA		Do samples have a hold time <72 hours?		Yes	No	
Bottles Received <small>means preservation/chlorine checks are either N/A or are performed in the lab</small>	250ml(A) 500ml(B) 1Liter(C) 40mlVOA(V) 125ml(D)		Checks*	Passed?		PM: 1-8				
	Bacti Na ₂ S ₂ O ₃		—	—		1A				
	None (P) White Cap		—	—						
	Cr6 (P) LL Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW		Cl, pH > 8	P F						
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW		pH 9.3-9.7	P F						
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***		pH 9.0-9.5	P F						
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label		—	—						
	H ₂ SO ₄ (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) 608/8081/8082, 625, 632/8321, 8151, 8270		—	—						
	HCl (AG) Lt. Blue Label O&G, Diesel, TCP		—	—						
	Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525		—	—						
	Na ₂ SO ₃ 250mL (AG) Neon Green Label 515		—	—						
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549		—	—						
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524		—	—						
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547		—	—						
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531		pH < 3	P F						
	NH ₄ 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)		—	—						
	H ₃ PO ₄ (CG) Salmon Label		—	—						
	Trizma - EPA 537.1 Light Blue Label FB		—	—						
	Ammonia Acetate - EPA 533 Purple Label FB		—	—						
	Bottled Water		—	—						
	Asbestos 1L (P) w/ Foil / LL Metals Bottle		—	—						
Clear Glass		—	—							
OTHER:		—	—							
Split	Container	Preservative	Lot #	Initials	Date/Time	Preservation Check				
	S P					pH Lot #				
	S P					Cl Lot #				
Comments	*Preservation check completed by lab performing analysis.					✓ Indicates Blanks Received				
	504 ___ 524.2 ___ TTHM ___ 537/533 ___ TCP ___					✓ MS/MSD Received Method: _____				
Labeled by:		Labels Checked by:								

Scanned: CW

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: _____



Required Fields

Temp: 19.9 °C #77

Phone:

Fax:

Company/Client Name:		Report Attention:		Invoice To:		Phone:		Fax:	
Hakker Dairy		Roder Hakker		PO#:					
Address:		Additional cc:		State:		Zip:		E-mail:	
1249 Idans Ave.		distic@jmlordinc.com		CA		93330			
Project:		Project #:		How would you like to receive your completed results?					
Dairy Wells				<input type="checkbox"/> E-Mail <input type="checkbox"/> Fax <input type="checkbox"/> Mail					
Reporting Options:		Regulatory Carbon Copies		Regulatory Compliance					
<input type="checkbox"/> Trace (U-Flag) <input type="checkbox"/> Swamp <input type="checkbox"/> EDD Type: _____		<input type="checkbox"/> SWRCB (Drinking Water) <input type="checkbox"/> Merced Co <input type="checkbox"/> Madera Co <input type="checkbox"/> Tulare Co <input type="checkbox"/> Other: _____		<input type="checkbox"/> EDT to California SWRCB (Drinking Water) <input type="checkbox"/> System Number: _____					
Sampler Name (Printed/Signature):		Geotracker #: _____							
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	Time	Matrix*	Comments / Station Code / WTRAX				
1	mom's DW	10/24/23	10:25	GW					
2	well #1		10:35						
3	well #3		10:45						
4	Sam's DW		10:55						
5	Domestic well #30D		11:15						
6	Domestic well #32D		11:30						
7	Domestic well #285		11:45						
8	Domestic well #288		11:55						
Relinquished by (Signature and Printed Name)		Company		Date		Time		Received by (Signature and Printed Name)	
Dustin Christensen		JM Lord Inc		10/24/23		10:58			
Relinquished by (Signature and Printed Name)		Company		Date		Time		Received by (Signature and Printed Name)	
Received for Lab by (Signature and Printed Name)		Date		Time		Payment Received at Delivery:		Amount:	
[Signature]		10/24/23		K80		Date:			
Shipping Method:		ONTRAC		UPS		GSO		FED EX	
Cooling Method:		Wet		Blue		None		Custody Seal: Y / N	
								Chilling Process Begun: Y / N	
								PIA#:	
								Check / Int. Cash	

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. 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



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

AGJ3459

11/06/2023

Invoice: AG26237

Roger Hakker
Hakker Brothers Dairy
12499 Idaho Ave
Hanford, CA 93230

RE: Report for AGJ3459 RB5 Well

Dear Roger Hakker,

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 10/24/2023. 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,

A handwritten signature in black ink, appearing to read "Adam (m)", written over a horizontal line.

