



October 2020

George DeRuyter & Son Dairy, LLC

Administrative Order on Consent Docket No. SDWA-10-2013-0080



George DeRuyter & Son Dairy Heifer Area East Catch Basin Abandonment Completion Report

Prepared for George DeRuyter & Son Dairy

October 2020

George DeRuyter & Son Dairy, LLC

Administrative Order on Consent Docket No. SDWA-10-2013-0080

George DeRuyter & Son Dairy Heifer Area East Catch Basin Abandonment Completion Report

Prepared for

George DeRuyter & Son Dairy, LLC
5121 Dekker Road
Outlook, WA 98938

Prepared by

Anchor QEA, LLC
1119 Pacific Avenue, Suite 1600
Tacoma, WA 98402

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ABBREVIATIONS

Dairy	George DeRuyter & Son Dairy, LLC
mg/kg	milligrams per kilogram
ND	non-detect
Report	<i>George DeRuyter & Son Dairy Heifer Area East Catch Basin Abandonment Completion Report</i>
WA NRCS	Washington State Natural Resources Conservation Service

1 Introduction

This *George DeRuyter & Son Dairy Heifer Area East Catch Basin Abandonment Completion Report* (Report) was prepared by Anchor QEA, LLC, on behalf of George DeRuyter & Son Dairy, LLC (Dairy). The purpose of this Report is to provide a detailed description of work conducted at the Dairy. This Report details the procedures and methods that were implemented to abandon the Heifer Area East Catch Basin and the results of the soil confirmation testing.

The Heifer Area East Catch Basin closure followed the requirements of Washington State Natural Resources Conservation Service (WA NRCS) *Conservation Practice Standard 360 – Waste Facility Closure* (WA NRCS 2013a) and demonstrates compliance with the nutrient management requirements of WA NRCS *Conservation Practice Standard No. 590 – Nutrient Management* (WA NRCS 2013b). It also meets basin abandonment expectations as defined in the current version of the Concentrated Animal Feeding Operation Permit as issued by the Washington State Department of Ecology (Ecology 2017).

1.1 Site Description

The Dairy is located at 5121 Dekker Road in Outlook, Washington. The catch basin that was abandoned, Heifer Area East Catch Basin, is located as shown in Figure 1. The Heifer Area East Catch Basin collected stormwater runoff from the heifer area cow pens to the north of the catch basin and a compost yard in the northeast section of the drainage area.

All inlet pipes into the catch basin were abandoned or rerouted to the lined catch basin shown in Figure 1 located to the west of the Heifer Area East Catch Basin.

2 Abandonment Survey

This section describes the catch basin abandonment construction activities undertaken, including the following:

- Topographic survey
- Liquid and organic solid removal
- Soil confirmation testing
- Final catch basin abandonment

The construction activities (liquid and solid removal, final catch basin abandonment, and soil and nutrient management) were performed by Ag Pro Construction Inc. personnel and equipment. Soil confirmation testing was performed by Anchor QEA.

2.1 Topographic Survey

A topographic survey of the Heifer Area East Catch Basin was completed on November 7, 2019. The survey was conducted by PLSA Engineering and Surveying and is shown in Figure 1. In accordance with WA NRCS *Conservation Practice Standard 360 – Waste Facility Closure* (WA NRCS 2013a), the survey extends a minimum of 50 feet beyond the edge (or the “toe”) of the catch basin embankments and contains the locations of existing utilities (including inlets and outlets) within the abandonment footprint.

2.2 Liquids and Organic Solids Removal

Prior to sampling, liquids and organic solids were removed. This work began in July 2020. Liquids contained within the catch basin were transferred to an in-service lagoon that was not identified for abandonment or lining in 2020. After liquid removal, organic solids were removed and placed in the composting area. Solids were removed down to the catch basin soil foundation material.

2.3 Soil Confirmation Testing

Following the removal of liquids and organic solids, soil testing was conducted within the catch basin to confirm the removal of manure and any soils containing elevated nitrogen concentrations.

Soil sampling from catch basin interiors was performed as follows:

1. Samples were collected from the catch basin bottom and sidewalls using hand tools (e.g., spades, trowels). An excavator was also used to assist the soil sample collection.
2. Soil samples were collected from depth intervals of 0, 12, and 24 inches below ground surface from all locations.
3. After the samples were collected, the samples were placed in appropriate containers, and a custody seal bearing the sampler’s name or initials and date was placed on the container.

