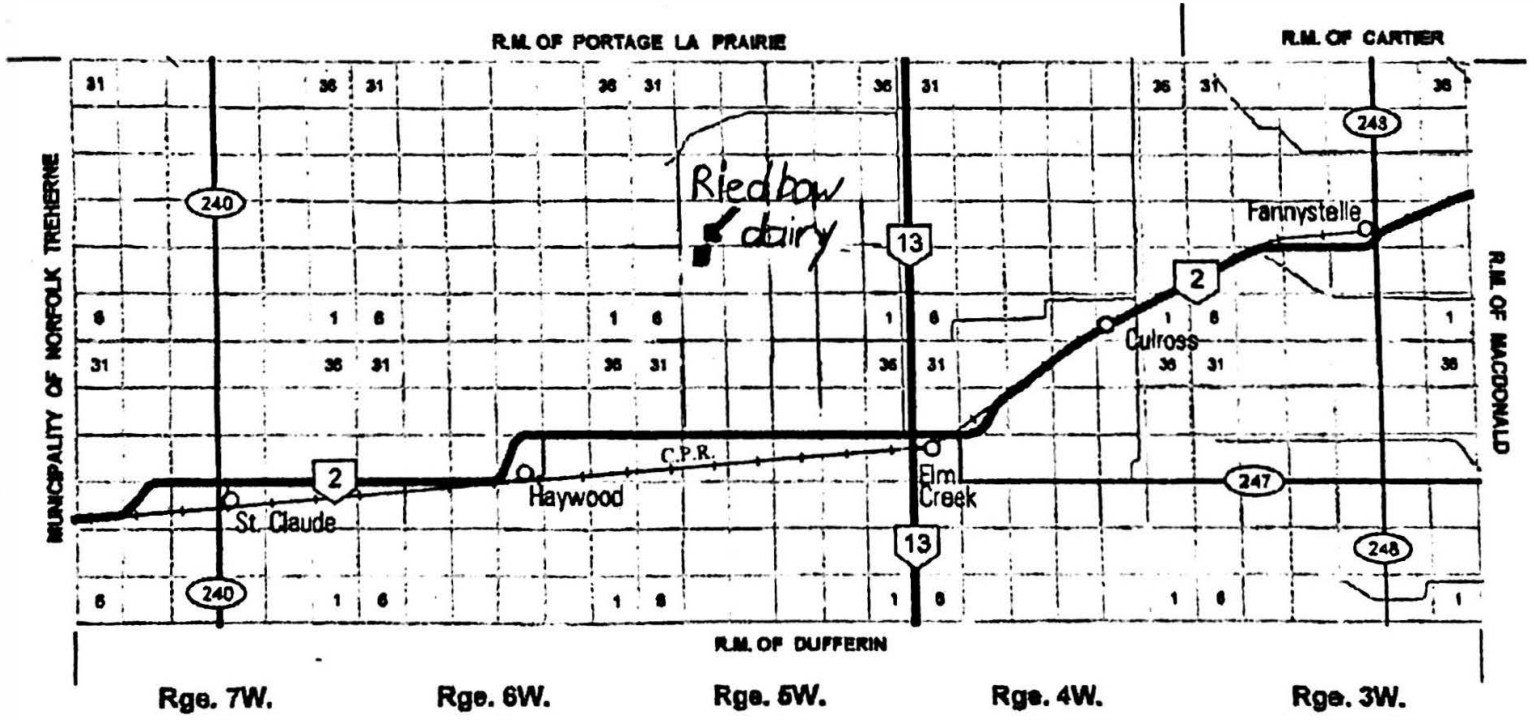
R.M. OF GREY

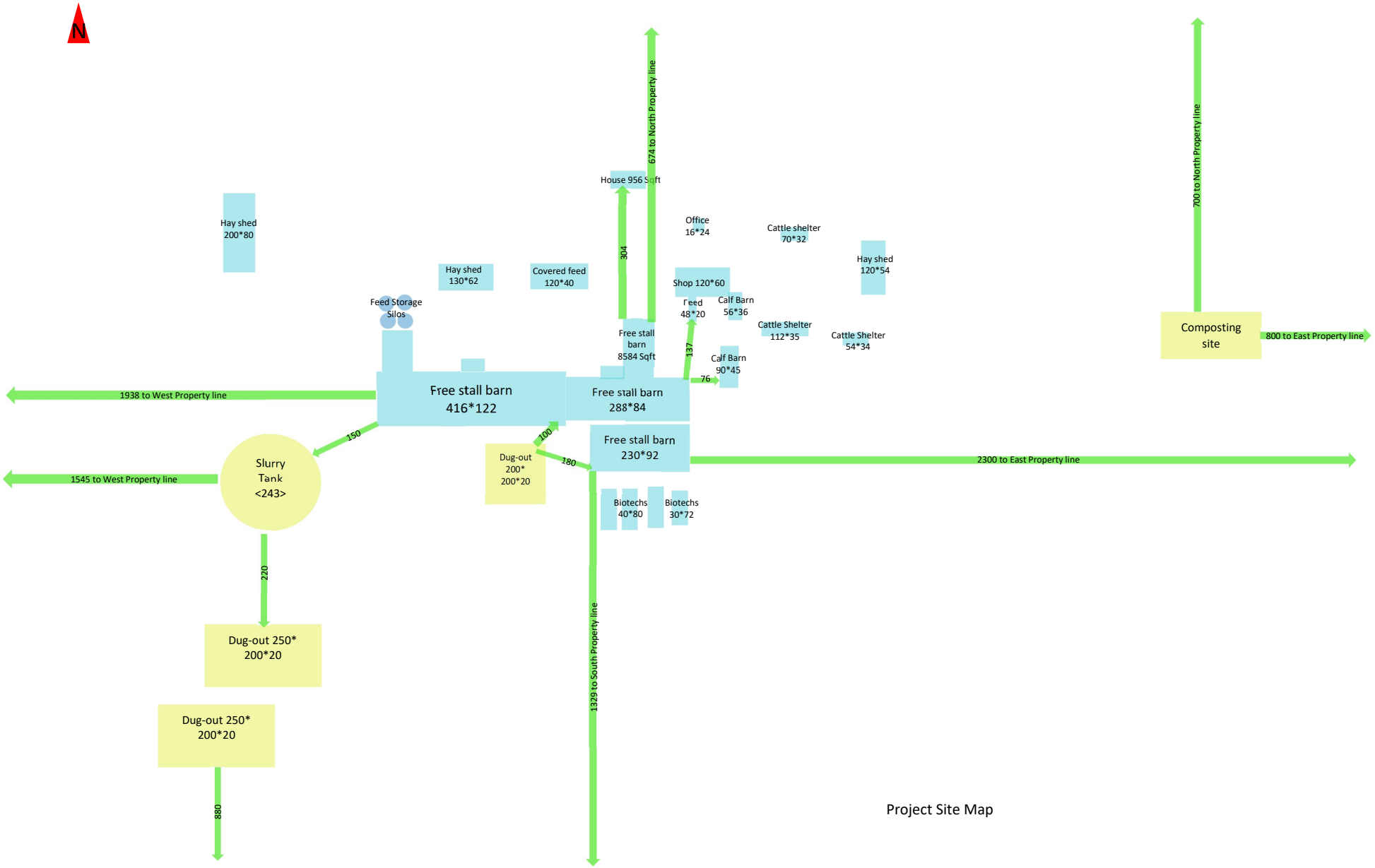
0 5
SCALE IN KILOMETRES

PROVINCE OF MANITOBA
INFRASTRUCTURE
HIGHWAY PLANNING AND DESIGN BRANCH
GEOGRAPHIC & RECORDS MANAGEMENT SECTION
WINNIPEG
JANUARY 1, 2015

LEGEND

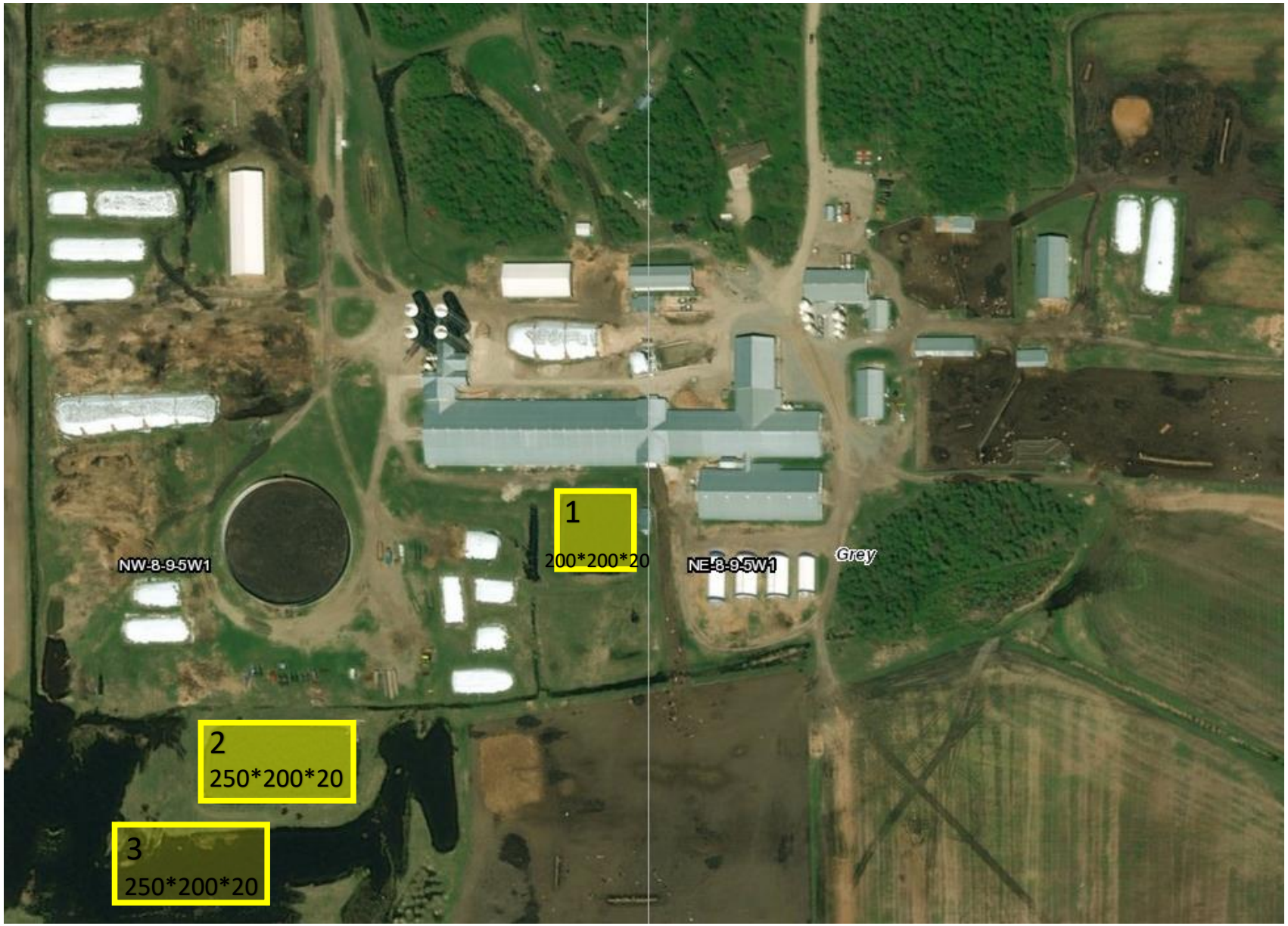
PROVINCIAL TRUNK HIGHWAYS 13
PROVINCIAL ROADS 247
ACCESS ROADS .....
RAILWAYS .....





Project Site Map

7.2 Map of Dug-outs



Animal Units Calculator

A	B	C	Current Operation		Proposed Operation	
			D	E	F	G
Operation Type	**Animal Categories**	**Animal Units per Head**	**Current Number of Animals [1]**	**Current Animal Units**	**Proposed Number of Animals 2** **Based on 1.000 milk cows and 250 dry cows**	**Proposed Number of Animal Units**
Dairy [3]	Mature cows (lactating and dry) including associated livestock	2	800	1,600	1,250	2,500
	Mature cows (lactating and dry)	1.35		-		-
	Heifers (0 to 3 months)	0.16		-		-
	Heifers (4 to 13 months)	0.41		-		-
	Heifers (> 13 months)	0.87		-		-
	Bulls	1.35		-		-
	Veal calves	0.13		-		-
Beef	Beef cows including associated livestock	1.25	-	-	50	63
	Backgrounder	0.5		-		-
	Summer pasture / replacement heifers	0.625		-		-
	Feeder cattle	0.769		-		-
Pigs	Sows - farrow to finish (234-254 lbs)	1.25		-		-
	Sows - farrow to weanling (up to 11 lbs)	0.25		-		-
	Sows - farrow to nursery (51 lbs)	0.313		-		-
	Boars (artificial insemination units)	0.2		-		-
	Weanlings, Nursery (11-51 lbs)	0.033		-		-
	Growers / Finishers (51-249 lbs)	0.143		-		-
Chickens	Broilers	0.005		-		-
	Roasters	0.01		-		-
	Layers	0.0083		-		-
	Pullets	0.0033		-		-
	Broiler breeder pullets	0.0033		-		-
	Broiler breeder hens	0.01		-		-
Turkeys	Broilers	0.01		-		-
	Heavy Toms	0.02		-		-
	Heavy Hens	0.01		-		-
Horses	Mares	1.333		-		-
Sheep	Ewes	0.2		-		-
	Feeder lambs	0.063		-		-
Other Livestock	Type:			-		-
	Type:			-		-
			Total Current:	1,600	Total Proposed:	2,563

Footnotes:

[1] Enter the current number of animals on the farm based on the operation's capacity (animal places) or previous Conditional Use Approval.

[2] Enter the total number of animals associated with the operation post construction or expansion.

[3] There are 2 methods for calculating animal units for dairy (Farm Practices Guidelines for Dairy Producers in Manitoba, 1995). You can enter the total number of mature cows in the milking herd under the "Mature cows (lactating and dry) including associated livestock" category and the animal units will be calculated by multiplying this number by 2. This calculation assumes 85 lactating, 15 dry, 12 heifers (0 to 3 months), 36 heifers (4 to 13 months) and 50 heifers (> 13 months) for an operation with 100 mature cows. "Associated livestock" includes all of the heifer calves and replacement heifers. Alternatively, you can enter animal numbers in the individual categories (mature cows, heifers (0 to 3 months), heifers (4 to 13 months) and heifers (> 13 months)) and they will be summed at the bottom of the table. Bulls and veal calves are always calculated separately.

