

2016 Post-Harvest Nitrate Study: Hullcar Valley

Individual Field Results

August 22, 2017

This document has the individual field results from the study, "Tracking Post-Harvest Soil Nitrate in Agricultural Fields in the Hullcar Valley".

Key Findings

- Ministry of Agriculture conducted a post-harvest soil nitrate study of farms located over the Hullcar Aquifer (Township of Spallumcheen, BC) in the fall of 2016
- 40 agricultural fields over or near the 'Hullcar Aquifer 103' were included in the study and 800 individual sample cores were collected
- Information from a study like this serves as a report card to farmers on how well they are managing nitrogen for crop production and gives some indication of potential risk of nitrates leaching into groundwater
- Because leaching to groundwater occurs over a period of years, soil information collected in 2016 cannot be directly linked to current groundwater nitrate levels
- Results from the study showed that soil nitrates over the Hullcar Aquifer in the fall of 2016 were in a similar range to soils in other studies in the Okanagan and Fraser Valley
- Post-harvest nitrate test (PHNT) values were high or very high in 38% of the fields sampled, medium in 43% of the fields, and low in 20% of the fields
- Results were variable from farm to farm, and between types of crops. Annual crops like corn had higher soil nitrate levels. This is consistent with other studies
- Fields rated as "high to very high" have the greatest opportunity for improvement with adoption of improved on-farm nutrient management practices. Improved practices are expected to improve groundwater quality over time

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Map of Fields

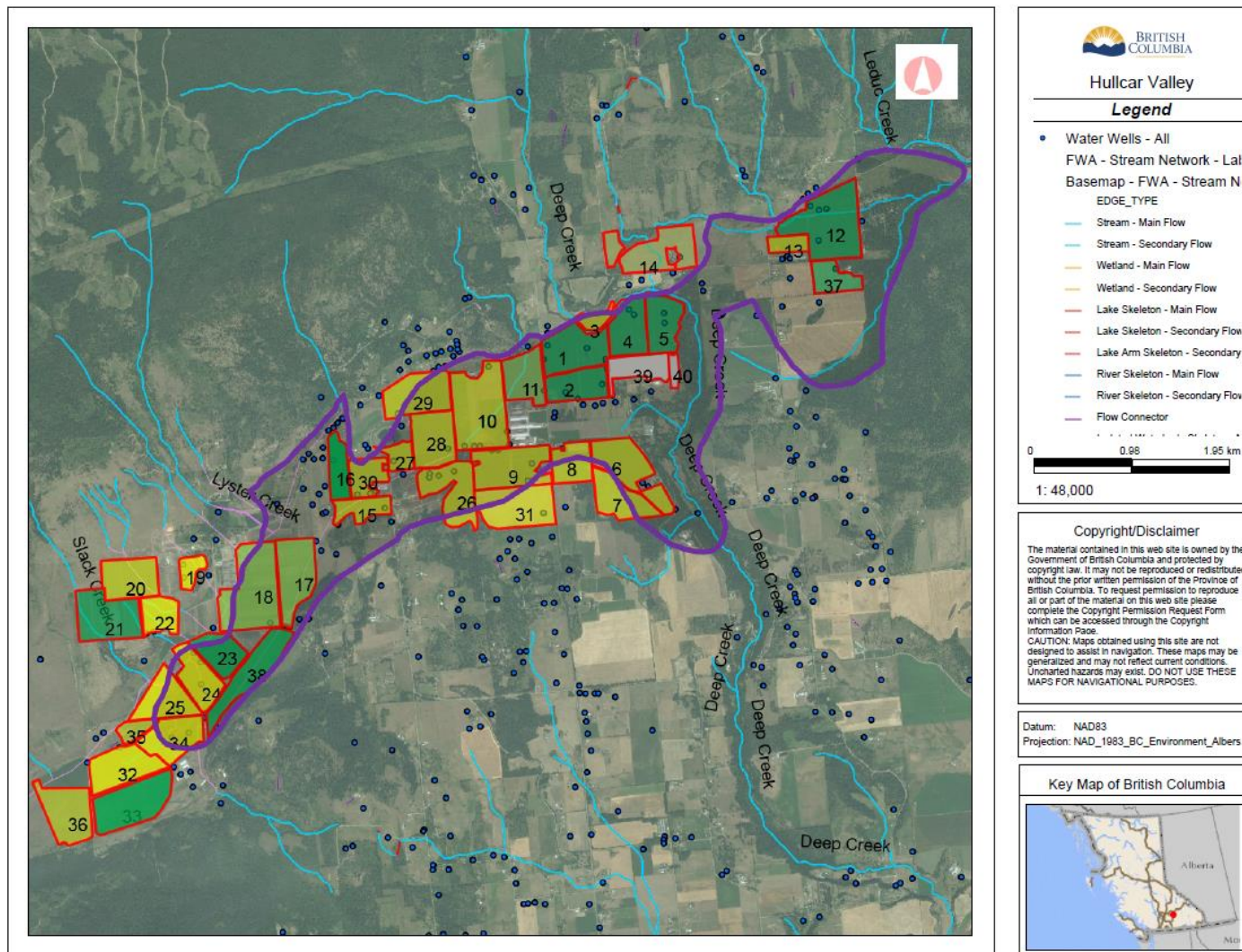


Figure 1: Map of Fields. Boundaries (red outlines) of 40 fields sampled for post-harvest nutrients, in relation to Aquifer 103 (purple outline). Numbers correspond to field ID numbers in the lab reports. Colour denotes crop types: green, *alfalfa or grass*; light green, *nursery trees*; yellow, *silage corn*; grey, *spelt (cereal)*. Blue circles represent known water wells.

Footnotes for Individual Laboratory Reports – June 20, 2017

1. Soil pH (water)

- “Water” refers to the test method
- Soil pH is typically tested in the top 12 inches of soil to determine if soil acidity is optimal
 - Alfalfa minimum pH 6.5
 - Corn (silage) minimum pH 5.5

2. Soil test phosphorus (P) and potassium (K)

- Different jurisdictions have researched different methods (e.g. Bray P1) to measure P and K fertility, usually at the 0-6 inch soil depth
- You can compare results of the same method over time for a given field

3. Nitrate-Nitrogen (NO₃-N)

- Measured *ppm* values are converted to *lb/ac* values using a particular soil bulk density value
- In this report, a soil bulk density value of 1300 kg per m³ was assumed for the 0-12 inch soil layer and 1500 kg per m³ for the 12-24 inch and 24-36 inch soil layers

Example

To convert 10 ppm NO₃-N (measured in a sample from the 0-12 inch depth) to lb/ac NO₃-N,

10 ppm = 10 mg per kg of dry soil

0-12 inch depth = 0.30 m thickness

$$\text{kg/ha NO}_3\text{-N} = \frac{10 \text{ mg NO}_3\text{-N}}{\text{kg dry soil}} \times \frac{1 \text{ kg}}{10^6 \text{ mg}} \times \frac{1300 \text{ kg dry soil}}{\text{m}^3 \text{ soil}} \times 0.30 \text{ m soil} \times \frac{10,000 \text{ m}^2 \text{ soil}}{\text{ha}} = 39 \text{ kg/ha NO}_3\text{-N}$$

$$\text{lb/ac NO}_3\text{-N} = 39 \text{ kg/ha} \times 0.89 \frac{\text{lb/ac}}{\text{kg/ha}} = 35 \text{ lb/ac NO}_3\text{-N}$$

- Post-harvest nitrate test
 - What it indicates: the amount of nitrate not used by the most recently harvested crop; whether nitrogen management can be more efficient (Table 1); and the amount of nitrate that *can* be lost (e.g. leached) at some point.
 - What is uncertain: the amount of nitrate that will be available to the next crop; and the amount of nitrate that *will* be lost (e.g. leached).