Adam Trevarrow, Project Manager



Accredited in Accordance with NELAP
ORELAP #4021



Case Narrative

Project and Report Details

Client: Hakker Brothers Dairy
Report To: Roger Hakker
Project #: Dairy Wells
Received: 10/24/2023 - 15:00
Report Due: 11/07/2023

Invoice Details

Invoice To: Hakker Brothers Dairy
Invoice Attn: Roger Hakker
Project PO#: -

Sample Receipt Conditions

Cooler: Default Cooler
Temperature on Receipt °C: 19.9

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

Detailed Narrative

MCL Exceedance Client Notification

MCL exceedance(s) for: Nitrate

Client Sample ID(s): Well #3

Reported to: Dustie Christensen

Notification via: Email

Date: 10-26-2023

Time: 09:38

Initials: LMC

Data Qualifiers

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

B2.0 Analyte present in the method blank above the method detection limit (MDL). Laboratory does not determine batch acceptance on detections below the reporting limit (RL).

Report Distribution

Recipient(s)	Report Format	CC:
Roger Hakker	FINAL.RPT	
Madison Looper	FINAL.RPT	



AGJ3459

RB5 Well

Dairy Wells

Certificate of Analysis

Sample ID: AGJ3459-01

Sampled By: Client

Sample Description: Mom's DW

Sample Date - Time: 10/24/2023 - 10:25

Matrix: Ground 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	1400	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	ND	0.23	mg/L	1	AGJ1666	10/25/23 03:16	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-02**Sampled By:** Client**Sample Description:** Well #1**Sample Date - Time:** 10/24/2023 - 10:35**Matrix:** Ground 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	750	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	0.46	0.23	mg/L	1	AGJ1666	10/25/23 00:40	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-03**Sampled By:** Client**Sample Description:** Well #3**Sample Date - Time:** 10/24/2023 - 10:45**Matrix:** Ground 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	1100	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	10	0.23	mg/L	1	AGJ1676	10/25/23 02:46	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-04**Sampled By:** Client**Sample Description:** Sam's DW**Sample Date - Time:** 10/24/2023 - 10:55**Matrix:** Ground 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	380	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	0.59	0.23	mg/L	1	AGJ1676	10/25/23 03:02	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-05**Sampled By:** Client**Sample Description:** Domestic Well #30D**Sample Date - Time:** 10/24/2023 - 11:15**Matrix:** Ground 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	970	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	3.3	0.23	mg/L	1	AGJ1666	10/25/23 00:09	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-06**Sampled By:** Client**Sample Description:** Domestic Well #32D**Sample Date - Time:** 10/24/2023 - 11:30**Matrix:** Ground 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	1200	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	0.79	0.23	mg/L	1	AGJ1666	10/24/23 23:53	10/24/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-07**Sampled By:** Client**Sample Description:** Domestic Well #28J**Sample Date - Time:** 10/24/2023 - 11:45**Matrix:** Ground 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	630	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	7.8	0.23	mg/L	1	AGJ1676	10/25/23 02:15	10/25/23	

**AGJ3459****RB5 Well**

Dairy Wells

Certificate of Analysis**Sample ID:** AGJ3459-08**Sampled By:** Client**Sample Description:** Domestic Well #28R**Sample Date - Time:** 10/24/2023 - 11:55**Matrix:** Ground 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	520	1.0	umhos/cm	1	AGJ1854	10/27/23	10/27/23	
Nitrate as N	EPA 300.0	7.1	0.23	mg/L	1	AGJ1676	10/25/23 02:31	10/25/23	



AGJ3459

RB5 Well

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

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

Batch: AGJ1666

Prepared: 10/24/2023

Prep Method: Method Specific Preparation

Analyst: AAS

Blank (AGJ1666-BLK1)