For all other livestock or operation types please inquire with the Manitoba Agriculture Contacts

Manitoba

03/06/2019 14:13

Dairy Barn Water Requirement Estimator*

Enter the following farm data:

Number of lactating/milking cows	1000	
Average milk production (litres)	33	**
Parlor or tie stall (P/TS)	P	Robot
Collection yard if free stall (Y/N)	Y	
Plate cooler (Y/N)	Y	
Milkings per day	2.8	
Plate cooler water reused? (Y/N)	Y	

Total water needs estimate per day:	
Litres	203090
Imperial gallons	44733
Cubic decametres	0.20

Total water needs estimate per year:	
Litres	74127850
Imperial gallons	16327720
Cubic decametres	74.13

*Calculations are based on Manitoba AVERAGES for

- Feed composition
- Barn conditions
- Cleaning requirement
- Replacement stock needs

** Average milk production is 33 litres/cow/day

NOTE: robotic milkers need more water due to increased washing

Manitoba

Existing Manure Storage Facility Dimension Table

If applicable, indicate the dimensions of any existing manure storage facility (MSF) that will be used to store manure from the proposed project:

CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	ft	ft	ft	ft			
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Steel Tank		Diameter	Height	Depth (Above Grade)			
		243 ft	19 ft	1 ft			

Permit/Registration # _____ LM-0770 _____

Manitoba

8.3 Manure Storage Facility Dimensions Tables

CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	ft	ft	ft	ft			
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Square under barn PIT		Length	Width	Depth			
		230 ft	91 ft	8 ft			

Permit/Registration # _____ LM-0576_____

Manitoba

8.3 Manure Storage Facility Dimensions Tables

CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	ft	ft	ft	ft			
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Square under barn PIT		Length	Width	Depth			
		288t	84t	8t			

Permit/Registration # _____ LM-0576

Manitoba

Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period [2] (Days) (G)	Number of Animals [3] (Capacity) (H)	Total Manure Volume (ft^3) (FxGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
		References (C)	Manure Type (D)	Default Manure Production (ft^3/animal/day) (E)	Operation Manure Production [1] (ft^3/animal/day) (F)				
Dairy (milking cows[4] and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid [5]	3.5				-	0.0
			Solid	3.4	3.4	365	250	310,250.00	
			Liquid [5]	3.5	3.5	365	1000	1,277,500.00	7,958,825.0
	Tie Stall		Semi-Solid [5]	3.6				-	0.0
			Solid	3.5				-	
			Liquid [5]	3.6				-	0.0
	Loose Housing		Solid	3.0				-	
	Milking Parlour Manure and Washwater		Liquid	0.5					
Beef	Beef cows including associated livestock	pg 117, FPGs for Hogs 1998	Solid	1.2	1.2	365.00	50	21,900.00	
	Backgrounder (200 day)		Solid	0.73				-	
	Summer pasture / replacement heifers		Solid	0.85				-	
	Feeder cattle		Solid	1.1				-	
Pigs	Sows - farrow to finish (234 - 254 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	2.3				-	0.0
	Sows - farrow to wean (up to 11 lbs)		Liquid	0.8				-	0.0
	Sows - farrow to nursery (51 lbs)		Liquid	1				-	0.0
	Weanlings, Nursery (11 - 51 lbs)		Liquid	0.1				-	0.0
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25				-	0.0

Animal Type	Type of Operation		Yearly Manure Production		Production Period [2] (Days)	Number of Birds [3] (Capacity)	Total Manure Volume (ft^3) (F/365xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
			Default Manure Production (ft^3/year/bird space)	Operation Manure Production [1] (ft^3/year/bird space)				
Chickens	Broilers – floor [6]	Table 3, pg 85, FPGs for Poultry 2000	1.23				-	
	Broiler breeder hens [7]		2.3				-	
	Broiler breeder pullets [6]		0.99				-	
	Roasters – floor [6]		1.16				-	
	Layers – cage [8]		2.33				-	0.0
	Layers – floor [7]		1.68				-	
	Layers – solid pack [9]						-	
	Pullets – cage [8]		0.71				-	0.0
	Pullets – floor [6]		0.75				-	
	Pullets – solid pack [9]						-	
Turkeys	Broilers [6]	Table 3, pg 85, FPGs for Poultry 2000	2.83				-	
	Heavy toms [6]		5.58				-	
	Heavy hens [6]		3.32				-	

Sizing of a manure storage facility in accordance with all requirements of the Livestock Manure and Mortalities Management Regulation (M.R. 42/98) is the responsibility of the operator.

Instructions and footnotes:

[1] ENTER the manure production estimate for your operation. If no estimate is available, use the default value provided in colum E. References for default daily and yearly manure production are provided in column C.

[2] ENTER the number of days worth of manure that will be produced. For earthen manure storage facilities the minimum storage requirement is 400 days. For steel and concrete manure storage facilities the minimum storage requirement is 250

[3] ENTER the total number of animals or birds that the operation can hold (e.g. barn or feedlot capacity).

[5] Default manure production estimates for semi-solid and liquid dairy manure include manure and washwater from the milking parlour.

[6] 2 inches of wood shavings or 4 inches of straw placed on floor. Manure and litter removed from barn at 25% moisture content, with a density of 20 lb/ft^3

[7] One-third litter floor, two-thirds slatted floor. Manure and litter removed from barn at 40% moisture content, with a density of 25 lb/ft^3

[8] Manure removed from barn at 90% moisture content with a density of 59 lb/ft^3

[9] Poultry operations using litter (solid pack) must provide an estimate of yearly manure production

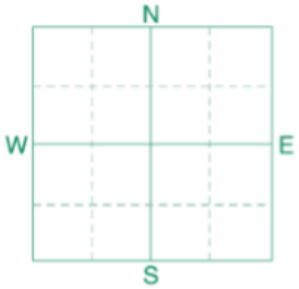
	MANURE APPLICATION FIELD CHARACTERISTICS TABLE											
ID#	Name of the field:	Date sample	A	B	C	D	E	F	G	H	I	J
	Field		**Legal Description**	**Rural Municipality**	**O/C/L/A**	**Total Acreage**	**Setbacks, including features**	**Net Acreage for Manure Application**	**Agriculture Capability Class and Subclass**	**Soil Phosphorus (ppm Olsen P) 0-6 inches**	**Development Plan Designation**	**Zoning**
1	Boyachek	25-04-2019	NW 33-9-5	Grey	O	160	RM ditch	140	1, 2DMW	26	By Law 2/99 Zone A	By Law 5/03 Zone AG
2	Jack Foote	25-04-2019	NW 28-9-5	Grey	O/L/A	160	RM ditch / drains	145	2M, 3MW, 4M	12	By Law 2/99 Zone A	By Law 5/03 Zone AG
3	Jack Foote	25-04-2019	SW 28-9-5	Grey	LA	160	RM ditch / drains	145	3MW, 4M, 5W	37	By Law 2/99 Zone A	By Law 5/03 Zone AG
4	Jack Foote	25-04-2019	SE & NE 28-9-5	Grey	LA	160	RM ditch / drains	132	1, 2M, 3MW, 4M	35	By Law 2/99 Zone A	By Law 5/03 Zone AG
5	Evan150	27-04-2019	SE 13-9-6 & SW 18-9-5	Grey	LA	240	RM ditch / drains / bush	159	4M, 5W, 6W	15	By Law 2/99 Zone A	By Law 5/03 Zone AG
6	Evan70	27-04-2019	NW 18-9-5	Grey	LA	160	RM ditch / bush / yard / dugout	115	3M, 4M	38	By Law 2/99 Zone A	By Law 5/03 Zone AG
7	H. Froese Evan	27-04-2019	E 18-9-5	Grey	A	100	tch / bush / yard / dugout, class 6 l	55	3W, 4M, 5W, 6W	62	By Law 2/99 Zone A	By Law 5/03 Zone AG
8	Henrys place	25-04-2019	NW 17-9-5	Grey	A	120	l ditch / bush / dugout, class 6 left	46	3MW, 4M, 6W	16	By Law 2/99 Zone A	By Law 5/03 Zone AG
9	Piet Veldhuis	27-04-2019	NW 17-9-5	Grey	A	100	RM ditch, yard, bush	48	3MW, 4M, 6W	32	By Law 2/99 Zone A	By Law 5/03 Zone AG
10	Pasture Arlan	27-04-2019	SW 17-9-5	Grey	LA	110	RM ditch / bush / dugout	91	4M, 6W	69	By Law 2/99 Zone A	By Law 5/03 Zone AG
11	H. Froese	15-9-2018	SE 17-9-5	Grey	LA	240	RM ditch / bush, class 6 left out	107	3M, 4M, 5W, 6M	22	By Law 2/99 Zone A	By Law 5/03 Zone AG
12	Poirier90	27-04-2019	SW 11-9-6	Grey	LA	130	RM ditch / bush	85	3MW, 4M	13	By Law 2/99 Zone A	By Law 5/03 Zone AG
13	Home	15-9-2018	N 8-9-5	Grey	LA	320	tch / bush / dugout / yard, class 6 l	154	4M, 6M	62	By Law 2/99 Zone A	By Law 5/03 Zone AG
14	Pasture Derrick	25-04-2019	NW 9-9-5W	Grey	A	80	RM ditch / bush	73	3W, 4M, 5W	6	By Law 2/99 Zone A	By Law 5/03 Zone AG
15	Accross Hielke	15-9-2018	NE 9-9-5	Grey	O	160	RM ditch / drain / bush	77	3M, 4M	20	By Law 2/99 Zone A	By Law 5/03 Zone AG
16	Jack Neufeld	27-04-2019	SW 9-9-5	Grey	A	160	Bush	98	4M, 6M	14	By Law 2/99 Zone A	By Law 5/03 Zone AG
17	Jack Neufeld	27-04-2019	SE 9-9-5	Grey	A	160	tch / bush / dugout / yard, class 6 l	103	3W, 4M, 6M	11	By Law 2/99 Zone A	By Law 5/03 Zone AG
18	Hielke	15-09-2018	W 10-9-5	Grey	LA	120	RM ditch / three line / bush	105	3MW, 4M	21	By Law 2/99 Zone A	By Law 5/03 Zone AG
19	Le Floche	15-9-2018	NE & SE 2-9-6	Grey	LA	240	RM ditch / bush / dugout	192	3MW, 4M, 5W	8	By Law 2/99 Zone A	By Law 5/03 Zone AG
20	Pat Houde	23-04-2019	NE 6-9-5	Grey	LA	160	RM ditch / bush / dugout	104	3W, 4M	20	By Law 2/99 Zone A	By Law 5/03 Zone AG
21	Hugo's	23-04-2019	NW 19-8-5	Grey	LA	133	RM ditch / bush / dugout / yard	116	3MW, 4M, 5W	37	By Law 2/99 Zone A	By Law 5/03 Zone AG
22	Hugo's	23-04-2019	SE + SW 19-8-5 N tracks	Grey	LA	141	RM ditch / bush / yard / tracks	136	3MW, 4M, 5W	22	By Law 2/99 Zone A	By Law 5/03 Zone AG
23	Hugo's	27-04-2019	SE + SW 19-8-5 S tracks	Grey	LA	150	RM ditch / bush / yard / tracks	126	3MW, 4M, 5W	35	By Law 2/99 Zone A	By Law 5/03 Zone AG
24	Ens320	15-9-2018	W 8-10-5	Portage	O	320	RM ditch / bush	288	1, 2MW, 5MW	15	1-2006	By Law 3096 Zone AG
25	Jack Neufeld	25-04-2019	NW 9-9-5E	Grey	A	80	RM ditch / bush	68	4M	12	By Law 2/99 Zone A	By Law 5/03 Zone AG
26	Boyachek	25-04-2019	NE 33-9-5	Grey	O	160	RM ditch	140	1, 2DMW	19	By Law 2/99 Zone A	By Law 5/03 Zone AG
27	Evan Pasture	27-04-2019	NE 13-9-6	Grey	LA	160	RM ditch / bush / dugout / yard	130	3MW, 4M, 5W, 6W	16	By Law 2/99 Zone A	By Law 5/03 Zone AG
28	Jack Neufeld	25-04-2019	NW & NE 4-9-5N	Grey	A	160	RM ditch / bush / yard / dugout	83	3MW, 4M, 6W	22	By Law 2/99 Zone A	By Law 5/03 Zone AG
29	H. Froese home	28-05-2019	NE 18-9-5N	Grey	A	140	l ditch / bush / dugout, class 6 left	55	4M, 6W	47	By Law 2/99 Zone A	By Law 5/03 Zone AG
30	3/4 huts NE	01-09-2019	NE 12-9-6	Grey	O	160	RM ditch / bush / class 6 left out	147	3MW, 4M, 5W, 6W	5	By Law 2/99 Zone A	By Law 5/03 Zone AG
31	3/4 huts NW	01-09-2019	NW 12-9-6	Grey	O	160	RM ditch / class 6 left out	154	3MW, 4M, 5W, 6W	3	By Law 2/99 Zone A	By Law 5/03 Zone AG
32	3/4 huts SW	01-09-2019	SW 12-9-6	Grey	O	160	RM ditch / class 6 left out	132	3MW, 4M, 5W, 6W	12	By Law 2/99 Zone A	By Law 5/03 Zone AG
33	N LeFloche huts	01-09-2019	NE 11-9-6	Grey	O	160	RM ditch / bush / dugout	145	3MW, 4M	4	By Law 2/99 Zone A	By Law 5/03 Zone AG
34	Across Poirier huts	01-09-2019	SE 10-9-6	Grey	O	160	RM ditch / bush / class 6 left out	128	3MW, 4M, 5W, 6W	2	By Law 2/99 Zone A	By Law 5/03 Zone AG
	Total Net Acreage for Manure Application:					5484		4021				

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NORTH LE FLOCHE**
SAMPLE ID
FIELD NAME
COUNTY **6W**
TWP **9** RANGE
SECTION **11** QTR **NE** ACRES **160**
PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
REIDBOW DAIRY