Table 1. Proposed interpretations of the post-harvest nitrate test for nitrogen (N) management, assuming the test describes the amount of nitrate not used by a crop with near-optimum yields.

Proposed rating	Post-harvest nitrate test (PHNT, lb NO ₃ -N per ac)	Management suggestion if growing the same crop next year in the same field
Low	0 – 44	Continue with N management program
Medium	45 – 89	Consider changes to N management ^a
High	90 – 180	Reduce N without risk to crop quality or yield
Very High	> 180	Reduce N without risk to crop quality or yield

a. Proposed interpretations in the medium range are crop-specific for forage crops and cereals: re-evaluate estimates of agronomic N rates if PHNT exceeds 70 lb NO₃-N per ac for silage corn or if PHNT exceeds approximately 55 lb NO₃-N per ac for perennial forages.

Footnotes for Individual Laboratory Reports – June 20, 2017

4. Mineral nitrogen

- Mineral nitrogen is the sum of nitrate and ammonium
- There are no proposed interpretations or ratings for post-harvest ammonium or post-harvest mineral nitrogen at this point

5. Interim production recommendations

- Soil test P ('Mehlich 3' method) and Soil Test K ('Mehlich 3' method) were converted to 'Kelowna method equivalent values' using relationships determined with B.C. soils
- Soil test ratings and production recommendations for many crops are available from B.C. research that relates the Kelowna method equivalent soil test value with crop response to phosphate or potash fertilizer, using soil samples from the 0-6 inch soil depth
 - Silage corn: Even at high phosphorus fertility levels, corn might respond to starter phosphorus at a rate of about 20 lb/ac of P_2O_5 . This starter phosphorus is typically applied in a band 2 inches below and 2 inches to the side of the seed row.
- Additional information can be found at <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/soil-nutrients/nutrient-management/what-to-apply/soil-nutrient-testing>

Please Note: Due to rounding, some totals may not correspond with the sum of the separate figures.

Laboratory Reports for Individual Fields – June 20, 2017

Continues on next page

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-12-2016
Field ID	1	2016 Main Crop	Alfalfa
Field Name (area)	103A (north) (51 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	9.5	5.0	7.2 ¹	4.1
12-24	3.0	3.0	7.5	1.6
24-36	2.0	3.0	7.7	0.8
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	163	209	62	319

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	33	17	50	62%	42%	53%
12-24	12	12	24	23%	29%	25%
24-36	8	12	20	15%	29%	21%
0-36	53	41	94	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

53 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	150 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	239 High	20 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-12-2016
Field ID	2	2016 Main Crop	Alfalfa
Field Name (area)	103A (south) (51 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	12.5	7.2 ¹	3.0
12-24	3.0	3.0	7.5	1.0
24-36	1.0	2.0	7.9	0.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	174	224	60	316

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	38	43	82	70%	68%	69%
12-24	12	12	24	22%	19%	20%
24-36	4	8	12	7%	13%	10%
0-36	54	63	118	100%	100%	100%

Post-harvest nitrate test (PHNT)

PHNT Rating

54 lb NO₃-N/ac (0-36 inch soil depth)

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	161 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	237 High	20 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	3	2016 Main Crop	Corn Silage
Field Name (area)	103C Island (12 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	24.0	3.5	7.5 ¹	3.5
12-24	9.0	6.0	7.8	2.0
24-36	14.0	3.0	7.8	1.8
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	60	77	36	149

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	83	12	95	47%	25%	43%
12-24	36	24	60	21%	50%	27%
24-36	56	12	68	32%	25%	30%
0-36	175	48	224	100%	100%	100%

Post-harvest nitrate test (PHNT) **175 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	55 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	112 Low	54 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-12-2016
Field ID	4	2016 Main Crop	Alfalfa
Field Name (area)	103B (west) (48 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.5	7.0	7.2 ¹	4.6
12-24	3.0	2.0	7.5	1.6
24-36	3.0	2.0	7.8	0.7
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	222	284	81	609

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	40	24	64	62%	60%	62%
12-24	12	8	20	19%	20%	19%
24-36	12	8	20	19%	20%	19%
0-36	64	40	104	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

64 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	204 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	457 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-12-2016
Field ID	5	2016 Main Crop	Alfalfa
Field Name (area)	103B (east) (48 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.5	4.5	7.3 ¹	4.0
12-24	3.0	3.0	7.5	1.1
24-36	2.0	3.0	7.7	0.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	217	278	80	387

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	40	16	56	67%	39%	56%
12-24	12	12	24	20%	30%	24%
24-36	8	12	20	13%	30%	20%
0-36	60	40	100	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

60 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	200 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	290 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	6	2016 Main Crop	Corn Silage
Field Name (area)	104 Harolds Lower (55 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	3.0	7.4 ¹	2.5
12-24	15.0	3.0	7.5	1.3
24-36	13.0	2.0	7.9	1.3
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	106	136	46	365

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	61	10	71	35%	34%	35%
12-24	60	12	72	35%	39%	35%
24-36	52	8	60	30%	26%	30%
0-36	173	30	203	100%	100%	100%

Post-harvest nitrate test (PHNT) **173 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	98 High	15 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	274 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	7	2016 Main Crop	Corn Silage
Field Name (area)	104 Harolds Upper (55 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	13.0	3.5	7.5 ¹	2.5
12-24	10.0	3.0	7.8	1.1
24-36	9.0	3.0	7.8	0.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	151	194	60	336

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	45	12	57	37%	34%	36%
12-24	40	12	52	33%	33%	33%
24-36	36	12	48	30%	33%	31%
0-36	121	36	157	100%	100%	100%

Post-harvest nitrate test (PHNT) **121 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	140 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	252 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	8	2016 Main Crop	Corn Silage
Field Name (area)	202 Reimer (37 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	13.5	4.5	7.3 ¹	2.5
12-24	10.0	4.0	7.4	0.8
24-36	12.0	3.0	7.7	0.9
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	125	160	47	291

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	47	16	62	35%	36%	35%
12-24	40	16	56	30%	37%	31%
24-36	48	12	60	36%	28%	34%
0-36	135	44	179	100%	100%	100%

Post-harvest nitrate test (PHNT) **135 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	115 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	218 High	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	9	2016 Main Crop	Corn Silage
Field Name (area)	109 Sylvia (74 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	19.0	4.0	7.8 ¹	2.5
12-24	13.0	3.0	8.0	1.7
24-36	10.0	3.0	8.1	1.0
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	82	105	37	240

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	66	14	80	42%	37%	41%
12-24	52	12	64	33%	32%	33%
24-36	40	12	52	25%	32%	27%
0-36	158	38	196	100%	100%	100%

Post-harvest nitrate test (PHNT) **158 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	76 High	15 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	180 Medium	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	10	2016 Main Crop	Corn Silage
Field Name (area)	102 Sorensen (101 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	2.0	7.6 ¹	3.2
12-24	11.0	2.0	7.9	1.8
24-36	9.0	2.0	7.9	1.3
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	113	144	47	362

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	61	7	68	43%	30%	41%
12-24	44	8	52	31%	35%	32%
24-36	36	8	44	26%	35%	27%
0-36	141	23	164	100%	100%	100%

Post-harvest nitrate test (PHNT) **141 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	104 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	272 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-12-2016
Field ID	11	2016 Main Crop	Alfalfa
Field Name (area)	101 Barns (47 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	14.0	6.0	7.4 ¹	4.0
12-24	3.0	3.0	7.8	1.4
24-36	3.0	3.0	8.0	0.7
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	245	315	80	560

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	49	21	69	67%	46%	59%
12-24	12	12	24	17%	27%	20%
24-36	12	12	24	17%	27%	20%
0-36	73	45	117	100%	100%	100%