Nitrate as N	ND	0.23	mg/L							10/24/23	
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Blank Spike (AGJ1666-BS1)

Nitrate as N	22	0.23	mg/L	23	ND	97	90-110			10/24/23	
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Matrix Spike (AGJ1666-MS1), Source: AGJ3368-01

Nitrate as N	12	0.23	mg/L	11	1.3	98	80-120			10/24/23	
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Matrix Spike (AGJ1666-MS2), Source: AGJ3474-05

Nitrate as N	15	0.23	mg/L	11	3.7	100	80-120			10/25/23	
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Matrix Spike Dup (AGJ1666-MSD1), Source: AGJ3368-01

Nitrate as N	12	0.23	mg/L	11	1.3	99	80-120	1	20	10/24/23	
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Matrix Spike Dup (AGJ1666-MSD2), Source: AGJ3474-05

Nitrate as N	15	0.23	mg/L	11	3.7	104	80-120	2	20	10/25/23	
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EPA 300.0 - Quality Control

Batch: AGJ1676

Prepared: 10/24/2023

Prep Method: Method Specific Preparation

Analyst: IDM

Blank (AGJ1676-BLK1)

Nitrate as N	ND	0.23	mg/L							10/24/23	B2.0
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Blank Spike (AGJ1676-BS1)

Nitrate as N	24	0.23	mg/L	23	ND	105	90-110			10/24/23	
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Matrix Spike (AGJ1676-MS1), Source: AGJ3368-03

Nitrate as N	13	0.23	mg/L	11	1.3	105	80-120			10/25/23	
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Matrix Spike (AGJ1676-MS2), Source: AGJ3474-02

Nitrate as N	12	0.23	mg/L	11	0.37	101	80-120			10/25/23	
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Matrix Spike Dup (AGJ1676-MSD1), Source: AGJ3368-03

Nitrate as N	13	0.23	mg/L	11	1.3	105	80-120	1	20	10/25/23	
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Matrix Spike Dup (AGJ1676-MSD2), Source: AGJ3474-02

Nitrate as N	12	0.23	mg/L	11	0.37	103	80-120	2	20	10/25/23	
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SM 2510B - Quality Control

Batch: AGJ1854

Prepared: 10/27/2023

Prep Method: Method Specific Preparation

Analyst: CEG

Blank Spike (AGJ1854-BS1)

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.

AGJ3459 FINAL 11062023 1527



AGJ3459

RB5 Well

BSK Associates Laboratory Fresno
General Chemistry Quality Control Report

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Date Analyzed	Qual
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SM 2510B - Quality Control

Batch: AGJ1854

Prepared: 10/27/2023

Prep Method: Method Specific Preparation

Analyst: CEG

Blank Spike (AGJ1854-BS1)

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	98	90-110			10/27/23	
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Blank Spike Dup (AGJ1854-BSD1)

Conductivity @ 25C	1400	1.0	umhos/cm	1400	ND	99	90-110	1	5	10/27/23	
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Duplicate (AGJ1854-DUP1), Source: AGJ3652-01

Conductivity @ 25C	1800	1.0	umhos/cm		1800			3	5	10/27/23	
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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.

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	CA000792024-03	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		