SUBMITTED BY: **MC1689**
BUD MCKNIGHT SEED LTD
PO BOX 309
CARMAN, MB **R0G 0J0**

REF # **18950941** BOX # **5724**
LAB # **NW54024**

Date Sampled **08/29/2019** Date Received **09/01/2019** Date Reported **9/4/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 17 lb/ac 6-24" 6 lb/ac 0-24" 23 lb/ac Nitrate		*****			
Olsen Phosphorus	4 ppm	******			
Potassium	53 ppm	********			
0-24" Chloride	48 lb/ac	**********	**********	**********	**
0-6" 28 lb/ac 6-24" 102 lb/ac Sulfur		**********	**********	*****	
Boron	1.2 ppm	**********	**********	******	
Zinc	0.47 ppm	**********	***		
Iron	34.7 ppm	**********	**********	**********	**********
Manganese	3.2 ppm	**********	**********	**********	***
Copper	0.19 ppm	****			
Magnesium	661 ppm	**********	**********	**********	**********
Calcium	4626 ppm	**********	**********	**********	**********
Sodium	53 ppm	********	**		
Org.Matter	3.9 %	**********	**********	***	
Carbonate(CCE)	6.0 %	**********	**********	**********	*
0-6" 0.27 mmho/cm 6-24" 0.21 mmho/cm Sol. Salts		******			
		*****			

1st Crop Choice		
Corn-Silage		
YIELD GOAL		
18 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	164	
P_2O_5	127	Broadcast
K_2O	151	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	4	Broadcast
Fe	0	
Mn	0	
Cu	2	Broadcast
Mg	0	
Lime		

2nd Crop Choice		
Corn-Silage		
YIELD GOAL		
20 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	185	
P_2O_5	142	Broadcast
K_2O	168	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	4	Broadcast
Fe	0	
Mn	0	
Cu	2	Broadcast
Mg	0	
Lime		

3rd Crop Choice		
Corn-Silage		
YIELD GOAL		
25 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	237	
P_2O_5	177	Broadcast
K_2O	210	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	6	Broadcast
Fe	0	
Mn	0	
Cu	2	Broadcast
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.2 6-24" 8.5		29.0 meq	(65-75) 79.7	(15-20) 19.0	(1-7) 0.5	(0-5) 0.8	(0-5) 0.0

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 65 K2O = 149 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

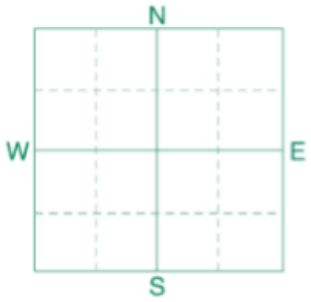
Crop 2: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 72 K2O = 166 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Crop 3: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 90 K2O = 208 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **ACROSS POIRIER 90**
SAMPLE ID
FIELD NAME
COUNTY **6W**
TWP **9** RANGE
SECTION **10** QTR **SE** ACRES **160**
PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
REIDBOW DAIRY

SUBMITTED BY: **MC1689**
BUD MCKNIGHT SEED LTD
PO BOX 309
CARMAN, MB **R0G 0J0**

REF # **18950942** BOX # **5724**
LAB # **NW54025**

Date Sampled **08/29/2019** Date Received **09/01/2019** Date Reported **9/4/2019**

Nutrient In The Soil		Interpretation (VLow / Low / Med / High)
Nitrate 0-6"	31 lb/ac	
Nitrate 6-24"	27 lb/ac	
Nitrate 0-24"	58 lb/ac	
Phosphorus Olsen	2 ppm	
Potassium	54 ppm	
Chloride 0-24"	40 lb/ac	
Sulfur 0-6"	48 lb/ac	
Sulfur 6-24"	48 lb/ac	
Boron	1.0 ppm	
Zinc	0.40 ppm	
Iron	31.2 ppm	
Manganese	3.1 ppm	
Copper	0.31 ppm	
Magnesium	656 ppm	
Calcium	5062 ppm	
Sodium	49 ppm	
Org.Matter	3.2 %	
Carbonate(CCE)	8.6 %	
Sol. Salts 0-6"	0.3 mmho/cm	
Sol. Salts 6-24"	0.2 mmho/cm	

1st Crop Choice		
Corn-Silage		
YIELD GOAL		
18 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	129	
P_2O_5	138	Broadcast
K_2O	150	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	4	Broadcast
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

2nd Crop Choice		
Corn-Silage		
YIELD GOAL		
20 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	150	
P_2O_5	153	Broadcast
K_2O	167	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	4	Broadcast
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

3rd Crop Choice		
Corn-Silage		
YIELD GOAL		
25 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	202	
P_2O_5	191	Broadcast
K_2O	209	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	6	Broadcast
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.3 6-24" 8.5		31.1 meq	(65-75) 81.3	(15-20) 17.6	(1-7) 0.4	(0-5) 0.7	(0-5) 0.0

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 65 K2O = 149 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Crop 2: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 72 K2O = 166 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

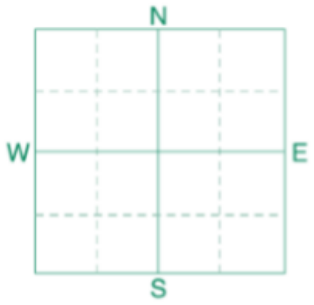
Crop 3: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 90 K2O = 208 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **3/4 HUTTS SW**
SAMPLE ID
FIELD NAME
COUNTY **6W**
TWP **9** RANGE
SECTION **12** QTR **SW** ACRES **160**
PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
REIDBOW DAIRY

SUBMITTED BY: **MC1689**
BUD MCKNIGHT SEED LTD
PO BOX 309
CARMAN, MB **R0G 0J0**

REF # **18950940** BOX # **5724**
LAB # **NW54029**

Date Sampled **08/29/2019** Date Received **09/01/2019** Date Reported **9/4/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate 0-6"	16 lb/ac	*****			
Nitrate 6-20"	7 lb/ac				
Nitrate 0-20"	23 lb/ac				
Phosphorus Olsen	12 ppm	******	******	******	
Potassium	62 ppm	*******	***		
Chloride 0-6"	25 lb/ac	*******	****		
Chloride 6-20"	14 lb/ac				
Sulfur 0-6"	48 lb/ac	******	******	******	******
Sulfur 6-20"	37 lb/ac	******	******	******	***
Boron	0.9 ppm	******	******	**	
Zinc	0.49 ppm	******	****		
Iron	55.5 ppm	******	******	******	******
Manganese	3.4 ppm	******	******	******	***
Copper	0.28 ppm	******			
Magnesium	464 ppm	******	******	******	******
Calcium	4466 ppm	******	******	******	******
Sodium	34 ppm	*****			
Org.Matter	3.0 %	******	******		
Carbonate(CCE)	5.4 %	******	******	******	
Sol. Salts 0-6"	0.22 mmho/cm	*****			
Sol. Salts 6-20"	0.12 mmho/cm	***			

1st Crop Choice		
Corn-Silage		
YIELD GOAL		
18 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	164	
P_2O_5	87	Broadcast
K_2O	149	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	4	Broadcast
Fe	0	
Mn	0	
Cu	2	Broadcast
Mg	0	
Lime		

2nd Crop Choice		
Corn-Silage		
YIELD GOAL		
20 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	185	
P_2O_5	97	Broadcast
K_2O	166	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	4	Broadcast
Fe	0	
Mn	0	
Cu	2	Broadcast
Mg	0	
Lime		

3rd Crop Choice		
Corn-Silage		
YIELD GOAL		
25 Tons		
SUGGESTED GUIDELINES		
Broadcast/Maint.		
LB/ACRE		APPLICATION
N	237	
P_2O_5	121	Broadcast
K_2O	208	Broadcast
Cl		Not Available
S	0	
B	0	
Zn	6	Broadcast
Fe	0	
Mn	0	
Cu	2	Broadcast
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 7.9 6-24" 8.4		26.5 meq	(65-75) 84.3	(15-20) 14.6	(1-7) 0.6	(0-5) 0.6	(0-5) 0.0

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 65 K2O = 149 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Crop 2: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 72 K2O = 166 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

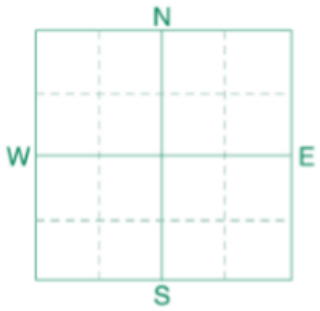
Crop 3: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 90 K2O = 208 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **3/4 HUTTS NW**
SAMPLE ID
FIELD NAME
COUNTY **6W**
TWP **9** RANGE
SECTION **12** QTR **NW** ACRES **160**
PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
REIDBOW DAIRY

SUBMITTED BY: **MC1689**
BUD MCKNIGHT SEED LTD
PO BOX 309
CARMAN, MB **R0G 0J0**

REF # **18950939** BOX # **5768**
LAB # **NW54028**

Date Sampled **08/29/2019** Date Received **09/01/2019** Date Reported **9/4/2019**

Nutrient In The Soil		Interpretation (VLow / Low / Med / High)
0-6" / 6-24" Nitrate	30 lb/ac / 39 lb/ac	VLow, Low
0-24" Nitrate	69 lb/ac	
Olsen Phosphorus	3 ppm	VLow
Potassium	45 ppm	VLow, Low
0-24" Chloride	56 lb/ac	VLow, Low, Med, High
0-6" / 6-24" Sulfur	32 lb/ac / 108 lb/ac	VLow, Low, Med / VLow, Low, Med, High
Boron	0.7 ppm	VLow, Low
Zinc	0.33 ppm	VLow
Iron	37.6 ppm	VLow, Low, Med, High
Manganese	2.3 ppm	VLow, Low, Med
Copper	0.21 ppm	VLow
Magnesium	496 ppm	VLow, Low, Med, High
Calcium	4759 ppm	VLow, Low, Med, High
Sodium	60 ppm	VLow, Low
Org.Matter	2.2 %	VLow, Low
Carbonate(CCE)	3.7 %	VLow, Low, Med
0-6" / 6-24" Sol. Salts	0.26 mmho/cm / 0.18 mmho/cm	VLow / VLow

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Corn-Silage			Corn-Silage			Corn-Silage		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
18 Tons			20 Tons			25 Tons		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Broadcast/Maint.			Broadcast/Maint.			Broadcast/Maint.		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	118		N	139		N	191	
P_2O_5	132	Broadcast	P_2O_5	147	Broadcast	P_2O_5	184	Broadcast
K_2O	157	Broadcast	K_2O	174	Broadcast	K_2O	218	Broadcast
Cl		Not Available	Cl		Not Available	Cl		Not Available
S	0		S	0		S	0	
B	0		B	0		B	0	
Zn	4	Broadcast	Zn	4	Broadcast	Zn	6	Broadcast
Fe	0		Fe	0		Fe	0	
Mn	0		Mn	0		Mn	0	
Cu	2	Broadcast	Cu	2	Broadcast	Cu	2	Broadcast
Mg	0		Mg	0		Mg	0	
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.2 6-24" 8.4		28.3 meq	(65-75) 84.1	(15-20) 14.6	(1-7) 0.4	(0-5) 0.9	(0-5) 0.0

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 65 K2O = 149 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

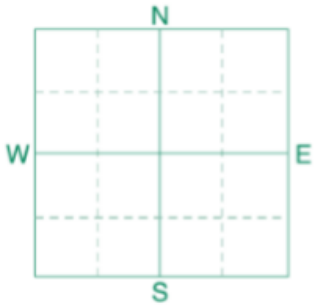
Crop 2: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 72 K2O = 166 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Crop 3: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 90 K2O = 208 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **3/4 HUTTS NE**
SAMPLE ID
FIELD NAME
COUNTY **6W**
TWP **9** RANGE
SECTION **12** QTR **NE** ACRES **160**
PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
REIDBOW DAIRY

SUBMITTED BY: **MC1689**
BUD MCKNIGHT SEED LTD
PO BOX 309
CARMAN, MB **R0G 0J0**

REF # **18950938** BOX # **5724**
LAB # **NW54027**

Date Sampled **08/29/2019** Date Received **09/01/2019** Date Reported **9/4/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 28 lb/ac 6-24" 12 lb/ac 0-24" 40 lb/ac Nitrate		********	**		
Olsen Phosphorus	5 ppm	********	**		
Potassium	48 ppm	*******	*		
0-24" Chloride	24 lb/ac	*********	***		
0-6" 26 lb/ac 6-24" 24 lb/ac Sulfur		**********	**********	*****	
Boron	1.2 ppm	**********	**********	*****	
Zinc	0.41 ppm	********	**		
Iron	49.3 ppm	**********	**********	**********	**********
Manganese	2.6 ppm	**********	**********	*********	*
Copper	0.21 ppm	****			
Magnesium	673 ppm	**********	**********	**********	**********
Calcium	4612 ppm	**********	**********	**********	**********
Sodium	44 ppm	*******			
Org.Matter	3.4 %	**********	*********		
Carbonate(CCE)	5.5 %	**********	**********	*******	
0-6" 0.24 mmho/cm 6-24" 0.11 mmho/cm Sol. Salts		****** **			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Corn-Silage			Corn-Silage			Corn-Silage		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
18 Tons			20 Tons			25 Tons		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Broadcast/Maint.			Broadcast/Maint.			Broadcast/Maint.		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	147		N	168		N	220	
P_2O_5	122	Broadcast	P_2O_5	136	Broadcast	P_2O_5	170	Broadcast
K_2O	154	Broadcast	K_2O	172	Broadcast	K_2O	215	Broadcast
Cl		Not Available	Cl		Not Available	Cl		Not Available
S	10	Broadcast (Trial)	S	10	Broadcast (Trial)	S	10	Broadcast (Trial)
B	0		B	0		B	0	
Zn	4	Broadcast	Zn	4	Broadcast	Zn	6	Broadcast
Fe	0		Fe	0		Fe	0	
Mn	0		Mn	0		Mn	0	
Cu	2	Broadcast	Cu	2	Broadcast	Cu	2	Broadcast
Mg	0		Mg	0		Mg	0	
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.1 6-24" 8.4		29.0 meq	(65-75) 79.6	(15-20) 19.4	(1-7) 0.4	(0-5) 0.7	(0-5) 0.0

General Comments: Texture is not estimated on high pH soils.