Laboratory analyses of the soil samples were performed by SoilTest Farm Consultants, Inc., a State of Washington-certified analytical laboratory and a North American Proficiency Testing-accredited laboratory located at 2925 Driggs Drive, Moses Lake, Washington. Sample management, packing, shipment, analytical testing, quality assurance/quality control, and data validation protocols were consistent with those defined in the *Dairy Facility Application Field Management Plan* (Anchor QEA 2018). All soil samples were tested for the following analytes and methods:

- Ammonium (as nitrogen) by Western Coordinating Committee S-3.50
- Nitrate (as nitrogen) by Western Coordinating Committee S-3.10

Soil samples were collected from the bottom and lower portion of each sidewall at the catch basin on July 27, 2020, following the removal of between 1 and 3 feet of overlying soils. Figure 1 presents the approximate soil sampling locations. Results of soil testing are included in Appendix A and summarized in Table 1.

The lagoon bottom and three of the four sidewalls exceeded the 45 milligrams per kilogram (mg/kg) target level for the sum of nitrate and ammonia. Deeper samples (from 12 to 24 inches) from the south and west sidewalls and the bottom were analyzed. The south and west sidewalls met the target at 12 inches; the bottom met the target at 24 inches. In response, 1 additional foot of soil was removed from the south and west sidewalls, and 2 feet of soil was removed from the bottom. Deeper samples from the north and east sidewalls exceeded the 45 mg/kg target down to 24 inches. In response, 3 feet of soil was removed from the east and north sidewalls, and then a second round of soil samples were taken from those sidewalls on August 10, 2020.

The results of the second round of testing showed that the north bank did not exceed the nitrogen target. The samples from the east bank exceeded the target down to 12 inches. The sample at 24 inches did not exceed the target. In response, an additional 2 feet of soil was removed from the east sidewall.

All sample results representing the final surface of the catch basin were below the target level threshold for the sum of ammonia and nitrate. No additional excavation was required. The average nitrogen concentration in the final lagoon surface was approximately 17 mg/kg.

Table 1
Results of Soil Confirmation Testing

Sample ID	Sample Location	Date Sampled	Sample Depth	Ammonium-N (mg/kg)	Nitrate-N (mg/kg)	Total (mg/kg)
GDS-HCB-N0-200727	North Sidewall	07/27/20	Surface	1.1	66.6	67.7
GDS-HCB-N1-200727	North Sidewall	07/27/20	1 foot	3.1	22.1	25.2
GDS-HCB-N2-200727	North Sidewall	07/27/20	2 feet	3.0	69.1	72.1

Sample ID	Sample Location	Date Sampled	Sample Depth	Ammonium-N (mg/kg)	Nitrate-N (mg/kg)	Total (mg/kg)
GDS-HCB-N0-200810	North Sidewall	08/10/20	Surface	17.0	5.3	22.3
GDS-HCB-N1-200810	North Sidewall	08/10/20	1 foot	41.8	1.5	43.3
GDS-HCB-N2-200810	North Sidewall	08/10/20	2 feet	33.9	1.9	35.8
GDS-HCB-E0-200727	East Sidewall	07/27/20	Surface	1.9	15.8	17.7
GDS-HCB-E1-200727	East Sidewall	07/27/20	1 foot	229	7.1	236.1
GDS-HCB-E2-200727	East Sidewall	07/27/20	2 feet	117.4	66.7	184.1
GDS-HCB-E0-200810	East Sidewall	08/10/20	Surface	ND	117.1	117.1
GDS-HCB-E1-200810	East Sidewall	08/10/20	1 foot	149.2	4.0	153.2
GDS-HCB-E2-200810	East Sidewall	08/10/20	2 feet	2.5	1.2	3.7
GDS-HCB-S0-200727	South Sidewall	07/27/20	Surface	No surface sample collected		
GDS-HCB-S1-200727	South Sidewall	07/27/20	1 foot	32.5	1.5	34.0
GDS-HCB-S2-200727	South Sidewall	07/27/20	2 feet	8.5	7.2	15.7
GDS-HCB-W0-200727	West Sidewall	07/27/20	Surface	ND	45.7	45.7
GDS-HCB-W1-200727	West Sidewall	07/27/20	1 foot	1.6	4.1	5.7
GDS-HCB-W2-200727	West Sidewall	07/27/20	2 feet	1.6	8.0	9.6
GDS-HCB-B0-200727	Bottom	07/27/20	Surface	227.8	311.5	539.3
GDS-HCB-B1-200727	Bottom	07/27/20	1 foot	49.3	5.5	54.8
GDS-HCB-B2-200727	Bottom	07/27/20	2 feet	6.7	13.5	20.2

2.4 Final Abandonment Procedures

After the removal of manure and soils containing elevated nitrogen was confirmed as described in Section 2.3, the excavation was backfilled to match the existing grade. Abandonment of the Heifer Area East Catch Basin was completed in late August 2020.