10

Sample Integrity

BSK Bottles: Yes NoPage 1 of 1

COC Info	Was temperature within range? Chemistry $\leq 6^{\circ}\text{C}$ Micro $< 8^{\circ}\text{C}$	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)?	Yes	No	NA
	Did all bottles arrive unbroken and intact?	Yes	No		TB Received? (Check Method Below)	Yes	No	NA
	Did all bottle labels agree with COC?	Yes	No		Was a sufficient amount of sample received?	Yes	No	
	Was sodium thiosulfate added to CN sample(s) until chlorine was no longer present?	Yes	NA		Do samples have a hold time <72 hours?	Yes	No	
Bottles Received means preservation/chlorine checks are either N/A or are performed in the lab	250ml(A) 500ml(B) 1Liter(C) 40mlVOA(V) 125ml(D)	Checks*	Passed?		1-8			
	Bacti Na ₂ S ₂ O ₃	—	—		1A			
	None (P) White Cap	—	—					
	Cr6 (P) LL Green Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ DW	Cl, pH > 8	P F					
	Cr6 (P) Pink Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ WW	pH 9.3-9.7	P F					
	Cr6 (P) Black Label/Blue Cap NH ₄ OH(NH ₄) ₂ SO ₄ 7199 ***24 HOUR HOLD TIME***	pH 9.0-9.5	P F					
	HNO ₃ (P) Red Cap or HCl (P) Purple Cap/Lt. Blue Label	—	—					
	H ₂ SO ₄ (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) 608/8081/8082, 625, 632/8321, 8151, 8270	—	—					
	HCl (AG) Lt. Blue Label O&G, Diesel, TCP	—	—					
	Ascorbic, EDTA, KH ₂ Ct (AG) Pink Label 525	—	—					
	Na ₂ SO ₃ 250mL (AG) Neon Green Label 515	—	—					
	Na ₂ S ₂ O ₃ 1 Liter (Brown P) 549	—	—					
	Na ₂ S ₂ O ₃ (AG) Blue Label 548, THM, 524	—	—					
	Na ₂ S ₂ O ₃ (CG) Blue Label 504, 505, 547	—	—					
	Na ₂ S ₂ O ₃ + MCAA (CG) Orange Label 531	pH < 3	P F					
	NH ₄ 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)	—	—					
	H ₃ PO ₄ (CG) Salmon Label	—	—					
	Trizma - EPA 537.1 Light Blue Label FB	—	—					
	Ammonia Acetate - EPA 533 Purple Label FB	—	—					
	Bottled Water	—	—					
Asbestos 1L (P) w/ Foil / LL Metals Bottle	—	—						
Clear Glass	—	—						
OTHER:	—	—						
Split	Container	Preservative	Lot #	Initials	Date/Time	Preservation	Check	
	S P					pH Lot #		
	S P					Cl Lot #		
Comments	*Preservation check completed by lab performing analysis.			✓ Indicates Blanks Received				
	Labeled by:			504 ___ 524.2 ___ TTHM ___ 537/533 ___ TCP ___				
Labels Checked by:			✓ MS/MSD Received Method: _____					

Scanned: CW

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:



Required Fields

Temp: 19.9 °C #77

Phone:

Fax:

Company/Client Name: **Hakker Dairy** Report Attention: **Rodger Hakker** PO#: **distic@jmlordinc.com**
Address: **12449 Idans Ave.** City: **Hanford** State: **CA** Zip: **93230**
Project: **Dairy Wells** Project #: **12449**

Reporting Options: ☐ Trace (U-Flag) ☐ Swamp ☐ EDD Type: ☐ Regulatory Carbon Copies ☐ SWRCB (Drinking Water) ☐ Merced Co ☐ Madera Co ☐ Fresno Co ☐ Tulare Co ☐ Other: ☐ EDT to California SWRCB (Drinking Water) System Number: ☐ Geotracker #: ☐ How would you like to receive your completed results? ☐ E-Mail ☐ Fax ☐ Mail

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	Time	Matrix*	Comments / Station Code / WTRAX
1	mom's DW	10/24/23	10:25	GW	
2	well #1		10:35		
3	well #3		10:45		
4	Sam's DW		10:55		
5	Domestic well #30D		11:15		
6	Domestic well #32D		11:30		
7	Domestic well #285		11:45		
8	Domestic well #288		11:55		

Relinquished by (Signature and Printed Name): **Dustin Christensen** Company: **JM Lord Inc** Date: **10/24/23** Time: **10:58**
Relinquished by (Signature and Printed Name): **[Signature]** Company: **[Signature]** Date: **10/24/23** Time: **10:58**

Received for Lab by (Signature and Printed Name): **[Signature]** Date: **10/24/23** Time: **10:58**
Shipping Method: **ONTRAC** UPS **GSO** **WALKIN** **FED EX** Courier: **K80**
Cooling Method: **Wet** **Blue** **None**

Payment for services rendered as noted herein are due in full within 30 days from the date invoiced. 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