Crop 1: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 65 K2O = 149 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

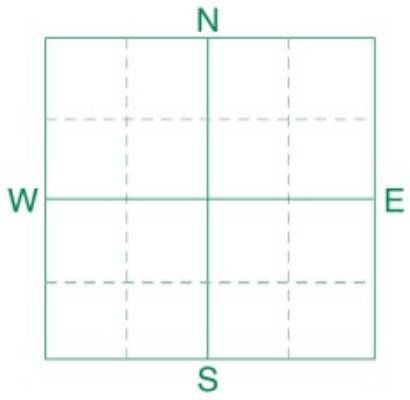
Crop 2: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 72 K2O = 166 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Crop 3: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 90 K2O = 208 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

SOIL TEST REPORT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID **NW & NE 4-9-5**
SAMPLE ID
FIELD NAME **Jack Neufeld**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598210** BOX # **3394**
LAB # **NW18530**

Date Sampled | Date Received **04/25/2019** | Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	5 lb/ac	**			
0-24''	8 lb/ac				
Nitrate					
Olsen Phosphorus	22 ppm	**********	**********	**********	**********
Potassium	140 ppm	**********	**********	**********	***
0-24'' Chloride	24 lb/ac	*********	***		
0-6"	28 lb/ac	**********	**********	*****	
0-24" Sulfur	48 lb/ac	**********	**********	**********	**********
Boron	0.9 ppm	**********	********		
Zinc	0.86 ppm	**********	**********	****	
Iron	59.6 ppm	**********	**********	**********	**********
Manganese	5.2 ppm	**********	**********	**********	**********
Copper	0.15 ppm	***			
Magnesium	393 ppm	**********	**********	**********	**********
Calcium	2949 ppm	**********	**********	**********	**********
Sodium	23 ppm	***			
Org.Matter	2.8 %	**********	******		
Carbonate(CCE)	1.5 %	********	**		
0-6"	0.27 mmho/cm	******			
0-24" Sol. Salts	0.16 mmho/cm	****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.8**		**18.5 meq**	(65-75) **79.8**	(15-20) **17.7**	(1-7) **1.9**	(0-5) **0.5**	(0-5) **0.0**
6-24" **8.2**							

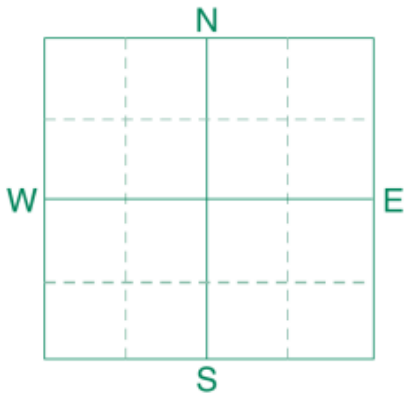
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NE 18-9-5**
SAMPLE ID
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2620258** BOX # **4325**
LAB # **NW32036**

Date Sampled | Date Received **05/28/2019** | Date Reported **5/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	0-6" **74 lb/ac** 6-24" **60 lb/ac** 0-24'' **134 lb/ac**	******	******	******	******
Phosphorus	**Olsen 47 ppm**	******	******	******	******
Potassium	**160 ppm**	******	******	******	******
Chloride	0-24'' **156 lb/ac**	******	******	******	******
Sulfur	0-6" **30 lb/ac** 6-24" **78 lb/ac**	******	******	******	******
Boron	**0.8 ppm**	******	******		
Zinc	**2.25 ppm**	******	******	******	******
Iron	**17.3 ppm**	******	******	******	******
Manganese	**2.4 ppm**	******	******	******	*
Copper	**0.78 ppm**	******	******	******	
Magnesium	**546 ppm**	******	******	******	******
Calcium	**3277 ppm**	******	******	******	******
Sodium	**70 ppm**	******	****		
Org.Matter	**1.8 %**	******			
Carbonate(CCE)	**1.6 %**	******	**		
Sol. Salts	0-6" **0.35 mmho/cm** 6-24" **0.24 mmho/cm**	******	**		

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

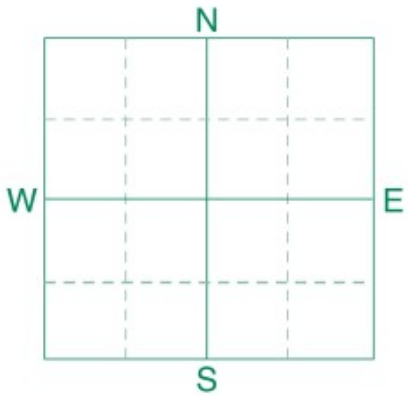
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.3**		**21.6 meq**	(65-75) **75.7**	(15-20) **21.0**	(1-7) **1.9**	(0-5) **1.4**	(0-5) **0.0**

General Comments: Texture is not estimated on high pH soils.

SOIL TEST REPORT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID **NE 13-9-6**
SAMPLE ID
FIELD NAME **Evan pasture**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598229** BOX # **3457**
LAB # **NW19702**

Date Sampled | Date Received **04/27/2019** | Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	2 lb/ac	*			
0-24" Nitrate	4 lb/ac				
Olsen Phosphorus	16 ppm	**********	**********	**********	**********
Potassium	69 ppm	**********	********		
0-24" Chloride	8 lb/ac	***			
0-6" Sulfur	24 lb/ac	**********	**********	********	
0-24" Sulfur	80 lb/ac	**********	**********	**********	**********
Boron	0.6 ppm	*********	********		
Zinc	0.92 ppm	**********	**********	**********	
Iron	68.3 ppm	**********	**********	**********	**********
Manganese	3.1 ppm	**********	**********	**********	**********
Copper	0.16 ppm	***			
Magnesium	334 ppm	**********	**********	**********	**********
Calcium	2203 ppm	**********	**********	**********	**********
Sodium	35 ppm	**********			
Org.Matter	2.0 %	**********	**********		
Carbonate(CCE)	1.1 %	**********			
0-6" Sol. Salts	0.22 mmho/cm	**********			
0-24" Sol. Salts	0.17 mmho/cm	**********			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.7** 6-24" **8.2**		**14.1 meq**	(65-75) **78.0**	(15-20) **19.7**	(1-7) **1.3**	(0-5) **1.1**	(0-5) **0.0**

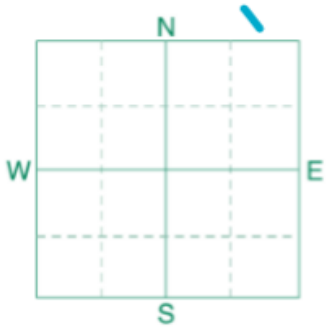
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NE 33-9-5**
SAMPLE ID
FIELD NAME **Boyachek**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598225** BOX # **3394**
LAB # **NW18539**

Date Sampled Date Received **04/25/2019** Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation
		VLow Low Med High
0-6"	118 lb/ac	
0-24"	244 lb/ac	
Nitrate		
Olsen	19 ppm	
Phosphorus		
Potassium	323 ppm	
0-24"	160 lb/ac	
Chloride		
0-6"	42 lb/ac	
0-24"	80 lb/ac	
Sulfur		
Boron	1.2 ppm	
Zinc	1.24 ppm	
Iron	32.7 ppm	
Manganese	4.6 ppm	
Copper	1.7 ppm	
Magnesium	1461 ppm	
Calcium	6442 ppm	
Sodium	48 ppm	
Org.Matter	6.7 %	
Carbonate(CCE)	3.9 %	
0-6"	1.05 mmho/cm	
0-24"	0.81 mmho/cm	
Sol. Salts		

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.2** 6-24" **8.1**		**45.6 meq**	(65-75) **70.6**	(15-20) **26.7**	(1-7) **1.8**	(0-5) **0.5**	(0-5) **0.4**

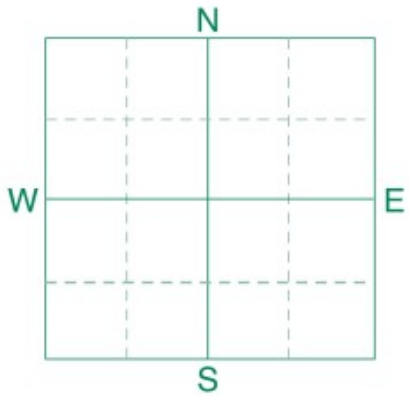
General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NW 9-9-5 East 80**
SAMPLE ID
FIELD NAME **Jack Neufeld**
COUNTY
TWP RANGE
SECTION QTR ACRES **80**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598213** BOX # **3394**
LAB # **NW18533**

Date Sampled Date Received **04/25/2019** Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	7 lb/ac				
0-24'' Nitrate	28 lb/ac	******			
Olsen Phosphorus	12 ppm	******	******	******	
Potassium	39 ppm	******			
0-24'' Chloride	68 lb/ac	******	******	******	******
0-6"	18 lb/ac	******	*******		
0-24" Sulfur	88 lb/ac	******	******	******	******
Boron	0.3 ppm	****			
Zinc	0.77 ppm	******	*******	**	
Iron	56.5 ppm	******	******	******	******
Manganese	3.2 ppm	******	******	*******	**
Copper	0.28 ppm	******			
Magnesium	154 ppm	******	*******	**	
Calcium	1082 ppm	******	*******		
Sodium	20 ppm	***			
Org.Matter	1.7 %	******			
Carbonate(CCE)	1.0 %	******			
0-6"	0.14 mmho/cm	***			
0-24" Sol. Salts	0.14 mmho/cm	***			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **6.9** 6-24" **7.8**		**7.0 meq**	(65-75) **76.8**	(15-20) **18.2**	(1-7) **1.4**	(0-5) **1.2**	(0-5) **2.4**

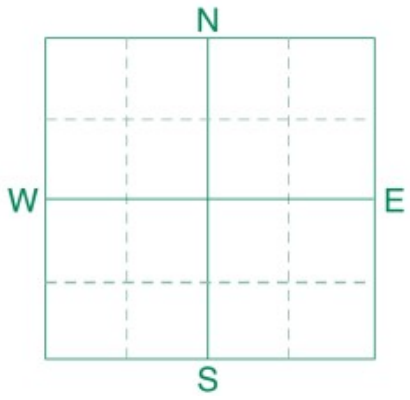
General Comments: Sand (CEC range = 0 to 10) (Coarse)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **W 8-10-5**
SAMPLE ID
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **320**
PREV. CROP **Alfalfa**



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2372591** BOX # **3764**
LAB # **NW76250**

Date Sampled
Date Received **09/15/2018**
Date Reported **9/20/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	0-6" **10 lb/ac** 6-24" **9 lb/ac** 0-24'' **19 lb/ac**	****			
Phosphorus	**Olsen 15 ppm**	**********	**********	**********	**********
Potassium	**375 ppm**	**********	**********	**********	**********
Chloride	0-24'' **20 lb/ac**	********			
Sulfur	0-6" **36 lb/ac** 6-24" **54 lb/ac**	**********	**********	**********	**********
Boron	**0.8 ppm**	**********	**********		
Zinc	**1.14 ppm**	**********	**********	**********	*
Iron	**41.8 ppm**	**********	**********	**********	**********
Manganese	**2.2 ppm**	**********	**********	**********	
Copper	**1.81 ppm**	**********	**********	**********	*
Magnesium	**1332 ppm**	**********	**********	**********	**********
Calcium	**5647 ppm**	**********	**********	**********	**********
Sodium	**41 ppm**	**********			
Org.Matter	**5.0 %**	**********	**********	**********	**
Carbonate(CCE)	**2.2 %**	**********	**********		
Sol. Salts	0-6" **0.67 mmho/cm** 6-24" **0.52 mmho/cm**	**********	**********	**********	****

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.3** 6-24" **8.0**		**40.5 meq**	(65-75) **69.8**	(15-20) **27.4**	(1-7) **2.4**	(0-5) **0.4**	(0-5)

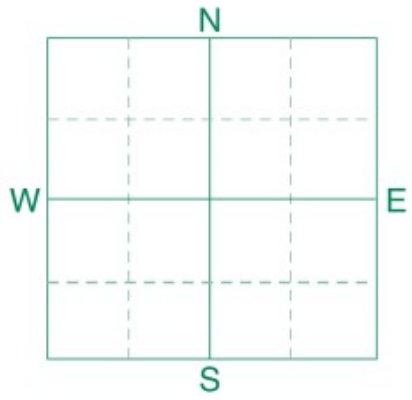
General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SE & SW 19-8-5 S tracks**
SAMPLE ID
FIELD NAME **Hugo's**
COUNTY
TWP RANGE
SECTION QTR ACRES **126**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598242** BOX # **3457**
LAB # **NW19707**

Date Sampled Date Received **04/27/2019** Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	7 lb/ac	**			
0-24"	12 lb/ac				
Nitrate					
Olsen	35 ppm	**********	**********	**********	**********
Phosphorus					
Potassium	180 ppm	**********	**********	**********	**********
0-24"	24 lb/ac	*********	***		
Chloride					
0-6"	20 lb/ac	**********	*********	**	
0-24"	64 lb/ac	**********	**********	**********	**********
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper	0.25 ppm	*****			
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6"	0.25 mmho/cm	******			
0-24"	0.15 mmho/cm	***			
Sol. Salts					

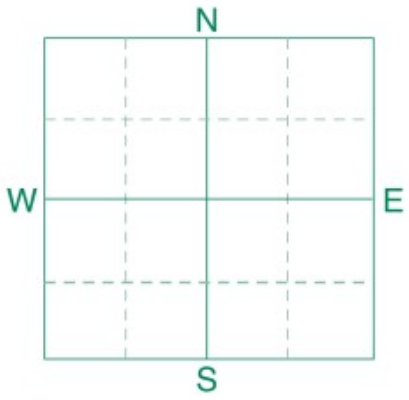
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.2** 6-24" **7.7**							

AGVISE LABORATORIES
Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Hugos'**
SAMPLE ID
FIELD NAME **NW 19-8-5**
COUNTY
TWP RANGE
SECTION QTR ACRES **133**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2591856** BOX # **3162**
LAB # **NW16196**

Date Sampled
Date Received **04/23/2019**
Date Reported **4/24/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	17 lb/ac	**********	*****		
0-24" Nitrate	52 lb/ac				
Olsen Phosphorus	37 ppm	**********	**********	**********	**********
Potassium	181 ppm	**********	**********	**********	**********
0-24" Chloride	36 lb/ac	**********	**********	*****	
0-6" Sulfur	22 lb/ac	**********	**********	*****	
0-24" Sulfur	72 lb/ac	**********	**********	**********	**********
Boron	0.6 ppm	**********	*****		
Zinc	1.54 ppm	**********	**********	**********	*****
Iron	62.2 ppm	**********	**********	**********	**********
Manganese	1.8 ppm	**********	**********	**********	
Copper	0.36 ppm	**********	**		
Magnesium	233 ppm	**********	**********	**********	
Calcium	1856 ppm	**********	**********	**********	**********
Sodium	17 ppm	**			
Org.Matter	1.9 %	**********	**		
Carbonate(CCE)	0.5 %	***			
0-6" Sol. Salts	0.17 mmho/cm	****			
0-24" Sol. Salts	0.16 mmho/cm	****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.9** 6-24" **8.2**		**11.8 meq**	(65-75) **78.9**	(15-20) **16.5**	(1-7) **3.9**	(0-5) **0.6**	(0-5) **0.0**