Post-harvest nitrate test (PHNT)

PHNT Rating

73 lb NO₃-N/ac (0-36 inch soil depth)

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	227 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	420 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-13-2016
Field ID	12	2016 Main Crop	Alfalfa
Field Name (area)	105 Dixon Back (101 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	7.0	4.5	7.2 ¹	1.5
12-24	3.0	3.0	8.0	0.8
24-36	2.0	3.0	8.1	0.5
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	79	101	34	134

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	24	16	40	55%	39%	48%
12-24	12	12	24	27%	30%	29%
24-36	8	12	20	18%	30%	24%
0-36	44	40	84	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

44 lb NO₃-N/ac (0-36 inch soil depth)
Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	73 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	101 Low	54 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Nov-04-2016
Field ID	13	2016 Main Crop	Corn Silage
Field Name (area)	106 Dixon Front (15 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	1.5	7.4 ¹	2.4
12-24	6.0	2.0	7.8	1.1
24-36	4.0	1.0	8.0	0.6
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	155	199	53	251

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	38	5	43	49%	30%	45%
12-24	24	8	32	31%	47%	34%
24-36	16	4	20	20%	23%	21%
0-36	78	17	95	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

78 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	143 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	188 Medium	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-12-2016
Field ID	14	2016 Main Crop	Alfalfa
Field Name (area)	201 Skelton (72 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	10.5	4.0	7.2 ¹	2.0
12-24	4.0	2.0	8.1	0.8
24-36	3.0	2.0	8.2	0.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	98	125	43	175

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	36	14	50	57%	46%	53%
12-24	16	8	24	25%	27%	25%
24-36	12	8	20	19%	27%	21%
0-36	64	30	94	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

64 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	90 High	15 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	131 Medium	54 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-12-2016
Field ID	15	2016 Main Crop	Corn Silage
Field Name (area)	210 Waynes (28 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	13.0	3.5	7.2 ¹	5.0
12-24	12.0	2.0	7.4	1.4
24-36	8.0	2.0	8.0	0.6
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	185	237	66	292

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	45	12	57	36%	43%	37%
12-24	48	8	56	38%	28%	37%
24-36	32	8	40	26%	28%	26%
0-36	125	28	153	100%	100%	100%

Post-harvest nitrate test (PHNT) **125 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	171 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	219 High	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-12-2016
Field ID	16	2016 Main Crop	Corn Silage
Field Name (area)	209 Swaans (27 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	5.5	4.5	7.6 ¹	3.8
12-24	6.0	3.0	7.8	1.4
24-36	6.0	2.0	8.2	1.0
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	70	90	36	257

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	19	16	35	28%	44%	34%
12-24	24	12	36	36%	34%	35%
24-36	24	8	32	36%	22%	31%
0-36	67	36	103	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

67 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	65 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	193 High	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-11-2016
Field ID	17	2016 Main Crop	Trees
Field Name (area)	Purple Springs East (64 acres)	2017 Main Crop (planned)	Trees

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	3.5	6.0	7.7 ¹	4.3
12-24	3.0	5.0	8.1	1.8
24-36	5.0	7.0	8.0	1.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	149	191	58	385

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	12	21	33	27%	30%	29%
12-24	12	20	32	27%	29%	28%
24-36	20	28	48	45%	41%	43%
0-36	44	69	113	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

44 lb NO₃-N/ac (0-36 inch soil depth)
Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Trees)
Soil Test P (0-6 in.) Kelowna method (ppm)	138 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	289 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-11-2016
Field ID	18	2016 Main Crop	Trees
Field Name (area)	Purple Springs West (106 acres)	2017 Main Crop (planned)	Trees

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	2.5	5.5	7.5 ¹	4.2
12-24	2.0	5.0	7.9	1.8
24-36	5.0	5.0	8.0	1.1
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	151	194	56	349

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	9	19	28	24%	32%	29%
12-24	8	20	28	22%	34%	29%
24-36	20	20	40	55%	34%	42%
0-36	37	59	96	100%	100%	100%

Post-harvest nitrate test (PHNT)

PHNT Rating

37 lb NO₃-N/ac (0-36 inch soil depth)

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Trees)
Soil Test P (0-6 in.) Kelowna method (ppm)	140 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	262 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-06-2016
Field ID	19	2016 Main Crop	Corn Silage
Field Name (area)	101 Home (17 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	20.0	6.0	7.1 ¹	6.9
12-24	3.0	4.0	7.7	1.5
24-36	3.0	4.0	7.9	1.0
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	463	593	152	630

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	69	21	90	74%	39%	62%
12-24	12	16	28	13%	30%	19%
24-36	12	16	28	13%	30%	19%
0-36	93	53	146	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

93 lb NO₃-N/ac (0-36 inch soil depth)
High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	427 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	473 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-12-2016
Field ID	20	2016 Main Crop	Corn Silage
Field Name (area)	102 West (51 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	14.0	3.5	7.4 ¹	6.4
12-24	2.0	2.0	7.9	1.8
24-36	6.0	2.0	8.1	1.2
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	304	390	101	410

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	49	12	61	60%	43%	56%
12-24	8	8	16	10%	28%	15%
24-36	24	8	32	30%	28%	29%
0-36	81	28	109	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

81 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	281 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	308 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-06-2016
Field ID	21	2016 Main Crop	Alfalfa
Field Name (area)	103 Far West & 104 West Hill (63 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	6.5	5.0	7.1 ¹	4.5
12-24	10.0	4.0	7.7	1.4
24-36	1.0	4.0	8.0	0.8
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	262	336	95	166

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	23	17	40	34%	35%	34%
12-24	40	16	56	60%	32%	48%
24-36	4	16	20	6%	32%	17%
0-36	67	49	116	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

67 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	242 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	125 Low	54 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-06-2016
Field ID	22	2016 Main Crop	Corn Silage
Field Name (area)	105 Feedlot Bottom (33 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	8.5	6.0	7.3 ¹	5.0
12-24	4.0	4.0	7.7	1.5
24-36	5.0	5.0	8.0	0.9
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	342	439	111	401

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	30	21	50	45%	37%	41%
12-24	16	16	32	24%	28%	26%
24-36	20	20	40	31%	35%	33%
0-36	66	57	122	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

66 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	316 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	301 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-13-2016
Field ID	23	2016 Main Crop	Alfalfa
Field Name (area)	205 Reserve (41 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	6.0	7.1 ¹	4.0
12-24	1.0	3.0	7.4	1.3
24-36	1.0	3.0	7.9	0.7
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	110	141	50	143

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	38	21	59	83%	46%	65%
12-24	4	12	16	9%	27%	18%
24-36	4	12	16	9%	27%	18%
0-36	46	45	91	100%	100%	100%

Post-harvest nitrate test (PHNT)

PHNT Rating

46 lb NO₃-N/ac (0-36 inch soil depth)

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	102 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	107 Low	54 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-06-2016
Field ID	24	2016 Main Crop	Corn Silage
Field Name (area)	206 Lens (44 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	8.5	6.0	7.3 ¹	5.9
12-24	1.0	5.0	7.6	1.5
24-36	1.0	4.0	7.8	1.2
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	238	305	86	414

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	30	21	50	79%	37%	53%
12-24	4	20	24	11%	35%	25%
24-36	4	16	20	11%	28%	21%
0-36	38	57	94	100%	100%	100%

Post-harvest nitrate test (PHNT) **38 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **Low³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	220 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	311 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	2	Sample Date	Oct-11-2016
Field ID	25	2016 Main Crop	Corn Silage
Field Name (area)	207 Top Reserve+ 208 Dorthy's (52 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	7.5	6.0	7.3 ¹	4.3
12-24	1.0	5.0	7.5	1.5
24-36	1.0	3.0	8.0	1.0
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	163	209	54	374