3 References

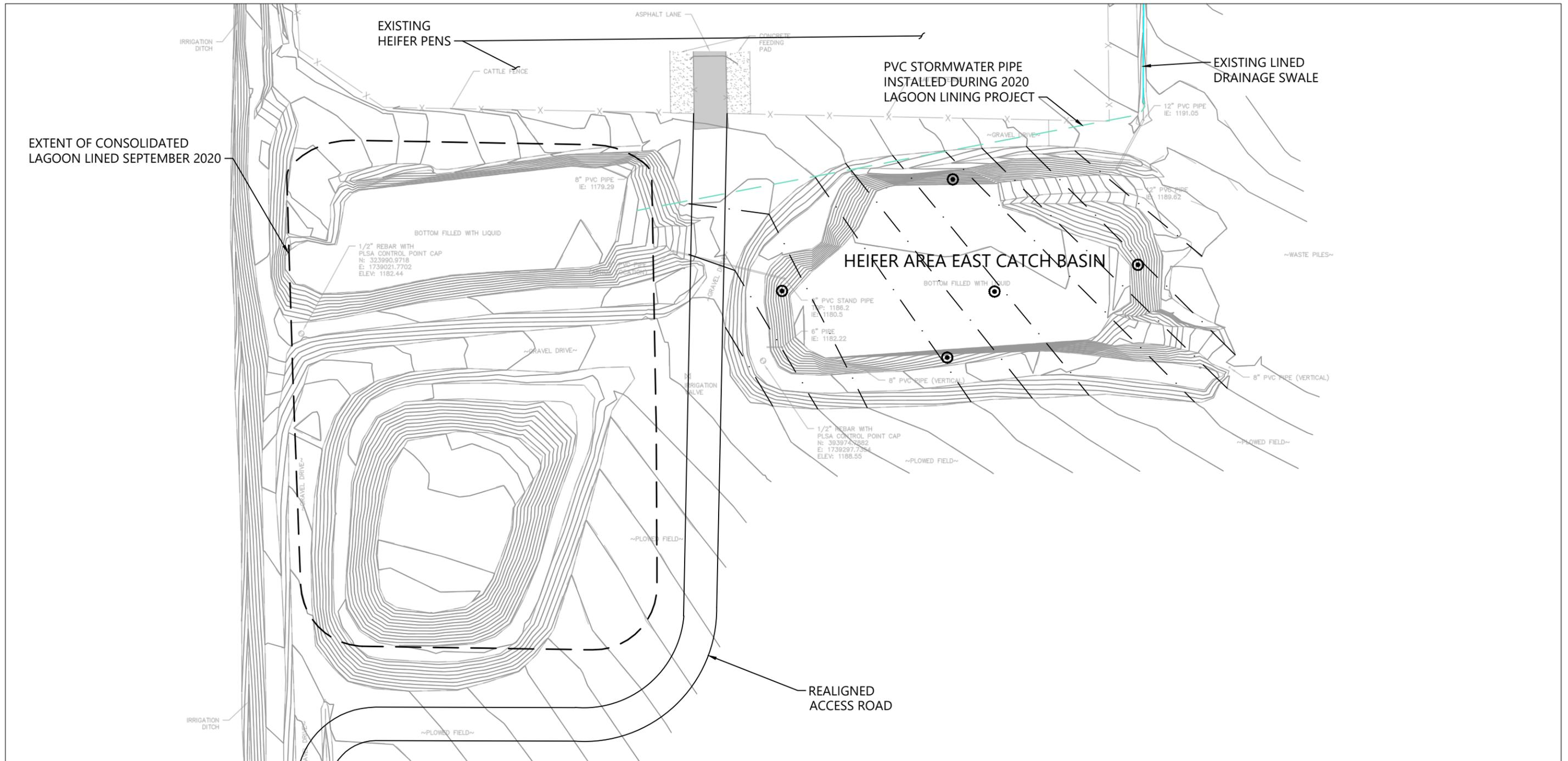
Anchor QEA (Anchor QEA, LLC), 2018. *Dairy Facility Application Field Management Plan*. Prepared for Cow Palace, LLC; George DeRuyter & Son Dairy, LLC/D&A Dairy, LLC/George & Margaret, LLC; and Liberty Dairy, LLC/H&S Bosma Dairy. February 2018.

Ecology (Washington State Department of Ecology), 2017. Concentrated Animal Feeding Operation. National Pollutant Discharge Elimination System and State Waste Discharge General Permit. Issued: January 18, 2017.