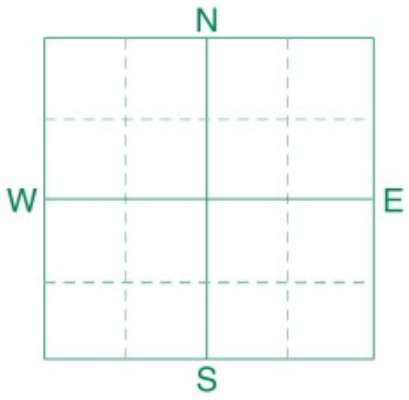
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Hugo's**
SAMPLE ID
FIELD NAME **SE & SW 19-8-5 N of tracks**
COUNTY
TWP RANGE
SECTION QTR ACRES **150**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2591857** BOX # **3162**
LAB # **NW16197**

Date Sampled | Date Received **04/23/2019** | Date Reported **4/24/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	17 lb/ac	*******			
0-24" Nitrate	36 lb/ac				
Olsen Phosphorus	22 ppm	**********	**********	**********	**********
Potassium	98 ppm	**********	**********	***	
0-24" Chloride	60 lb/ac	**********	**********	**********	**********
0-6" Sulfur	40 lb/ac	**********	**********	**********	****
0-24" Sulfur	80 lb/ac	**********	**********	**********	**********
Boron	1.5 ppm	**********	**********	**********	****
Zinc	1.14 ppm	**********	**********	********	*
Iron	39.2 ppm	**********	**********	**********	**********
Manganese	3.2 ppm	**********	**********	********	**
Copper	0.31 ppm	******			
Magnesium	702 ppm	**********	**********	**********	**********
Calcium	3312 ppm	**********	**********	**********	**********
Sodium	35 ppm	*****			
Org.Matter	3.3 %	**********	********		
Carbonate(CCE)	2.7 %	**********	**********		
0-6" Sol. Salts	0.24 mmho/cm	******			
0-24" Sol. Salts	0.17 mmho/cm	****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

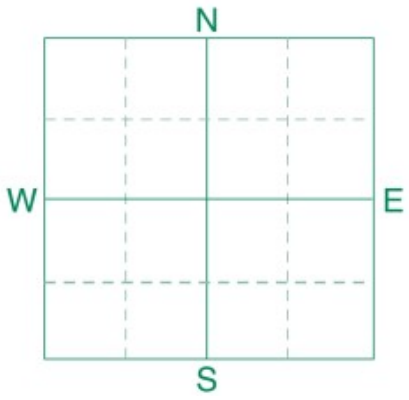
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.4** 6-24" **8.5**		**22.8 meq**	(65-75) **72.6**	(15-20) **25.6**	(1-7) **1.1**	(0-5) **0.7**	(0-5) **0.0**

General Comments: Texture is not estimated on high pH soils.

SOIL TEST REPORT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID **Pat Houde**
SAMPLE ID
FIELD NAME **NE 6-9-5**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2591860** BOX # **3162**
LAB # **NW16198**

Date Sampled | Date Received **04/23/2019** | Date Reported **4/24/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 0-24" Nitrate	18 lb/ac 32 lb/ac	******			
Olsen Phosphorus	20 ppm	**********	**********	**********	**********
Potassium	98 ppm	**********	**********	***	
0-24" Chloride	36 lb/ac	**********	**********	***	
0-6" 0-24" Sulfur	22 lb/ac 128 lb/ac	**********	**********	***	
		**********	**********	**********	**********
Boron	0.7 ppm	**********	*****		
Zinc	1.03 ppm	**********	**********	**********	
Iron	42.9 ppm	**********	**********	**********	**********
Manganese	3.1 ppm	**********	**********	**********	**
Copper	0.33 ppm	*******			
Magnesium	415 ppm	**********	**********	**********	**********
Calcium	3790 ppm	**********	**********	**********	**********
Sodium	27 ppm	****			
Org.Matter	2.6 %	**********	*****		
Carbonate(CCE)	2.7 %	**********	**********		
0-6" 0-24" Sol. Salts	0.22 mmho/cm 0.19 mmho/cm	***** *****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

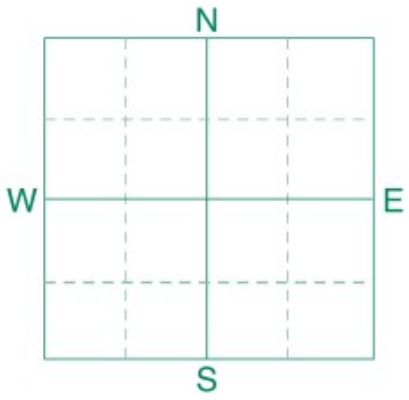
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.3** 6-24" **8.4**		**22.8 meq**	(65-75) **83.2**	(15-20) **15.2**	(1-7) **1.1**	(0-5) **0.5**	(0-5) **0.0**

General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES
Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SE 2-9-6**
SAMPLE ID
FIELD NAME
COUNTY **6**
TWP **9** RANGE
SECTION **2** QTR **SE** ACRES **100**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2372519** BOX # **3787**
LAB # **NW76256**

Date Sampled
Date Received **09/15/2018**
Date Reported **9/20/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	0-6" **9 lb/ac** 6-24" **12 lb/ac** 0-24'' **21 lb/ac**	****			
Phosphorus	**Olsen 8 ppm**	**********			
Potassium	**71 ppm**	**********			
Chloride	0-24'' **176 lb/ac**	**********	**********	**********	**********
Sulfur	0-6" **84 lb/ac** 6-24" **54 lb/ac**	**********	**********	**********	**********
Boron	**0.6 ppm**	*********			
Zinc	**0.72 ppm**	**********	**********	**	
Iron	**29.0 ppm**	**********	**********	**********	**********
Manganese	**2.4 ppm**	**********	**********	********	*
Copper	**0.2 ppm**	****			
Magnesium	**629 ppm**	**********	**********	**********	**********
Calcium	**4123 ppm**	**********	**********	**********	**********
Sodium	**65 ppm**	**********	**********		
Org.Matter	**3.4 %**	**********	**********	********	
Carbonate(CCE)	**5.5 %**	**********	**********	**********	
Sol. Salts	0-6" **0.37 mmho/cm** 6-24" **0.15 mmho/cm**	*********	**********		

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2** 6-24" **8.4**		**26.3 meq**	(65-75) **78.3**	(15-20) **19.9**	(1-7) **0.7**	(0-5) **1.1**	(0-5)

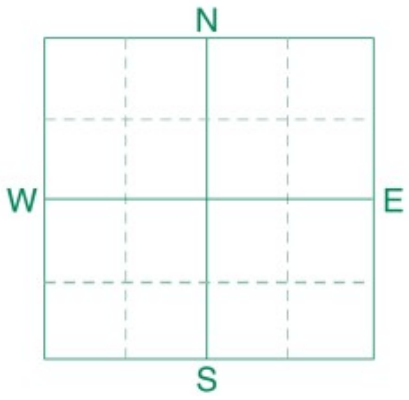
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **W 10-9-5**
SAMPLE ID
FIELD NAME
COUNTY **5**
TWP **9** RANGE
SECTION **10** QTR **W** ACRES **110**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2372426** BOX # **3787**
LAB # **NW76257**

Date Sampled
Date Received **09/15/2018**
Date Reported **9/20/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24"	102 lb/ac 75 lb/ac	**********	**********	**********	**********
0-24'' Nitrate	177 lb/ac	**********	**********	**********	**********
Olsen Phosphorus	21 ppm	**********	**********	**********	**********
Potassium	106 ppm	**********	**********	********	
0-24'' Chloride	188 lb/ac	**********	**********	**********	**********
0-6" 6-24" Sulfur	38 lb/ac 54 lb/ac	**********	**********	**********	**********
Boron	0.6 ppm	**********	**********		
Zinc	1.73 ppm	**********	**********	**********	********
Iron	16.6 ppm	**********	**********	**********	**********
Manganese	2.9 ppm	**********	**********	**********	**********
Copper	0.52 ppm	**********	**********		
Magnesium	349 ppm	**********	**********	**********	********
Calcium	3308 ppm	**********	**********	**********	**********
Sodium	43 ppm	**********			
Org.Matter	2.5 %	**********	********		
Carbonate(CCE)	0.9 %	**********			
0-6" 6-24" Sol. Salts	0.39 mmho/cm 0.22 mmho/cm	**********	**********		

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Corn-Silage								
YIELD GOAL			YIELD GOAL			YIELD GOAL		
15 Tons								
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Band								
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	10		N			N		
P_2O_5	24	Band *	P_2O_5			P_2O_5		
K_2O	48	Band *	K_2O			K_2O		
Cl		Not Available	Cl			Cl		
S	0		S			S		
B	0		B			B		
Zn	2	Band (Trial)	Zn			Zn		
Fe	0		Fe			Fe		
Mn	0		Mn			Mn		
Cu	0		Cu			Cu		
Mg	0		Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.6** 6-24" **8.4**		**19.9 meq**	(65-75) **83.1**	(15-20) **14.6**	(1-7) **1.4**	(0-5) **0.9**	(0-5)

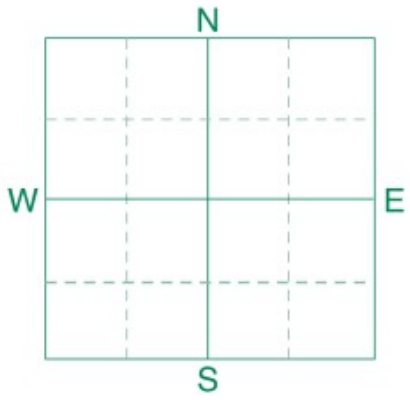
General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)

Crop 1: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 54 K2O = 125 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

SOIL TEST REPORT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID **SE 9-9-5**
SAMPLE ID
FIELD NAME **Jack Neufeld**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598217** BOX # **3480**
LAB # **NW19697**

Date Sampled | Date Received **04/27/2019** | Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	10 lb/ac	******			
0-24" Nitrate	28 lb/ac				
Olsen Phosphorus	11 ppm	**********	**********	**********	
Potassium	78 ppm	**********	**********		
0-24" Chloride	68 lb/ac	**********	**********	**********	**********
0-6" Sulfur	20 lb/ac	**********	**********	**	
0-24" Sulfur	104 lb/ac	**********	**********	**********	**********
Boron	0.7 ppm	**********	**********		
Zinc	0.46 ppm	**********	**********		
Iron	24.3 ppm	**********	**********	**********	**********
Manganese	2.8 ppm	**********	**********	**********	*
Copper	0.21 ppm	****			
Magnesium	387 ppm	**********	**********	**********	**********
Calcium	3603 ppm	**********	**********	**********	**********
Sodium	32 ppm	**********			
Org.Matter	2.3 %	**********	**********		
Carbonate(CCE)	1.8 %	**********	**********		
0-6" Sol. Salts	0.2 mmho/cm	**********			
0-24" Sol. Salts	0.19 mmho/cm	****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.3**		**21.6 meq**	(65-75) **83.5**	(15-20) **14.9**	(1-7) **0.9**	(0-5) **0.6**	(0-5) **0.0**

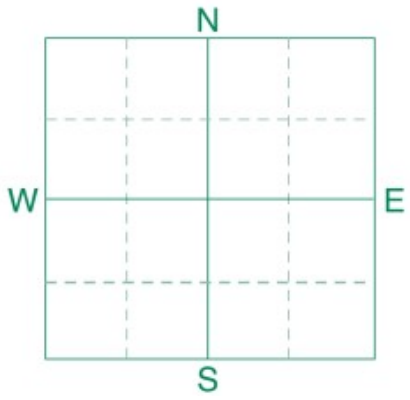
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SW 9-9-5**
SAMPLE ID
FIELD NAME **Jack Neufeld**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598216** BOX # **3412**
LAB # **NW19696**

Date Sampled | Date Received **04/27/2019** | Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	8 lb/ac	***			
0-24" Nitrate	16 lb/ac				
Phosphorus Olsen	14 ppm	**********	**********	**********	********
Potassium	68 ppm	**********	********		
0-24" Chloride	36 lb/ac	**********	**********	********	
0-6" Sulfur	20 lb/ac	**********	**********	**	
0-24" Sulfur	112 lb/ac	**********	**********	**********	**********
Boron	0.5 ppm	********	**		
Zinc	0.46 ppm	*********	***		
Iron	29.1 ppm	**********	**********	**********	**********
Manganese	2.4 ppm	**********	**********	**********	*
Copper	0.16 ppm	***			
Magnesium	317 ppm	**********	**********	**********	***
Calcium	2824 ppm	**********	**********	**********	**********
Sodium	20 ppm	***			
Org.Matter	2.0 %	********	**		
Carbonate(CCE)	1.2 %	******			
0-6" Sol. Salts	0.16 mmho/cm	****			
0-24" Sol. Salts	0.16 mmho/cm	****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.7** 6-24" **8.3**		**17.0 meq**	(65-75) **82.9**	(15-20) **15.5**	(1-7) **1.0**	(0-5) **0.5**	(0-5) **0.0**

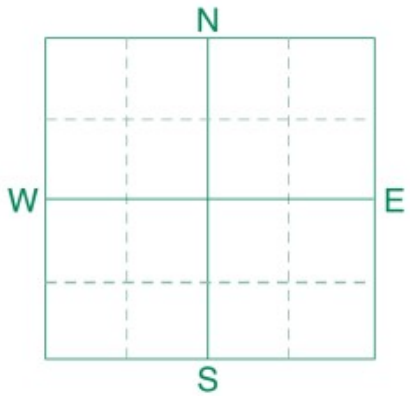
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NW 9-9-5 West80**
SAMPLE ID
FIELD NAME **Pasture Derrick**
COUNTY
TWP RANGE
SECTION QTR ACRES **80**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598212** BOX # **3394**
LAB # **NW18532**

Date Sampled | Date Received **04/25/2019** | Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	5 lb/ac	**			
0-24" Nitrate	8 lb/ac				
Olsen Phosphorus	6 ppm	**********			
Potassium	70 ppm	**********			
0-24" Chloride	36 lb/ac	**********	**********	***	
0-6" Sulfur	28 lb/ac	**********	**********	*****	
0-24" Sulfur	64 lb/ac	**********	**********	**********	**********
Boron	0.9 ppm	**********	**********	**	
Zinc	0.88 ppm	**********	**********	****	
Iron	26.3 ppm	**********	**********	**********	**********
Manganese	3.6 ppm	**********	**********	**********	***
Copper	0.27 ppm	*****			
Magnesium	550 ppm	**********	**********	**********	**********
Calcium	2922 ppm	**********	**********	**********	**********
Sodium	25 ppm	****			
Org.Matter	2.9 %	**********	**********		
Carbonate(CCE)	2.0 %	**********	**********		
0-6" Sol. Salts	0.27 mmho/cm	******			
0-24" Sol. Salts	0.19 mmho/cm	****			

General Comments: Texture is not estimated on high pH soils.