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	26	21	47	76%	39%	54%
12-24	4	20	24	12%	38%	28%
24-36	4	12	16	12%	23%	18%
0-36	34	53	87	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

34 lb NO₃-N/ac (0-36 inch soil depth)
Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	150 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	281 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	3	Sample Date	Oct-25-2016
Field ID	26	2016 Main Crop	Corn Silage
Field Name (area)	101 Above Feedlot (69 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	2.0	7.7 ¹	4.3
12-24	11.0	1.0	8.0	1.6
24-36	7.0	2.0	8.1	0.9
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	184	236	63	501

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	61	7	68	46%	37%	45%
12-24	44	4	48	33%	21%	32%
24-36	28	8	36	21%	42%	24%
0-36	133	19	152	100%	100%	100%

Post-harvest nitrate test (PHNT) **133 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	170 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	376 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	3	Sample Date	Oct-25-2016
Field ID	27	2016 Main Crop	Corn Silage
Field Name (area)	102A Parkinson Lake (17 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	15.0	2.0	7.7 ¹	6.6
12-24	17.0	2.0	7.8	2.6
24-36	15.0	2.0	7.9	1.6
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	197	253	65	577

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	52	7	59	29%	30%	29%
12-24	68	8	76	38%	35%	37%
24-36	60	8	68	33%	35%	34%
0-36	180	23	203	100%	100%	100%

Post-harvest nitrate test (PHNT) **180 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Very High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	182 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	433 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	3	Sample Date	Oct-25-2016
Field ID	28	2016 Main Crop	Corn Silage
Field Name (area)	102B Parkinson Lake (56 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	20.5	2.0	7.7 ¹	6.6
12-24	13.0	1.0	7.9	2.3
24-36	8.0	2.0	8.2	1.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	206	264	74	610

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	71	7	78	46%	37%	45%
12-24	52	4	56	34%	21%	32%
24-36	32	8	40	21%	42%	23%
0-36	155	19	174	100%	100%	100%

Post-harvest nitrate test (PHNT) **155 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	190 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	458 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	3	Sample Date	Oct-25-2016
Field ID	29	2016 Main Crop	Corn Silage
Field Name (area)	103 Hullcar Rd. (62 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	4.0	7.4 ¹	4.8
12-24	8.0	2.0	8.0	1.8
24-36	12.0	2.0	8.0	1.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	220	282	75	479

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	61	14	75	43%	46%	44%
12-24	32	8	40	23%	27%	23%
24-36	48	8	56	34%	27%	33%
0-36	141	30	171	100%	100%	100%

Post-harvest nitrate test (PHNT) **141 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	203 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	359 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	3	Sample Date	Oct-25-2016
Field ID	30	2016 Main Crop	Corn Silage
Field Name (area)	104 Kevins (29 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	12.5	3.0	7.7 ¹	7.0
12-24	7.0	3.0	8.1	2.1
24-36	5.0	2.0	7.9	1.4
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	181	232	69	302

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	43	10	54	47%	34%	44%
12-24	28	12	40	31%	39%	33%
24-36	20	8	28	22%	26%	23%
0-36	91	30	122	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

91 lb NO₃-N/ac (0-36 inch soil depth)
High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	167 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	227 High	20 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	3	Sample Date	Oct-25-2016
Field ID	31	2016 Main Crop	Corn Silage
Field Name (area)	105 Krebbers (72 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	31.0	5.0	7.2 ¹	3.0
12-24	25.0	3.0	7.8	1.2
24-36	16.0	3.0	8.0	1.0
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	154	197	52	276

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	108	17	125	40%	42%	40%
12-24	100	12	112	37%	29%	36%
24-36	64	12	76	24%	29%	24%
0-36	272	41	313	100%	100%	100%

Post-harvest nitrate test (PHNT) **272 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **Very High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	142 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	207 High	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	4	Sample Date	Oct-11-2016
Field ID	32	2016 Main Crop	Corn Silage
Field Name (area)	101A Home Pivot North (62 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	9.5	5.5	7.5 ¹	3.8
12-24	4.0	5.0	7.8	1.3
24-36	6.0	4.0	7.8	1.2
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	181	232	69	484

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	33	19	52	45%	35%	41%
12-24	16	20	36	22%	36%	28%
24-36	24	16	40	33%	29%	31%
0-36	73	55	128	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

73 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	167 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	363 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	4	Sample Date	Sep-30-2016
Field ID	33	2016 Main Crop	Alfalfa
Field Name (area)	101B Home Pivot Road (80 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	22.0	4.5	7.5 ¹	4.2
12-24	3.0	4.0	8.1	1.2
24-36	3.0	3.0	8.1	0.9
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	253	324	92	551

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	76	16	92	76%	36%	64%
12-24	12	16	28	12%	37%	19%
24-36	12	12	24	12%	28%	17%
0-36	100	44	144	100%	100%	100%

Post-harvest nitrate test (PHNT) **100 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	233 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	413 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	4	Sample Date	Oct-11-2016
Field ID	34	2016 Main Crop	Corn Silage
Field Name (area)	102 Bottom Back (47 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	29.0	4.0	7.5 ¹	7.3
12-24	17.0	6.0	7.7	1.5
24-36	13.0	4.0	7.7	1.2
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	166	213	57	481

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	101	14	115	46%	26%	42%
12-24	68	24	92	31%	45%	34%
24-36	52	16	68	24%	30%	25%
0-36	221	54	275	100%	100%	100%

Post-harvest nitrate test (PHNT) **221 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **Very High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	153 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	361 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	4	Sample Date	Sep-30-2016
Field ID	35	2016 Main Crop	Corn Silage
Field Name (area)	105 Top Back (14 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	7.0	4.5	7.4 ¹	5.8
12-24	3.0	2.0	7.7	1.6
24-36	4.0	2.0	7.7	0.8
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	203	260	72	572

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	24	16	40	46%	49%	48%
12-24	12	8	20	23%	25%	24%
24-36	16	8	24	31%	25%	29%
0-36	52	32	84	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

52 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	187 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	429 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	4	Sample Date	Sep-30-2016
Field ID	36	2016 Main Crop	Corn Silage
Field Name (area)	201 Reserve Pivot (61 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	5.5	7.3 ¹	5.2
12-24	2.0	5.0	7.3	1.3
24-36	2.0	4.0	7.3	0.9
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	128	164	48	298

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	38	19	57	70%	35%	52%
12-24	8	20	28	15%	36%	26%
24-36	8	16	24	15%	29%	22%
0-36	54	55	109	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

54 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	118 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	224 High	20 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	1	Sample Date	Oct-13-2016
Field ID	37	2016 Main Crop	Alfalfa
Field Name (area)	Jessie's field (29 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.0	4.0	7.5 ¹	1.9
12-24	5.0	3.0	8.4	1.1
24-36	1.0	3.0	8.6	0.7
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	60	77	30	211

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	59	14	73	71%	37%	60%
12-24	20	12	32	24%	32%	26%
24-36	4	12	16	5%	32%	13%
0-36	83	38	121	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

83 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	55 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	158 Medium	36 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	4	Sample Date	Oct-11-2016
Field ID	38	2016 Main Crop	Grass
Field Name (area)	301 Matheson Rd. (58 acres)	2017 Main Crop (planned)	Grass

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	1.0	5.0	7.8 ¹	6.0
12-24	1.0	4.0	7.9	1.7
24-36	1.0	4.0	8.0	1.2
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	10	13	7	162

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	3	17	21	30%	35%	34%
12-24	4	16	20	35%	32%	33%
24-36	4	16	20	35%	32%	33%
0-36	11	49	61	100%	100%	100%

Post-harvest nitrate test (PHNT)

PHNT Rating

11 lb NO₃-N/ac (0-36 inch soil depth)