WA NRCS (Washington State Natural Resources Conservation Service), 2013a. *Conservation Practice Standard No. 360 – Waste Facility Closure*. January 2013.

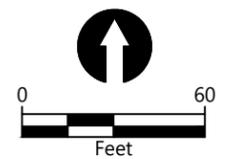
WA NRCS, 2013b. *Conservation Practice Standard No. 590 – Nutrient Management*. December 2013.

Figure



SOURCE: Drawing prepared from survey performed by PLSA dated November 7, 2019
HORIZONTAL DATUM: Washington State Plane South Zone, North American Datum of 1983 (NAD83), U.S. Survey Feet
VERTICAL DATUM: NAVD 88

LEGEND:
 ● Sample Location



Appendix A

Soil Sample Test Results



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farm consultants, inc.

2925 Driggs Dr., Moses Lake, Wa 98837 - www.soiltestlab.com
Office: (509)765-1622 - Fax:(509)765-0314 - (800)764-1622



ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11726

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-N0-200727

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 1.1

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	66.6		
Totals	66.6		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11727

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-N1-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 3.1

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	22.1		
Totals	22.1		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11728

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-N2-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 3.0

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	69.1		
Totals	69.1		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11729

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-E0-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 1.9

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	15.8		
Totals	15.8		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11730

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-E1-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 229.0

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	7.1		
Totals	7.1		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11731

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-E2-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 117.4

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	66.7		
Totals	66.7		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11732

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-S1-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 32.5

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	1.5		
Totals	1.5		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11733

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-S2-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 8.5

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	7.2		
Totals	7.2		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11734

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-W0-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg ND (u)

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	45.7		
Totals	45.7		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11735

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-W1-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 1.6

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	4.1		
Totals	4.1		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11736

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-W2-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 1.6

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	8.0		
Totals	8.0		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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Office: (509)765-1622 - Fax:(509)765-0314 - (800)764-1622



ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11737

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-B0-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 227.8

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	311.5		
Totals	311.5		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11738

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-B2-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 49.3

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	5.5		
Totals	5.5		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S20-11738 Account #: 110340 Reviewed by: KEB List Cost: \$17.00



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farm consultants, inc.

2925 Driggs Dr., Moses Lake, Wa 98837 - www.soiltestlab.com
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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-11739

Date Received: 7/28/2020

Grower:

Sampled By:

Field: GDS-HCB-B3-20072

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 6.7

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	13.5		
Totals	13.5		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-13231

Date Received: 8/12/2020
Grower: YAKIMA DAIRIES
Sampled By:
Field: GDS-HCB-N0-200810
Customer Account #:
Customer Sample ID:

Soil Test Results

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg 17.0
Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	5.3		
Totals	5.3		

Other Tests:

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-13232

Date Received: 8/12/2020
Grower: YAKIMA DAIRIES
Sampled By:
Field: GDS-HCB-N1-200810
Customer Account #:
Customer Sample ID:

Soil Test Results

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg 41.8
Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	1.5		
Totals	1.5		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-13233

Date Received: 8/12/2020

Grower: YAKIMA DAIRIES

Sampled By:

Field: GDS-HCB-N2-200810

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1

E.C. 1:1 m.mhos/cm

Est Sat Paste E.C. m.mhos/cm

Effervescence

Ammonium - N mg/kg 33.9

Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	1.9		
Totals	1.9		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-13234

Date Received: 8/12/2020
Grower: YAKIMA DAIRIES
Sampled By:
Field: GDS-HCB-E0-200810
Customer Account #:
Customer Sample ID:

Soil Test Results

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg ND (u)
Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	117.1		
Totals	117.1		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA 1201 3rd AVE. STE 2600 SEATTLE , WA 98101 Laboratory #: S20-13235	Date Received: 8/12/2020 Grower: YAKIMA DAIRIES Sampled By: Field: GDS-HCB-E1-200810 Customer Account #: Customer Sample ID:
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Soil Test Results

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg 149.2
Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	4.0		
Totals	4.0		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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ANCHOR QEA
1201 3rd AVE. STE 2600

SEATTLE , WA 98101

Laboratory #: S20-13236

Date Received: 8/12/2020
Grower: YAKIMA DAIRIES
Sampled By:
Field: GDS-HCB-E2-200810
Customer Account #:
Customer Sample ID:

Soil Test Results

pH 1:1
E.C. 1:1 m.mhos/cm
Est Sat Paste E.C. m.mhos/cm
Effervescence

Ammonium - N mg/kg 2.5
Organic Matter W.B. %

Depth inches	Nitrate-N mg/kg	Sulfate-S mg/kg	Moisture Inches
0 - 12	1.2		
Totals	1.2		

Other Tests:

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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