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

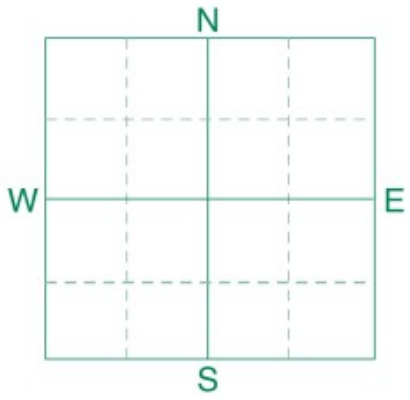
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.4**		**19.5 meq**	(65-75) **75.0**	(15-20) **23.5**	(1-7) **0.9**	(0-5) **0.6**	(0-5) **0.0**

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NE 9-9-5**
SAMPLE ID
FIELD NAME **NE 9-9-5**
COUNTY
TWP RANGE
SECTION QTR ACRES **0**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2372535** BOX # **3764**
LAB # **NW76249**

Date Sampled
Date Received **09/15/2018**
Date Reported **9/20/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	0-6" **97 lb/ac** 6-24" **105 lb/ac** 0-24'' **202 lb/ac**	**********	**********	**********	**********
Phosphorus	**Olsen 20 ppm**	**********	**********	**********	**********
Potassium	**134 ppm**	**********	**********	**********	**
Chloride	0-24'' **372 lb/ac**	**********	**********	**********	**********
Sulfur	0-6" **90 lb/ac** 6-24" **120 lb/ac**	**********	**********	**********	**********
Boron	**0.9 ppm**	**********	**********	**********	
Zinc	**0.69 ppm**	**********	**********	**********	
Iron	**21.8 ppm**	**********	**********	**********	**********
Manganese	**3.5 ppm**	**********	**********	**********	***
Copper	**0.27 ppm**	*****			
Magnesium	**677 ppm**	**********	**********	**********	**********
Calcium	**3634 ppm**	**********	**********	**********	**********
Sodium	**84 ppm**	**********	**********		
Org.Matter	**1.9 %**	*******			
Carbonate(CCE)	**3.0 %**	**********	**********	**********	
Sol. Salts	0-6" **0.74 mmho/cm** 6-24" **0.37 mmho/cm**	**********	**********	**********	**********

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

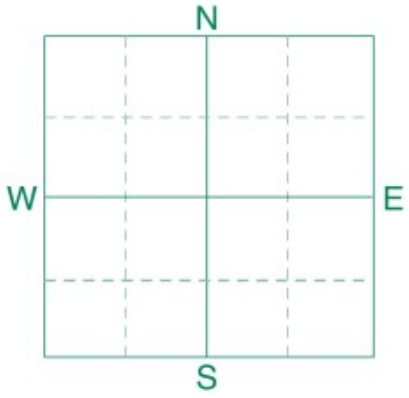
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.3**		**24.5 meq**	(65-75) **74.1**	(15-20) **23.0**	(1-7) **1.4**	(0-5) **1.5**	(0-5)

General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES
Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **N half 8-9-5**
SAMPLE ID
FIELD NAME
COUNTY
TWP RANGE
SECTION QTR ACRES **80**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2372565** BOX # **3787**
LAB # **NW76255**

Date Sampled | Date Received **09/15/2018** | Date Reported **9/20/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate	12 lb/ac 9 lb/ac	****			
0-24'' Nitrate	21 lb/ac				
Olsen Phosphorus	62 ppm	**********	**********	**********	**********
Potassium	188 ppm	**********	**********	**********	**********
0-24'' Chloride	380 lb/ac	**********	**********	**********	**********
0-6" Sulfur	60 lb/ac	**********	**********	**********	**********
6-24" Sulfur	144 lb/ac	**********	**********	**********	**********
Boron	0.5 ppm	*******			
Zinc	3.00 ppm	**********	**********	**********	**********
Iron	41.7 ppm	**********	**********	**********	**********
Manganese	2.8 ppm	**********	**********	*********	**
Copper	1.05 ppm	**********	**********	******	
Magnesium	358 ppm	**********	**********	**********	****
Calcium	3139 ppm	**********	**********	**********	**********
Sodium	45 ppm	*******			
Org.Matter	1.9 %	*******			
Carbonate(CCE)	2.2 %	**********	*****		
0-6" Sol. Salts	0.24 mmho/cm	******			
6-24" Sol. Salts	0.26 mmho/cm	******			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Wheat-Spring			Soybeans					
YIELD GOAL			YIELD GOAL			YIELD GOAL		
60 BU			40 BU					
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Broadcast			Broadcast					
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	**141**		N	***		N		
P_2O_5	**15**	**Band (Starter)***	P_2O_5	**0**		P_2O_5		
K_2O	**10**	**Band (Starter)***	K_2O	**0**		K_2O		
Cl	**0**		Cl	**0**		Cl		
S	**0**		S	**0**		S		
B	**0**		B	**0**		B		
Zn	**0**		Zn	**0**		Zn		
Fe	**0**		Fe	**0**		Fe		
Mn	**0**		Mn	**0**		Mn		
Cu	**0**		Cu	**0**		Cu		
Mg	**0**		Mg	**0**		Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.7** 6-24" **8.0**		**19.4 meq**	(65-75) **81.1**	(15-20) **15.4**	(1-7) **2.5**	(0-5) **1.0**	(0-5)

General Comments: Texture is not estimated on high pH soils.

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

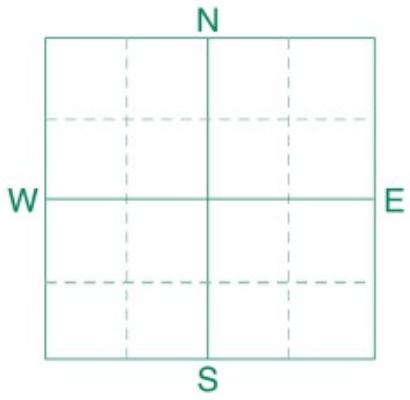
Crop 2: Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SW 11-9-6**
SAMPLE ID
FIELD NAME **Poirier 90**
COUNTY
TWP RANGE
SECTION QTR ACRES **130**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598226** BOX # **3480**
LAB # **NW19700**

Date Sampled
Date Received **04/27/2019**
Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	9 lb/ac	**********	****		
0-24" Nitrate	48 lb/ac				
Olsen Phosphorus	13 ppm	**********	**********	**********	**
Potassium	80 ppm	**********	**********		
0-24" Chloride	108 lb/ac	**********	**********	**********	**********
0-6" Sulfur	22 lb/ac	**********	**********	***	
0-24" Sulfur	64 lb/ac	**********	**********	**********	**********
Boron	0.7 ppm	**********	****		
Zinc	0.78 ppm	**********	**********	***	
Iron	50.3 ppm	**********	**********	**********	**********
Manganese	3.6 ppm	**********	**********	**********	***
Copper	0.39 ppm	*********	***		
Magnesium	294 ppm	**********	**********	**********	**
Calcium	4089 ppm	**********	**********	**********	**********
Sodium	20 ppm	***			
Org.Matter	2.6 %	**********	****		
Carbonate(CCE)	3.2 %	**********	**********	**	
0-6" Sol. Salts	0.24 mmho/cm	******			
0-24" Sol. Salts	0.22 mmho/cm	*****			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.6** 6-24" **8.2**		**23.2 meq**	(65-75) **88.2**	(15-20) **10.6**	(1-7) **0.9**	(0-5) **0.4**	(0-5) **0.0**

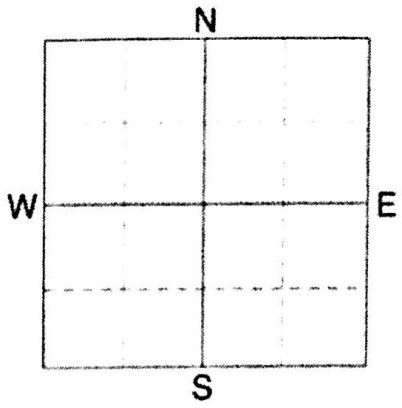
General Comments: Fine Loams (CEC range 21 to 30) (Medium)

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SE 17-9-5**
SAMPLE ID
FIELD NAME **H Froese**
COUNTY
TWP RANGE 105
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2597818** BOX # **3302**
LAB # **NW18444**

Date Sampled | Date Received **04/25/2019** | Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation
Nitrate 0-6"	3 lb/ac	*
Nitrate 0-24"	4 lb/ac	
Phosphorus Olsen	32 ppm	**********
Potassium	135 ppm	**********
Chloride 0-24"	56 lb/ac	**********
Sulfur 0-6"	26 lb/ac	**********
Sulfur 0-24"	80 lb/ac	**********
Boron	0.9 ppm	**********
Zinc	2.42 ppm	**********
Iron	12.8 ppm	**********
Manganese	2.6 ppm	**********
Copper	1.06 ppm	**********
Magnesium	495 ppm	**********
Calcium	3312 ppm	**********
Sodium	28 ppm	****
Org.Matter	2.3 %	**********
Carbonate(CCE)	2.4 %	**********
Sol. Salts 0-6"	0.2 mmho/cm	*****
Sol. Salts 0-24"	0.17 mmho/cm	****

1st Crop Choice		
YIELD GOAL		
SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

2nd Crop Choice		
YIELD GOAL		
SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

3rd Crop Choice		
YIELD GOAL		
SUGGESTED GUIDELINES		
LB/ACRE		APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.6**		**21.2 meq**	(65-75) **78.3**	(15-20) **19.5**	(1-7) **1.6**	(0-5) **0.6**	(0-5) **0.0**

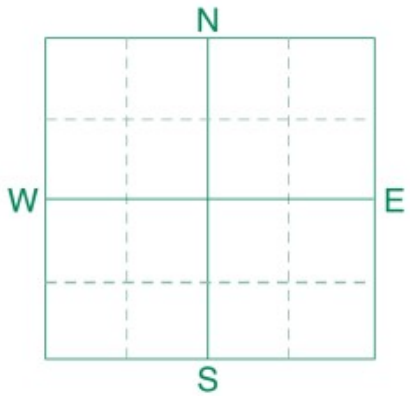
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SW 17-9-5**
SAMPLE ID
FIELD NAME **Pasture Arlan**
COUNTY
TWP RANGE
SECTION QTR ACRES **110**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598220** BOX # **3412**
LAB # **NW19698**

Date Sampled | Date Received **04/27/2019** | Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	8 lb/ac	*			
0-24" Nitrate	4 lb/ac				
Olsen Phosphorus	69 ppm	******	******	******	******
Potassium	373 ppm	******	******	******	******
0-24" Chloride	180 lb/ac	******	******	******	******
0-6" Sulfur	120 +lb/ac	******	******	******	******
0-24" Sulfur	176 lb/ac	******	******	******	******
Boron	0.9 ppm	******	*******		
Zinc	2.59 ppm	******	******	******	******
Iron	45.9 ppm	******	******	******	******
Manganese	3.1 ppm	******	******	*******	**
Copper	1.35 ppm	******	******	*******	*
Magnesium	442 ppm	******	******	******	******
Calcium	2984 ppm	******	******	******	******
Sodium	38 ppm	******			
Org.Matter	3.5 %	******	*******	**	
Carbonate(CCE)	1.4 %	*******	*		
0-6" Sol. Salts	0.49 mmho/cm	******	*******		
0-24" Sol. Salts	0.27 mmho/cm	******			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

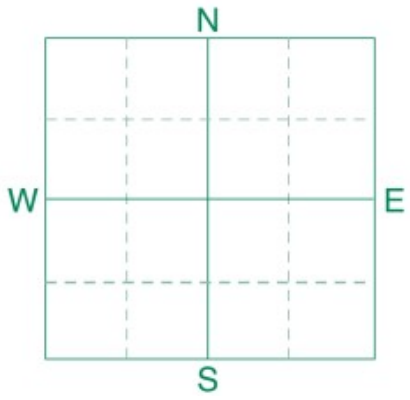
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.2**		**19.7 meq**	(65-75) **75.6**	(15-20) **18.7**	(1-7) **4.8**	(0-5) **0.8**	(0-5) **0.0**

General Comments: Texture is not estimated on high pH soils.