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Grass)
Soil Test P (0-6 in.) Kelowna method (ppm)	9 Low	107 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	122 Low	54 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	5	Sample Date	Sep-30-2016
Field ID	39	2016 Main Crop	Spelt
Field Name (area)	101 Main (40 acres)	2017 Main Crop (planned)	Winter Canola

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	23.0	6.5	7.1 ¹	4.1
12-24	5.0	4.0	7.4	1.3
24-36	2.0	3.0	7.6	0.6
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	355	455	118	552

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	80	23	102	74%	45%	65%
12-24	20	16	36	19%	32%	23%
24-36	8	12	20	7%	24%	13%
0-36	108	51	158	100%	100%	100%

Post-harvest nitrate test (PHNT) **108 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Winter Canola)
Soil Test P (0-6 in.) Kelowna method (ppm)	328 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	414 Very High	0 lb K₂O per acre

Report Date: June 20, 2017

Farm ID	5	Sample Date	Sep-30-2016
Field ID	40	2016 Main Crop	Spelt
Field Name (area)	102 Old Feedlot (8 acres)	2017 Main Crop (planned)	Winter Canola

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	35.0	8.0	6.7 ¹	5.7
12-24	14.0	9.0	7.3	0.8
24-36	15.0	23.0	7.4	0.6
Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Mehlich 3 (ppm) ²
0-6	882	1131	285	1243

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	121	28	149	51%	18%	38%
12-24	56	36	92	24%	23%	23%
24-36	60	92	152	25%	59%	39%
0-36	238	156	394	100%	100%	100%

Post-harvest nitrate test (PHNT) **238 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating **Very High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Winter Canola)
Soil Test P (0-6 in.) Kelowna method (ppm)	814 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	932 Very High	0 lb K₂O per acre

Footnotes for Individual Reports - FEB 2017

1. Soil pH (water)

- "Water" refers to the test method
- Soil pH is typically tested in the top 12 inches of soil to determine if soil acidity is optimal
 - Alfalfa minimum pH 6.5
 - Corn (silage) minimum pH 5.5

2. Soil test phosphorus (P) and potassium (K)

- Different jurisdictions have researched different methods (e.g. Bray P1) to measure P and K fertility, usually at the 0-6 inch soil depth
- You can compare results of the same method over time for a given field
- Ministry of Agriculture needs to confirm the method for soil test potassium (K)

3. Nitrate-Nitrogen (NO₃-N)

- Measured *ppm* values are converted to *lb/ac* values using a particular soil bulk density value
- **In this report, a bulk density value of 1150 kg per m³ was assumed**

Example

To convert 10 ppm NO₃-N (measured in a sample from the 12-24 inch depth) to lb/ac NO₃-N,

10 ppm = 10 mg per kg of dry soil

12-24 inch depth = 0.30 m thickness

$$\text{kg/ha NO}_3\text{-N} = \frac{10 \text{ mg NO}_3\text{-N}}{\text{kg dry soil}} \times \frac{1 \text{ kg}}{10^6 \text{ mg}} \times \frac{1150 \text{ kg dry soil}}{\text{m}^3 \text{ soil}} \times 0.30 \text{ m soil} \times \frac{10,000 \text{ m}^2 \text{ soil}}{\text{ha}} = 34.5 \text{ kg/ha NO}_3\text{-N}$$

$$\text{lb/ac NO}_3\text{-N} = 34.5 \text{ kg/ha} \times 0.9 \frac{\text{lb/ac}}{\text{kg/ha}} = 31 \text{ lb/ac NO}_3\text{-N}$$

If the assumed soil bulk density is within 10% of the actual value, then there was between 28 and 34 lb/ac of NO₃-N in the 12-24 in soil depth.

- Post-harvest nitrate test
 - What it indicates: the amount of nitrate not used by the most recently harvested crop; whether nitrogen management can be more efficient (Table 1); and the amount of nitrate that *can* be lost (e.g. leached) before the next growing season.
 - What is uncertain: the amount of nitrate that will be available to the next crop; and the amount of nitrate that *will* be lost (e.g. leached) before the next growing season.

Table 2. Proposed interpretations of the post-harvest nitrate test for nitrogen (N) management, adapted from the 2007 Okanagan Agricultural Soil Study by Kowalenko et al. (2009)

Proposed rating	Post-harvest nitrate test (lb NO ₃ -N/ac, 0-24 inches) ^a	Management suggestion if growing the same crop next year in the same field
Low	0 – 45	Continue with N management program
Medium	46 – 90	Consider changes to N management
High	90 – 180	Reduce N without risk to crop quality or yield
Very High	> 180	Reduce N without risk to crop quality or yield

a. The amount of nitrate in the 0-36 inch soil depth is at least as great as the nitrate in the 0-24 inch soil depth. Arguably, the upper thresholds of each rating category in this table could be increased to adjust them for the 0-36 inch soil depth.

4. Mineral nitrogen

- Mineral nitrogen is the sum of nitrate and ammonium
- There are no proposed interpretations or ratings for post-harvest ammonium or post-harvest mineral nitrogen at this point

5. Interim production recommendations

- Soil test P ('Mehlich 3') and Soil Test K ('Ammonium Acetate') was converted to their respective 'Kelowna' method-equivalent values using relationships determined with B.C. soils
- Soil test ratings and production recommendations for many crops are available from B.C. research that relates soil test values with crop response to fertilizer, using the 0-6 inch soil depth
 - Silage corn: Even at high phosphorus fertility levels, corn might respond to starter phosphorus at a rate of about 20 lb/ac of P_2O_5 . This starter phosphorus is typically applied in a band 2 inches below and 2 inches to the side of the seed row.
- Additional information can be found at <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/soil-nutrients/nutrient-management/what-to-apply/soil-nutrient-testing>

Please Note: Due to rounding, some totals may not correspond with the sum of the separate figures

This is an archival version that has been replaced.

Laboratory Reports for Individual Fields – Archival Version

Continues on next page

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-12-2016
Field ID	1	2016 Main Crop	Alfalfa
Field Name (area)	103A (north) (51 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	9.5	5.0	7.2 ¹	4.1
12-24	3.0	3.0	7.5	1.6
24-36	2.0	3.0	7.7	0.8

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	163	209	62	319

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	29	16	45	66%	45%	57%
12-24	9	9	19	21%	27%	24%
24-36	6	9	16	14%	27%	20%
0-36	45	34	79	100%	100%	100%

Post-harvest nitrate test (PHNT) **45 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	150 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	255 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-12-2016
Field ID	2	2016 Main Crop	Alfalfa
Field Name (area)	103A (south) (51 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	12.5	7.2 ¹	3.0
12-24	3.0	3.0	7.5	1.0
24-36	1.0	2.0	7.9	0.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	174	224	60	316

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	34	39	73	73%	71%	72%
12-24	9	9	19	20%	17%	18%
24-36	3	6	9	7%	11%	9%
0-36	47	54	101	100%	100%	100%

Post-harvest nitrate test (PHNT) **47 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	161 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	253 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	3	2016 Main Crop	Corn Silage
Field Name (area)	103C Island (12 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	24.0	3.5	7.5 ¹	3.5
12-24	9.0	6.0	7.8	2.0
24-36	14.0	3.0	7.8	1.8

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	60	77	36	149

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	75	11	85	51%	28%	46%
12-24	28	19	47	19%	48%	25%
24-36	43	9	53	30%	24%	29%
0-36	146	39	185	100%	100%	100%

Post-harvest nitrate test (PHNT) **146 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	55 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	119 Low	54 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-12-2016
Field ID	4	2016 Main Crop	Alfalfa
Field Name (area)	103B (west) (48 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.5	7.0	7.2 ¹	4.6
12-24	3.0	2.0	7.5	1.6
24-36	3.0	2.0	7.8	0.7