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NW 17-9-5**
SAMPLE ID
FIELD NAME **Piet Velduis Evan**
COUNTY
TWP RANGE
SECTION QTR ACRES **100**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598234** BOX # **3412**
LAB # **NW19706**

Date Sampled | Date Received **04/27/2019** | Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	18 lb/ac	**********	**********		
0-24" Nitrate	64 lb/ac				
Olsen Phosphorus	32 ppm	**********	**********	**********	**********
Potassium	104 ppm	**********	**********	**********	
0-24" Chloride	108 lb/ac	**********	**********	**********	**********
0-6" Sulfur	28 lb/ac	**********	**********	**********	
0-24" Sulfur	184 lb/ac	**********	**********	**********	**********
Boron	0.7 ppm	**********	**********		
Zinc	2.16 ppm	**********	**********	**********	**********
Iron	41.8 ppm	**********	**********	**********	**********
Manganese	3.1 ppm	**********	**********	**********	**********
Copper	0.79 ppm	**********	**********	**********	
Magnesium	436 ppm	**********	**********	**********	**********
Calcium	3350 ppm	**********	**********	**********	**********
Sodium	46 ppm	**********			
Org.Matter	2.4 %	**********	**********		
Carbonate(CCE)	2.1 %	**********	**********		
0-6" Sol. Salts	0.19 mmho/cm	**********			
0-24" Sol. Salts	0.2 mmho/cm	**********			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.3**		**20.9 meq**	(65-75) **80.3**	(15-20) **17.4**	(1-7) **1.3**	(0-5) **1.0**	(0-5) **0.0**

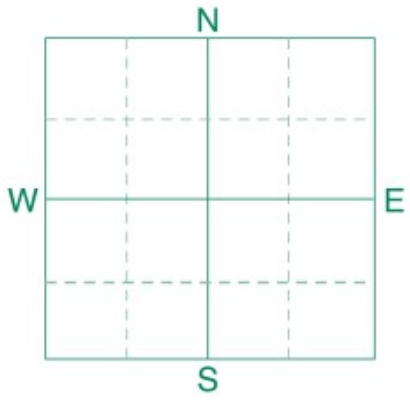
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NW 17-9-5**
SAMPLE ID
FIELD NAME **Henrys Place**
COUNTY
TWP RANGE
SECTION QTR ACRES **120**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598222** BOX # **3394**
LAB # **NW18536**

Date Sampled | Date Received **04/25/2019** | Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" / 0-24" Nitrate	10 lb/ac / 8 lb/ac	**			
Olsen Phosphorus	16 ppm	**********	**********	**********	**********
Potassium	93 ppm	**********	**********	**	
0-24" Chloride	40 lb/ac	**********	**********	**********	
0-6" / 0-24" Sulfur	14 lb/ac / 24 lb/ac	**********	**********		
Boron	0.3 ppm	****			
Zinc	0.64 ppm	**********	**********		
Iron	40.9 ppm	**********	**********	**********	**********
Manganese	2.5 ppm	**********	**********	**********	*
Copper	0.26 ppm	*****			
Magnesium	159 ppm	**********	**********	**	
Calcium	1157 ppm	**********	**********	**	
Sodium	29 ppm	****			
Org.Matter	1.7 %	******			
Carbonate(CCE)	0.6 %	****			
0-6" / 0-24" Sol. Salts	0.2 mmho/cm / 0.14 mmho/cm	***** / ***			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.7** 6-24" **8.2**		**7.5 meq**	(65-75) **77.4**	(15-20) **17.7**	(1-7) **3.2**	(0-5) **1.7**	(0-5) **0.0**

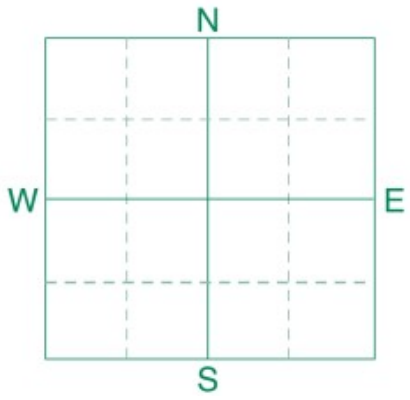
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NE 18-9-5**
SAMPLE ID
FIELD NAME **H Froese Evan**
COUNTY
TWP RANGE
SECTION QTR ACRES **100**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598232** BOX # **3457**
LAB # **NW19705**

Date Sampled
Date Received **04/27/2019**
Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	11 lb/ac				
0-24''	40 lb/ac	********			
Nitrate					
Olsen Phosphorus	62 ppm	**********	**********	**********	**********
Potassium	181 ppm	**********	**********	**********	**********
0-24'' Chloride	100 lb/ac	**********	**********	**********	**********
0-6"	32 lb/ac	**********	**********	**********	
0-24" Sulfur	160 lb/ac	**********	**********	**********	**********
Boron	0.8 ppm	**********	**********		
Zinc	2.50 ppm	**********	**********	**********	**********
Iron	27.4 ppm	**********	**********	**********	**********
Manganese	2.3 ppm	**********	**********	**********	*
Copper	0.67 ppm	**********	**********	***	
Magnesium	446 ppm	**********	**********	**********	**********
Calcium	2748 ppm	**********	**********	**********	**********
Sodium	39 ppm	******			
Org.Matter	2.4 %	*********	***		
Carbonate(CCE)	1.1 %	******			
0-6"	0.21 mmho/cm	*****			
0-24" Sol. Salts	0.28 mmho/cm	*******			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.4**		**18.1 meq**	(65-75) **76.0**	(15-20) **20.5**	(1-7) **2.6**	(0-5) **0.9**	(0-5) **0.0**

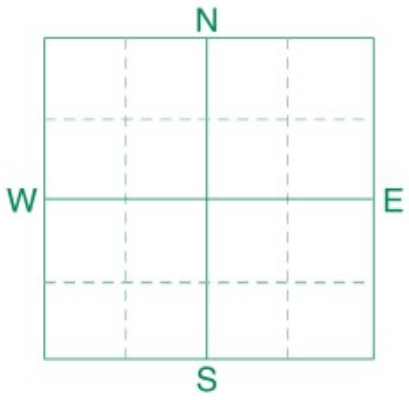
General Comments: Texture is not estimated on high pH soils.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NW 18-9-5**
SAMPLE ID
FIELD NAME **Evan 70**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598223** BOX # **3412**
LAB # **NW19699**

Date Sampled | Date Received **04/27/2019** | Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	8 lb/ac	***			
0-24" Nitrate	16 lb/ac				
Olsen Phosphorus	38 ppm	**********	**********	**********	**********
Potassium	133 ppm	**********	**********	**********	**
0-24" Chloride	40 lb/ac	**********	**********	**********	
0-6" Sulfur	50 lb/ac	**********	**********	**********	**********
0-24" Sulfur	136 lb/ac	**********	**********	**********	**********
Boron	0.5 ppm	**********	**********		
Zinc	2.70 ppm	**********	**********	**********	**********
Iron	60.3 ppm	**********	**********	**********	**********
Manganese	2.2 ppm	**********	**********	**********	
Copper	0.58 ppm	**********	**********		
Magnesium	334 ppm	**********	**********	**********	***
Calcium	2493 ppm	**********	**********	**********	**********
Sodium	31 ppm	*****			
Org.Matter	2.6 %	**********	**********		
Carbonate(CCE)	0.6 %	****			
0-6" Sol. Salts	0.22 mmho/cm	*****			
0-24" Sol. Salts	0.15 mmho/cm	***			

General Comments: Texture is not estimated on high pH soils.

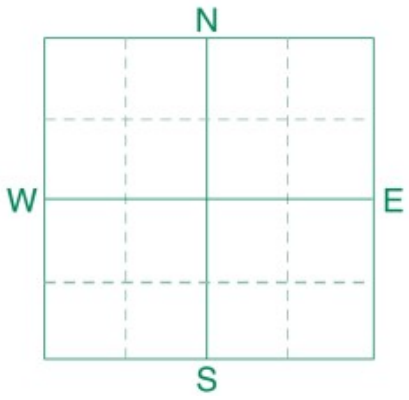
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.7** 6-24" **8.1**		**15.7 meq**	(65-75) **79.3**	(15-20) **17.7**	(1-7) **2.2**	(0-5) **0.9**	(0-5) **0.0**

SOIL TEST REPORT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID **SE 13-9-6 & SW 18-9-5**
SAMPLE ID
FIELD NAME **Evan 150**
COUNTY
TWP RANGE
SECTION QTR ACRES **240**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598227** BOX # **3457**
LAB # **NW19701**

Date Sampled
Date Received **04/27/2019**
Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	3 lb/ac	*			
0-24" Nitrate	4 lb/ac				
Olsen Phosphorus	15 ppm	**********	**********	**********	**********
Potassium	80 ppm	**********	**********		
0-24" Chloride	4 lb/ac	*			
0-6" Sulfur	30 lb/ac	**********	**********	**********	
0-24" Sulfur	104 lb/ac	**********	**********	**********	**********
Boron	0.4 ppm	*****			
Zinc	1.26 ppm	**********	**********	**********	**
Iron	73.7 ppm	**********	**********	**********	**********
Manganese	2.5 ppm	**********	**********	**********	*
Copper	0.13 ppm	**			
Magnesium	154 ppm	**********	**********	**	
Calcium	1085 ppm	**********	**********	*	
Sodium	10 ppm	*			
Org.Matter	2.1 %	********	**		
Carbonate(CCE)	0.8 %	*****			
0-6" Sol. Salts	0.14 mmho/cm	***			
0-24" Sol. Salts	0.12 mmho/cm	***			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **6.8** 6-24" **7.7**		**7.2 meq**	(65-75) **75.4**	(15-20) **17.8**	(1-7) **2.8**	(0-5) **0.6**	(0-5) **3.4**

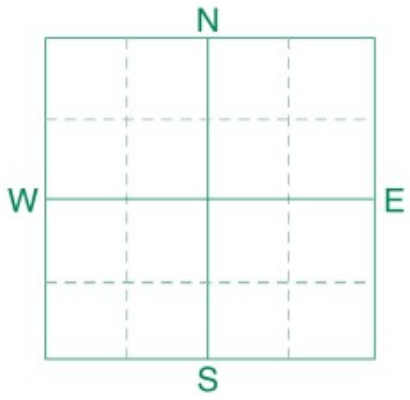
General Comments: Sand (CEC range = 0 to 10) (Coarse)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NW 28-9-5**
SAMPLE ID
FIELD NAME **Jack Foote**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2597824** BOX # **3302**
LAB # **NW18445**

Date Sampled
Date Received **04/25/2019**
Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	5 lb/ac	**			
0-24" Nitrate	8 lb/ac				
Olsen Phosphorus	12 ppm	**********	**********	*******	
Potassium	107 ppm	**********	**********	****	
0-24" Chloride	96 lb/ac	**********	**********	**********	**********
0-6"	18 lb/ac	**********	********		
0-24" Sulfur	128 lb/ac	**********	**********	**********	**********
Boron	0.6 ppm	*********	***		
Zinc	1.29 ppm	**********	**********	**********	**
Iron	35.7 ppm	**********	**********	**********	**********
Manganese	4.5 ppm	**********	**********	**********	**********
Copper	0.61 ppm	**********	**********	**	
Magnesium	315 ppm	**********	**********	**********	***
Calcium	2979 ppm	**********	**********	**********	**********
Sodium	28 ppm	****			
Org.Matter	3.4 %	**********	********		
Carbonate(CCE)	0.9 %	*****			
0-6"	0.28 mmho/cm	*******			
0-24" Sol. Salts	0.31 mmho/cm	*******			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.2** 6-24" **8.2**		**18.0 meq**	(65-75) **82.8**	(15-20) **14.6**	(1-7) **1.5**	(0-5) **0.7**	(0-5) **0.4**

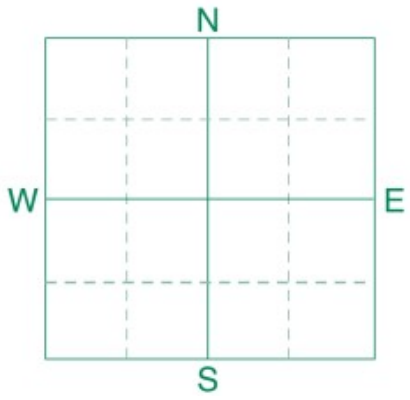
General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **NE + SE 28-9-5**
SAMPLE ID
FIELD NAME **Jack Foote**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2597825** BOX # **3308**
LAB # **NW18446**

Date Sampled | Date Received **04/25/2019** | Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	4 lb/ac	**			
0-24" Nitrate	12 lb/ac				
Olsen Phosphorus	35 ppm	**********	**********	**********	**********
Potassium	151 ppm	**********	**********	**********	**********
0-24" Chloride	112 lb/ac	**********	**********	**********	**********
0-6" Sulfur	12 lb/ac	**********	**********		
0-24" Sulfur	96 lb/ac	**********	**********	**********	**********
Boron	0.4 ppm	**********			
Zinc	1.72 ppm	**********	**********	**********	**********
Iron	55.8 ppm	**********	**********	**********	**********
Manganese	3.6 ppm	**********	**********	**********	**********
Copper	0.79 ppm	**********	**********	**********	
Magnesium	245 ppm	**********	**********	**********	
Calcium	1996 ppm	**********	**********	**********	**********
Sodium	16 ppm	**			
Org.Matter	1.9 %	**********			
Carbonate(CCE)	0.9 %	**********			
0-6" Sol. Salts	0.19 mmho/cm	****			
0-24" Sol. Salts	0.21 mmho/cm	**********			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

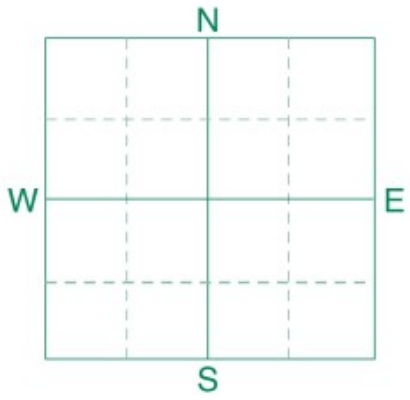
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.2** 6-24" **8.1**		**12.5 meq**	(65-75) **79.6**	(15-20) **16.3**	(1-7) **3.1**	(0-5) **0.6**	(0-5) **0.4**

General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

SOIL TEST REPORT

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

FIELD ID **NW 33-9-5**
SAMPLE ID
FIELD NAME **Boyachek**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2598224** BOX # **3394**
LAB # **NW18538**

Date Sampled Date Received **04/25/2019** Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6"	42 lb/ac				
0-24''	120 lb/ac				
Nitrate		**********	**********	**********	**********
Olsen Phosphorus	26 ppm	**********	**********	**********	**********
Potassium	251 ppm	**********	**********	**********	**********
0-24'' Chloride	148 lb/ac	**********	**********	**********	**********
0-6" Sulfur	44 lb/ac	**********	**********	**********	**********
0-24" Sulfur	152 lb/ac	**********	**********	**********	**********
Boron	0.6 ppm	**********	**********		
Zinc	1.04 ppm	**********	**********	**********	
Iron	32.8 ppm	**********	**********	**********	**********
Manganese	15.5 ppm	**********	**********	**********	**********
Copper	0.81 ppm	**********	**********	**********	
Magnesium	571 ppm	**********	**********	**********	**********
Calcium	2537 ppm	**********	**********	**********	**********
Sodium	30 ppm	****			
Org.Matter	3.1 %	**********	**********		
Carbonate(CCE)	0.8 %	*****			
0-6" Sol. Salts	0.43 mmho/cm	**********			
0-24" Sol. Salts	0.32 mmho/cm	********			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.3** 6-24" **8.0**		**18.2 meq**	(65-75) **69.6**	(15-20) **26.1**	(1-7) **3.5**	(0-5) **0.7**	(0-5) **0.0**