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	222	284	81	609

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	36	22	57	66%	64%	65%
12-24	9	6	16	17%	18%	18%
24-36	9	6	16	17%	18%	18%
0-36	54	34	88	100%	100%	100%

Post-harvest nitrate test (PHNT) **54 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	204 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	487 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-12-2016
Field ID	5	2016 Main Crop	Alfalfa
Field Name (area)	103B (east) (48 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.5	4.5	7.3 ¹	4.0
12-24	3.0	3.0	7.5	1.1
24-36	2.0	3.0	7.7	0.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	217	278	80	387

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	36	14	50	70%	43%	59%
12-24	9	9	19	18%	29%	22%
24-36	6	9	16	12%	29%	19%
0-36	51	33	84	100%	100%	100%

Post-harvest nitrate test (PHNT) **51 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	200 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	310 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	6	2016 Main Crop	Corn Silage
Field Name (area)	104 Harolds Lower (55 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	3.0	7.4 ¹	2.5
12-24	15.0	3.0	7.5	1.3
24-36	13.0	2.0	7.9	1.3

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	106	136	46	365

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	54	9	64	38%	38%	38%
12-24	47	9	56	33%	38%	34%
24-36	40	6	47	29%	25%	28%
0-36	141	25	166	100%	100%	100%

Post-harvest nitrate test (PHNT) **141 lb NO₃-N/ac** (0-36 inch soil depth)
 PHNT Rating **High³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	98 High	15 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	292 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	7	2016 Main Crop	Corn Silage
Field Name (area)	104 Harolds Upper (55 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	13.0	3.5	7.5 ¹	2.5
12-24	10.0	3.0	7.8	1.1
24-36	9.0	3.0	7.8	0.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	151	194	60	336

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	40	11	51	41%	37%	40%
12-24	31	9	40	31%	32%	31%
24-36	28	9	37	28%	32%	29%
0-36	99	29	129	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

99 lb NO₃-N/ac (0-36 inch soil depth)
High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	140 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	269 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	8	2016 Main Crop	Corn Silage
Field Name (area)	202 Reimer (37 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	13.5	4.5	7.3 ¹	2.5
12-24	10.0	4.0	7.4	.8
24-36	12.0	3.0	7.7	0.9

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	125	160	47	291

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	42	14	56	38%	39%	38%
12-24	31	12	43	28%	35%	30%
24-36	37	9	47	34%	26%	32%
0-36	110	36	146	100%	100%	100%

Post-harvest nitrate test (PHNT) **110 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	115 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	233 High	20 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	9	2016 Main Crop	Corn Silage
Field Name (area)	109 Sylvia (74 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	19.0	4.0	7.8 ¹	2.5
12-24	13.0	3.0	8.0	1.7
24-36	10.0	3.0	8.1	1.0

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	82	105	37	240

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	59	12	71	45%	40%	44%
12-24	40	9	50	31%	30%	31%
24-36	31	9	40	24%	30%	25%
0-36	130	31	161	100%	100%	100%

Post-harvest nitrate test (PHNT) **130 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	76 High	15 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	192 High	36 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	10	2016 Main Crop	Corn Silage
Field Name (area)	102 Sorensen (101 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	2.0	7.6 ¹	3.2
12-24	11.0	2.0	7.9	1.8
24-36	9.0	2.0	7.9	1.3

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	113	144	47	362

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	54	6	61	47%	33%	45%
12-24	34	6	40	29%	33%	30%
24-36	28	6	34	24%	33%	25%
0-36	116	19	135	100%	100%	100%

Post-harvest nitrate test (PHNT) **116 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	104 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	290 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-12-2016
Field ID	11	2016 Main Crop	Alfalfa
Field Name (area)	101 Barns (47 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	14.0	6.0	7.4 ¹	4.0
12-24	3.0	3.0	7.8	1.4
24-36	3.0	3.0	8.0	0.7

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	245	315	80	560

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	43	19	62	70%	50%	63%
12-24	9	9	19	15%	25%	19%
24-36	9	9	19	15%	25%	19%
0-36	62	37	99	100%	100%	100%

Post-harvest nitrate test (PHNT) **62 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	227 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	448 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-13-2016
Field ID	12	2016 Main Crop	Alfalfa
Field Name (area)	105 Dixon Back (101 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	7.0	4.5	7.2 ¹	1.5
12-24	3.0	3.0	8.0	.8
24-36	2.0	3.0	8.1	0.5

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	79	101	34	134

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	22	14	36	58%	43%	51%
12-24	9	9	19	25%	29%	27%
24-36	6	9	16	17%	29%	22%
0-36	37	33	70	100%	100%	100%

Post-harvest nitrate test (PHNT) **37 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	73 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	107 Low	54 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Nov-04-2016
Field ID	13	2016 Main Crop	Corn Silage
Field Name (area)	106 Dixon Front (15 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	1.5	7.4 ¹	2.4
12-24	6.0	2.0	7.8	1.1
24-36	4.0	1.0	8.0	0.6

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	155	199	53	251

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	34	5	39	52%	33%	49%
12-24	19	6	25	29%	44%	31%
24-36	12	3	16	19%	22%	20%
0-36	65	14	79	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

65 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	143 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	201 High	36 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-12-2016
Field ID	14	2016 Main Crop	Alfalfa
Field Name (area)	201 Skelton (72 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	10.5	4.0	7.2 ¹	2.0
12-24	4.0	2.0	8.1	.8
24-36	3.0	2.0	8.2	0.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	98	125	43	175

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	33	12	45	60%	50%	57%
12-24	12	6	19	23%	25%	24%
24-36	9	6	16	17%	25%	20%
0-36	54	25	79	100%	100%	100%

Post-harvest nitrate test (PHNT) **54 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	90 High	15 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	140 Medium	54 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-12-2016
Field ID	15	2016 Main Crop	Corn Silage
Field Name (area)	210 Waynes (28 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	13.0	3.5	7.2 ¹	5.0
12-24	12.0	2.0	7.4	1.4
24-36	8.0	2.0	8.0	0.6

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	185	237	66	292

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	40	11	51	39%	47%	41%
12-24	37	6	43	36%	27%	35%
24-36	25	6	31	24%	27%	25%
0-36	102	23	126	100%	100%	100%

Post-harvest nitrate test (PHNT) **102 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	171 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	234 High	20 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-12-2016
Field ID	16	2016 Main Crop	Corn Silage
Field Name (area)	209 Swaans (27 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	5.5	4.5	7.6 ¹	3.8
12-24	6.0	3.0	7.8	1.4
24-36	6.0	2.0	8.2	1.0

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	70	90	36	257

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	17	14	31	31%	47%	37%
12-24	19	9	28	34%	32%	33%
24-36	19	6	25	34%	21%	30%
0-36	54	29	84	100%	100%	100%

Post-harvest nitrate test (PHNT) **54 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	65 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	206 High	36 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-11-2016
Field ID	17	2016 Main Crop	Trees
Field Name (area)	Purple Springs East (64 acres)	2017 Main Crop (planned)	Trees

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	3.5	6.0	7.7 ¹	4.3
12-24	3.0	5.0	8.1	1.8
24-36	5.0	7.0	8.0	1.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	149	191	58	385

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	11	19	29	30%	33%	32%
12-24	9	16	25	26%	28%	27%
24-36	16	22	37	43%	39%	41%
0-36	36	56	92	100%	100%	100%

Post-harvest nitrate test (PHNT) **36 lb NO₃-N/ac** (0-36 inch soil depth)
 PHNT Rating **Low³**

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Trees)
Soil Test P (0-6 in.) Kelowna method (ppm)	138 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	308 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-11-2016
Field ID	18	2016 Main Crop	Trees
Field Name (area)	Purple Springs West (106 acres)	2017 Main Crop (planned)	Trees

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	2.5	5.5	7.5 ¹	4.2
12-24	2.0	5.0	7.9	1.8
24-36	5.0	5.0	8.0	1.1

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	151	194	56	349

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	8	17	25	26%	35%	32%
12-24	6	16	22	21%	32%	28%
24-36	16	16	31	53%	32%	40%
0-36	29	48	78	100%	100%	100%

Post-harvest nitrate test (PHNT) **29 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Trees)
Soil Test P (0-6 in.) Kelowna method (ppm)	140 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	279 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-06-2016
Field ID	19	2016 Main Crop	Corn Silage
Field Name (area)	101 Home (17 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	20.0	6.0	7.1 ¹	6.9
12-24	3.0	4.0	7.7	1.5
24-36	3.0	4.0	7.9	1.0

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	463	593	152	630

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	62	19	81	77%	43%	65%
12-24	9	12	22	12%	29%	18%
24-36	9	12	22	12%	29%	18%
0-36	81	43	124	100%	100%	100%

Post-harvest nitrate test (PHNT) **81 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	427 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	504 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-12-2016
Field ID	20	2016 Main Crop	Corn Silage
Field Name (area)	102 West (51 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	14.0	3.5	7.4 ¹	6.4
12-24	2.0	2.0	7.9	1.8
24-36	6.0	2.0	8.1	1.2

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	304	390	101	410

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	43	11	54	64%	47%	59%
12-24	6	6	12	9%	27%	14%
24-36	19	6	25	27%	27%	27%
0-36	68	23	92	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

68 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	281 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	328 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-06-2016
Field ID	21	2016 Main Crop	Alfalfa
Field Name (area)	103 Far West & 104 West Hill (63 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	6.5	5.0	7.1 ¹	4.5
12-24	10.0	4.0	7.7	1.4
24-36	1.0	4.0	8.0	0.8

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	262	336	95	166

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	20	16	36	37%	38%	38%
12-24	31	12	43	57%	31%	46%
24-36	3	12	16	6%	31%	16%
0-36	54	40	95	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

54 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	242 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	133 Medium	54 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-06-2016
Field ID	22	2016 Main Crop	Corn Silage
Field Name (area)	105 Feedlot Bottom (33 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	8.5	6.0	7.3 ¹	5.0
12-24	4.0	4.0	7.7	1.5
24-36	5.0	5.0	8.0	0.9

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	342	439	111	401

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	26	19	45	49%	40%	45%
12-24	12	12	25	23%	27%	25%
24-36	16	16	31	29%	33%	31%
0-36	54	47	101	100%	100%	100%

Post-harvest nitrate test (PHNT) **54 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	316 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	321 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-13-2016
Field ID	23	2016 Main Crop	Alfalfa
Field Name (area)	205 Reserve (41 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	6.0	7.1 ¹	4.0
12-24	1.0	3.0	7.4	1.3
24-36	1.0	3.0	7.9	0.7

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	110	141	50	143

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	34	19	53	85%	50%	68%
12-24	3	9	12	8%	25%	16%
24-36	3	9	12	8%	25%	16%
0-36	40	37	78	100%	100%	100%

Post-harvest nitrate test (PHNT) **40 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	102 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	114 Low	54 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-06-2016
Field ID	24	2016 Main Crop	Corn Silage
Field Name (area)	206 Lens (44 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	8.5	6.0	7.3 ¹	5.9
12-24	1.0	5.0	7.6	1.5
24-36	1.0	4.0	7.8	1.2

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	238	305	86	414

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	26	19	45	81%	40%	57%
12-24	3	16	19	10%	33%	24%
24-36	3	12	16	10%	27%	20%
0-36	33	47	79	100%	100%	100%

Post-harvest nitrate test (PHNT) **33 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	220 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	331 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	2	Sample Date	Oct-11-2016
Field ID	25	2016 Main Crop	Corn Silage
Field Name (area)	207 Top Reserve+ 208 Dorthy's (52 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	7.5	6.0	7.3 ¹	4.3
12-24	1.0	5.0	7.5	1.5
24-36	1.0	3.0	8.0	1.0

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	163	209	54	374

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	23	19	42	79%	43%	57%
12-24	3	16	19	11%	36%	26%
24-36	3	9	12	11%	21%	17%
0-36	29	43	73	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

29 lb NO₃-N/ac (0-36 inch soil depth)
Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	150 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	299 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	3	Sample Date	Oct-25-2016
Field ID	26	2016 Main Crop	Corn Silage
Field Name (area)	101 Above Feedlot (69 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	2.0	7.7 ¹	4.3
12-24	11.0	1.0	8.0	1.6
24-36	7.0	2.0	8.1	0.9

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	184	236	63	501

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	54	6	61	49%	40%	48%
12-24	34	3	37	31%	20%	30%
24-36	22	6	28	20%	40%	22%
0-36	110	16	126	100%	100%	100%

Post-harvest nitrate test (PHNT) **110 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	170 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	401 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	3	Sample Date	Oct-25-2016
Field ID	27	2016 Main Crop	Corn Silage
Field Name (area)	102A Parkinson Lake (17 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	15.0	2.0	7.7 ¹	6.6
12-24	17.0	2.0	7.8	2.6
24-36	15.0	2.0	7.9	1.6

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	197	253	65	577

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	47	6	53	32%	33%	32%
12-24	53	6	59	36%	33%	36%
24-36	47	6	53	32%	33%	32%
0-36	146	19	165	100%	100%	100%

Post-harvest nitrate test (PHNT) **146 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	182 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	462 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	3	Sample Date	Oct-25-2016
Field ID	28	2016 Main Crop	Corn Silage
Field Name (area)	102B Parkinson Lake (56 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	20.5	2.0	7.7 ¹	6.6
12-24	13.0	1.0	7.9	2.3
24-36	8.0	2.0	8.2	1.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	206	264	74	610

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	64	6	70	49%	40%	48%
12-24	40	3	43	31%	20%	30%
24-36	25	6	31	19%	40%	22%
0-36	129	16	144	100%	100%	100%

Post-harvest nitrate test (PHNT) **129 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	190 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	488 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	3	Sample Date	Oct-25-2016
Field ID	29	2016 Main Crop	Corn Silage
Field Name (area)	103 Hullcar Rd. (62 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.5	4.0	7.4 ¹	4.8
12-24	8.0	2.0	8.0	1.8
24-36	12.0	2.0	8.0	1.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	220	282	75	479

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	54	12	67	47%	50%	47%
12-24	25	6	31	21%	25%	22%
24-36	37	6	43	32%	25%	31%
0-36	116	25	141	100%	100%	100%

Post-harvest nitrate test (PHNT) **116 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	203 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	383 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	3	Sample Date	Oct-25-2016
Field ID	30	2016 Main Crop	Corn Silage
Field Name (area)	104 Kevins (29 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	12.5	3.0	7.7 ¹	7.0
12-24	7.0	3.0	8.1	2.1
24-36	5.0	2.0	7.9	1.4

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	181	232	69	302

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	39	9	48	51%	38%	48%
12-24	22	9	31	29%	38%	31%
24-36	16	6	22	20%	25%	22%
0-36	76	25	101	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

76 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	167 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	242 High	20 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	3	Sample Date	Oct-25-2016
Field ID	31	2016 Main Crop	Corn Silage
Field Name (area)	105 Krebbers (72 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	31.0	5.0	7.2 ¹	3.0
12-24	25.0	3.0	7.8	1.2
24-36	16.0	3.0	8.0	1.0

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	154	197	52	276

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	96	16	112	43%	45%	43%
12-24	78	9	87	35%	27%	34%
24-36	50	9	59	22%	27%	23%
0-36	224	34	258	100%	100%	100%

Post-harvest nitrate test (PHNT) **224 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Very High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	142 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	221 High	20 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	4	Sample Date	Oct-11-2016
Field ID	32	2016 Main Crop	Corn Silage
Field Name (area)	101A Home Pivot North (62 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	9.5	5.5	7.5 ¹	3.8
12-24	4.0	5.0	7.8	1.3
24-36	6.0	4.0	7.8	1.2

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	181	232	69	484

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	29	17	47	49%	38%	44%
12-24	12	16	28	21%	34%	26%
24-36	19	12	31	31%	28%	29%
0-36	61	45	106	100%	100%	100%

Post-harvest nitrate test (PHNT)
PHNT Rating

61 lb NO₃-N/ac (0-36 inch soil depth)
Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	167 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	387 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	4	Sample Date	Sep-30-2016
Field ID	33	2016 Main Crop	Alfalfa
Field Name (area)	101B Home Pivot Road (80 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	22.0	4.5	7.5 ¹	4.2
12-24	3.0	4.0	8.1	1.2
24-36	3.0	3.0	8.1	0.9

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	253	324	92	551

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	68	14	82	79%	39%	67%
12-24	9	12	22	11%	35%	18%
24-36	9	9	19	11%	26%	15%
0-36	87	36	123	100%	100%	100%

Post-harvest nitrate test (PHNT) **87 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	233 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	441 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	4	Sample Date	Oct-11-2016
Field ID	34	2016 Main Crop	Corn Silage
Field Name (area)	102 Bottom Back (47 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	29.0	4.0	7.5 ¹	7.3
12-24	17.0	6.0	7.7	1.5
24-36	13.0	4.0	7.7	1.2

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	166	213	57	481

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	90	12	102	49%	29%	45%
12-24	53	19	71	29%	43%	32%
24-36	40	12	53	22%	29%	23%
0-36	183	43	227	100%	100%	100%

Post-harvest nitrate test (PHNT) **183 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Very High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	153 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	385 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	4	Sample Date	Sep-30-2016
Field ID	35	2016 Main Crop	Corn Silage
Field Name (area)	105 Top Back (14 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	7.0	4.5	7.4 ¹	5.8
12-24	3.0	2.0	7.7	1.6
24-36	4.0	2.0	7.7	0.8

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	203	260	72	572

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	22	14	36	50%	53%	51%
12-24	9	6	16	21%	24%	22%
24-36	12	6	19	29%	24%	27%
0-36	43	26	70	100%	100%	100%

Post-harvest nitrate test (PHNT) **43 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	187 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	458 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	4	Sample Date	Sep-30-2016
Field ID	36	2016 Main Crop	Corn Silage
Field Name (area)	201 Reserve Pivot (61 acres)	2017 Main Crop (planned)	Corn Silage

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	11.0	5.5	7.3 ¹	5.2
12-24	2.0	5.0	7.3	1.3
24-36	2.0	4.0	7.3	0.9

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	128	164	48	298

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	34	17	51	73%	38%	56%
12-24	6	16	22	13%	34%	24%
24-36	6	12	19	13%	28%	20%
0-36	47	45	92	100%	100%	100%

Post-harvest nitrate test (PHNT) **47 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Corn Silage)
Soil Test P (0-6 in.) Kelowna method (ppm)	118 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	238 High	20 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	1	Sample Date	Oct-13-2016
Field ID	37	2016 Main Crop	Alfalfa
Field Name (area)	Jessie's field (29 acres)	2017 Main Crop (planned)	Alfalfa

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	17.0	4.0	7.5 ¹	1.9
12-24	5.0	3.0	8.4	1.1
24-36	1.0	3.0	8.6	0.7

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	60	77	30	211

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	53	12	65	74%	40%	64%
12-24	16	9	25	22%	30%	24%
24-36	3	9	12	4%	30%	12%
0-36	71	31	102	100%	100%	100%

Post-harvest nitrate test (PHNT) **71 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Medium³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Alfalfa)
Soil Test P (0-6 in.) Kelowna method (ppm)	55 High	27 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	169 Medium	36 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	4	Sample Date	Oct-11-2016
Field ID	38	2016 Main Crop	Grass
Field Name (area)	301 Matheson Rd. (58 acres)	2017 Main Crop (planned)	Grass

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	1.0	5.0	7.8 ¹	6.0
12-24	1.0	4.0	7.9	1.7
24-36	1.0	4.0	8.0	1.2

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	10	13	7	162

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	3	16	19	33%	38%	38%
12-24	3	12	16	33%	31%	31%
24-36	3	12	16	33%	31%	31%
0-36	9	40	50	100%	100%	100%

Post-harvest nitrate test (PHNT) **9 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Low³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Grass)
Soil Test P (0-6 in.) Kelowna method (ppm)	9 Low	107 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	130 Medium	54 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	5	Sample Date	Sep-30-2016
Field ID	39	2016 Main Crop	Spelt
Field Name (area)	101 Main (40 acres)	2017 Main Crop (planned)	Winter Canola

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	23.0	6.5	7.1 ¹	4.1
12-24	5.0	4.0	7.4	1.3
24-36	2.0	3.0	7.6	0.6

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	355	455	118	552

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	71	20	92	77%	48%	68%
12-24	16	12	28	17%	30%	21%
24-36	6	9	16	7%	22%	11%
0-36	93	42	135	100%	100%	100%

Post-harvest nitrate test (PHNT) **93 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Winter Canola)
Soil Test P (0-6 in.) Kelowna method (ppm)	328 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	442 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.

This is an archival version that has been replaced.

Farm ID	5	Sample Date	Sep-30-2016
Field ID	40	2016 Main Crop	Spelt
Field Name (area)	102 Old Feedlot (8 acres)	2017 Main Crop (planned)	Winter Canola

Laboratory Measurements

- The 0-12 inch values are each an average of the concentrations at the 0-6 inch and 6-12 inch soil depths. See the original laboratory report for the 0-6 inch and 6-12 inch values.

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, ppm)	Ammonium -Nitrogen (NH ₄ -N, ppm)	Soil pH (water)	Organic Matter (%)
0-12	35.0	8.0	6.7 ¹	5.7
12-24	14.0	9.0	7.3	.8
24-36	15.0	23.0	7.4	0.6

Depth (inches)	Soil Test Phosphorus (P) Bray P1 (ppm) ²	Soil Test Phosphorus (P) Mehlich 3 (ppm) ²	Soil Test Phosphorus (P) Bicarbonate (ppm) ²	Soil Test Potassium (K) Ammonium Acetate (ppm) ²
0-6	882	1131	285	1243

Estimates from Laboratory Measurements

Depth (inches)	Nitrate -Nitrogen (NO ₃ -N, lb/ac) ³	Ammonium -Nitrogen (NH ₄ -N, lb/ac) ³	Mineral Nitrogen (NO ₃ -N and NH ₄ -N, lb/ac) ⁴	% of NO ₃ (0-36 in.) in each depth	% of NH ₄ (0-36 in.) in each depth	% of Mineral N (0-36 in.) in each depth
0-12	109	25	134	55%	20%	41%
12-24	43	28	71	22%	23%	22%
24-36	47	71	118	23%	58%	37%
0-36	199	124	323	100%	100%	100%

Post-harvest nitrate test (PHNT) **199 lb NO₃-N/ac** (0-36 inch soil depth)

PHNT Rating

Very High³

See footnotes for management suggestions, applicable if growing the same crop next year in the same field

Interim Production Recommendations⁵

	Rating	Recommended Application for 2017 (Winter Canola)
Soil Test P (0-6 in.) Kelowna method (ppm)	814 Very High	0 lb P₂O₅ per acre
Soil Test K (0-6 in.) Kelowna method (ppm)	994 Very High	0 lb K₂O per acre

All results are on an oven-dry basis.