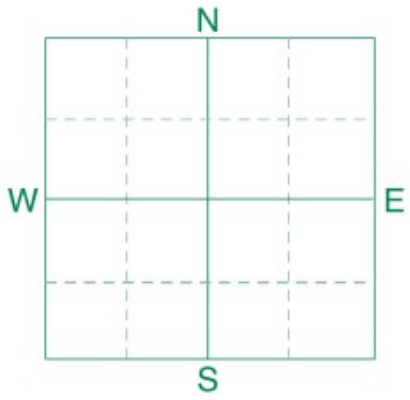
General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **SW 28-9-5**
SAMPLE ID
FIELD NAME **Jack Foote**
COUNTY
TWP RANGE
SECTION QTR ACRES **160**
PREV. CROP



SUBMITTED FOR:
REIDBOW DAIRY LTD
BOX 308
ELM CREEK, MB R0G 0N0

SUBMITTED BY: **CA0940**
CARGILL-ELM CREEK
BOX 208
ELM CREEK, MB R0G 0N0

REF # **2597826** BOX # **3302**
LAB # **NW18447**

Date Sampled | Date Received **04/25/2019** | Date Reported **4/26/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 31 lb/ac 0-24'' 12 lb/ac Nitrate		**			
Olsen Phosphorus	37 ppm	**********	**********	**********	**********
Potassium	188 ppm	**********	**********	**********	**********
0-24'' Chloride	64 lb/ac	**********	**********	**********	**********
0-6" 28 lb/ac 0-24" 480 +lb/ac Sulfur		**********	**********	**********	**********
Boron	0.6 ppm	*********	***		
Zinc	2.17 ppm	**********	**********	**********	**********
Iron	48.3 ppm	**********	**********	**********	**********
Manganese	4.1 ppm	**********	**********	**********	****
Copper	0.8 ppm	**********	**********	******	
Magnesium	330 ppm	**********	**********	**********	***
Calcium	2208 ppm	**********	**********	**********	**********
Sodium	19 ppm	***			
Org.Matter	2.4 %	*********	***		
Carbonate(CCE)	0.8 %	*****			
0-6" 0.28 mmho/cm 0-24" 0.53 mmho/cm Sol. Salts		*******	**********	*******	

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.3** 6-24" **8.1**		**14.4 meq**	(65-75) **76.9**	(15-20) **19.2**	(1-7) **3.4**	(0-5) **0.6**	(0-5) **0.0**

General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)
Percent hydrogen is estimated From water pH, CEC corrected for exchangeable acidity.

Nutrients Excreted	lbs
Nitrogen	441424
P2O5	183517
Crop Nutrient Use	**lb/ac**
Crop N Uptake	135.9
Crop P2O5 Removal	38.3
Operation P2O5 Credit	76.6
Land Available	4021
Land Base Requirements	**acres**
Acres for Nitrogen Uptake	**3248**
Acres for Phosphorus Removal	**2397**
Phosphorus Balance	**acres**
Acres for Phosphorus Balance	**4794**

Last revised Dec 18, 2017

Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
Pigs	Gestating Sow	0	0
	Nursing Sow	0	0
	Nursing Litter	0	0
	Live Cull Sows	0	0
	Bred Gilts	0	0
	Gilts	0	0
	Boars	0	0
	Weanlings	0	0
	Growers/finishers	0	0
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
Beef	Mature Cows (>2 years old)	0	0
	Bred Heifer (14 mo - 2 years)	0	0
	Replacement Heifers (7 mo-14 mo)	0	0
	Unweaned Calves (0-7 mo)	0	0
	Bulls	0	0
	Mature Cows and Bred Heifers, plus associated livestock	6722	2788
	Feedlot Cattle - long keep	0	0
	Feedlot Cattle - short keep	0	0
	Backgrounders - pasture	0	0
	Backgrounders - confined	0	0
Dairy	Lactating cow	316900	132017
	Dry cow	36852	12906
	Calf, 0-3 months	662	820
	Calf, 4-13 months	21147	10104
	Replacements, >13 months	59141	24882
	Mature Cows, plus assoc livestock	0	0
Sheep	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
Chickens	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
Layers	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
Turkeys	Broiler Hens (0-9 wks)	0	0
	Hens (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	0	0
	Light Toms (0-12 wks)	0	0
	Toms (0-13 wks)	0	0
	Heavy Toms (0-15 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (30-60 wks)	0	0
	Breeding Tom Grower (0-18 wks)	0	0
	Breeding Tom Grower (0-30 wks)	0	0
	Breeding Tom (30-60 wks)	0	0
	Total	**441424**	**183517**

Note: Be sure all livestock species on your farm are represented in this table, not just the livestock in the proposed expansion.

Crop	Removal P2O5	Removal N	Uptake N	Units	Yield	Units	Acreage	Removal P2O5 (lb)	Removal N (lb)	Uptake N (lb)
Alfalfa	13.8	58	58	lb/ton	4	ton/ac	1229	67841	285128	285128
Barley Grain	0.42	0.97	1.39	lb/bu		bu/ac		-	-	-
Barley Silage	11.8	34.4	34.4	lb/ton		ton/ac		-	-	-
Canola	1.04	1.93	3.19	lb/bu		bu/ac		-	-	-
Corn Grain	0.44	0.97	1.53	lb/bu		bu/ac		-	-	-
Corn Silage	12.7	31.2	31.2	lb/ton	4	tons/ac	1306	66345	162989	162989
Dry Edible Beans	1.39	4.17		lb/cwt		cwt/ac		-	-	-
Fababeans	1.79	5.02	8.4	lb/cwt		cwt/ac		-	-	-
Flax	0.65	2.13	2.88	lb/bu		bu/ac		-	-	-
Grass Hay	10	34.2	34.2	lb/ton	3	tons/ac	200	6000	20520	20520
Lentils	1.03	3.39	5.08	lb/cwt		cwt/ac		-	-	-
Oats	0.26	0.62	1.07	lb/bu	4	bu/ac	497	517	1233	2127
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac	437	2185	7473	7473
Peas	0.69	2.34	3.06	lb/bu		bu/ac		-	-	-
Potatoes	0.09	0.32	0.57	lb/cwt		cwt/ac		-	-	-
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-
Soybeans	0.84	3.87	5.2	lb/bu	37.3	bu/ac	352	11029	50812	68274
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu		bu/ac		-	-	-
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
						Total Acres	4021	153916	528154	546511
						Estimated Average Removal/Uptake (lb/ac)		38.3	131.3	135.9
						Acres in Hanover and La Broquerie	0			
						Proportion in Hanover or La Broquerie	0%			
						Additional Acres				
						Crop Planned on Additional Acres				
						Total Acreage	4021			

***Notes:** Enter the number of acres that are in the RM's of Hanover or La Broquerie in cell H26.
Additional acres include acres for which crop removal or soil data is limited or unavailable.

Last revised December 18, 2017

Type	Storage Type	Volatilization	Animal Numbers	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days on Feed per Cycle (days)	Number of Cycles per Year	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)	P2O5 Excreted per Herd Per Year (lb/yr/herd)
Lactating Cows	Liquid Uncovered Steel/Concrete	10%	1000	1400	1440	1420	365	1	316900	132017
Dry Cows	Manure Pack	20%	250	1440	1440	1440	365	1	36852	12906
Calves, 0-3 months	Manure Pack	20%	150	90	275	183	365	1	662	820
Calves, 4-13 months	Manure Pack	20%	450	275	810	543	365	1	21147	10104
Replacements, >13 months	Manure Pack	20%	625	810	1250	1030	365	1	59141	24882
Mature Cows, plus associated livestock	Manure Pack	20%	0	n/a	n/a	n/a	n/a	n/a	0	0

Last revised August 20, 2014

Species	Type	Storage Type	Volatilization	Animal Numbers	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days per Cycle (Days)	Cycles per Year	Rate of Gain (lb/day)	Days Place is Occupied per Year (days)	N Excreted Per Herd Adjusted for Storage N Loss (lb N/yr/herd)	P2O5 Excreted Per Herd Per Year (lb P2O5/year)
Cow Calf	Mature Cows (>2 years old)	Field Storage	40%		1375	1375	1375	365	1.0		365	0.0	0.0
Cow Calf	Bred Heifer (14 mo - 2 years)	Field Storage	40%		926	1238	1082	280	1.0	1.42	280	0.0	0.0
Cow Calf	Replacement Heifers (7 mo-14 mo)	Field Storage	40%		581	926	754	225	1.0	1.53	225	0.0	0.0
Cow Calf	Unweaned Calves (0-7 mo)	Mechanically Dried	40%		86	581	334	210	1.0	2.36	210	0.0	0.0
Cow Calf	Bulls	Field Storage	40%		2100	2200	2150	365	1.0		365	0.0	0.0
Cow Calf	Mature Cows and Bred Heifers, plus associated livestock	Field Storage	40%	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6721.6	2787.7
Feeder	Feedlot Cattle - long keep	Field Storage	40%		581	1300	941	240	1.0	3.00	240	0.0	0.0
Feeder	Feedlot Cattle - short keep	Field Storage	40%		975	1300	1138	116	1.0	2.80	116	0.0	0.0
Feeder	Backgrounders - pasture	Field Storage	40%		793	975	884	105	1.0	1.73	105	0.0	0.0
Feeder	Backgrounders - confined	Field Storage	40%		500	793	647	180	1.0	1.63	180	0.0	0.0

Last Revised January 21, 2015

Manitoba Agriculture
Land Base Calculator

Colour Conventions:

	Farm specific data can be entered in the yellow cells of each tab. Where appropriate, default values have been provided but can be changed.
	Fixed data are provided in the grey cells of each tab.
	Calculated values are shown in the green cells of each tab.
	The land base requirements for nitrogen (N) and phosphorus (P_2O_5) are provided in the amber cells on tab 4.

Data Entry and Tab Information:

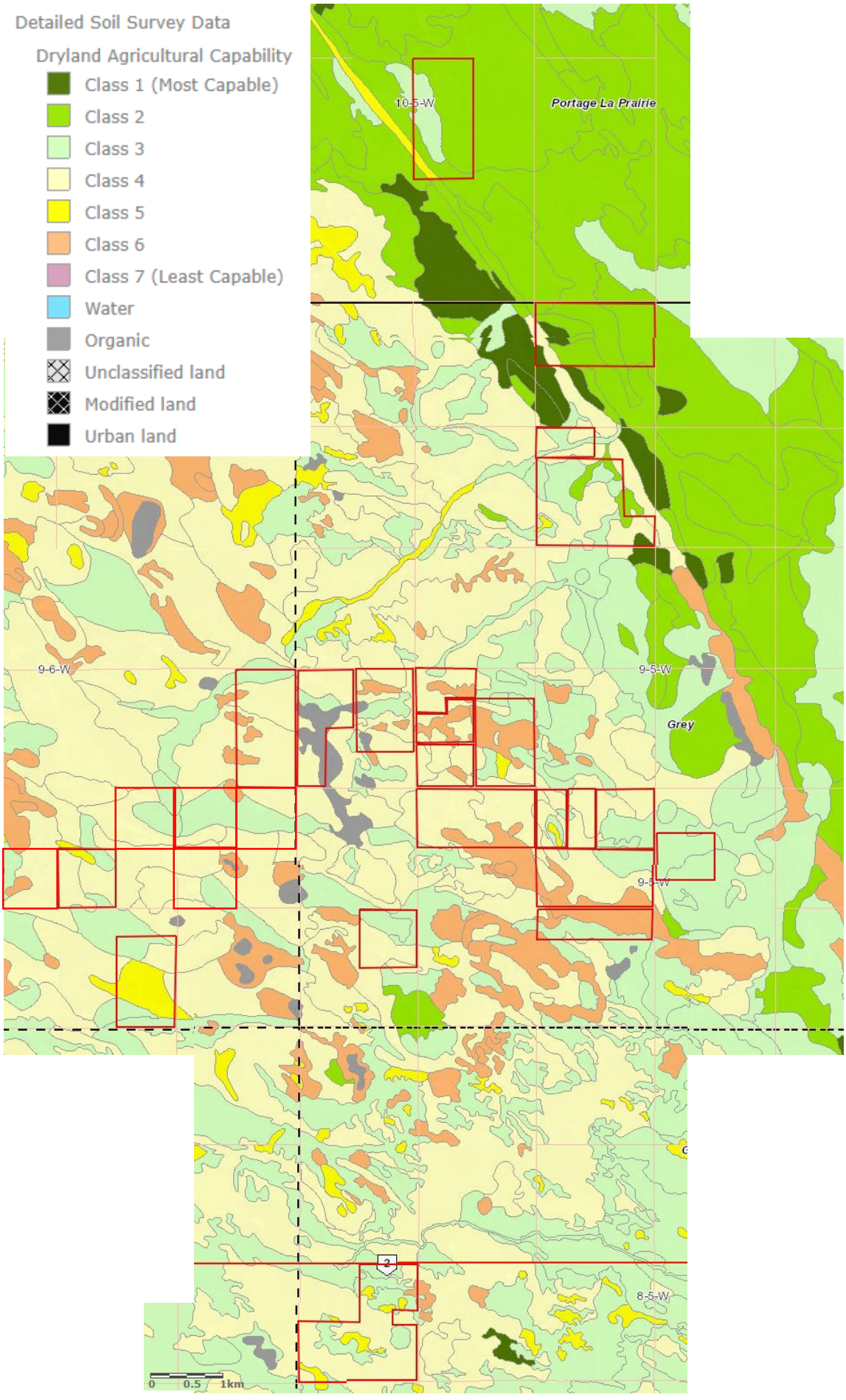
Enter all of the livestock for your farm and associated data in the yellow cells under tabs 1a to 1e.
Enter all of the crop rotation data on tab 2. Long-term crop yield averages using MASC records are required for Provinical Technical Review Site Assessments.
Total nitrogen (N) and total phosphorus (P_2O_5) excreted by the livestock are summarized on tab 3.
Nutrient excretion, crop nutrient use and acres required for nitrogen (N) and phosphorus (P_2O_5) are summarized on tab 4.

For assistance, contact:

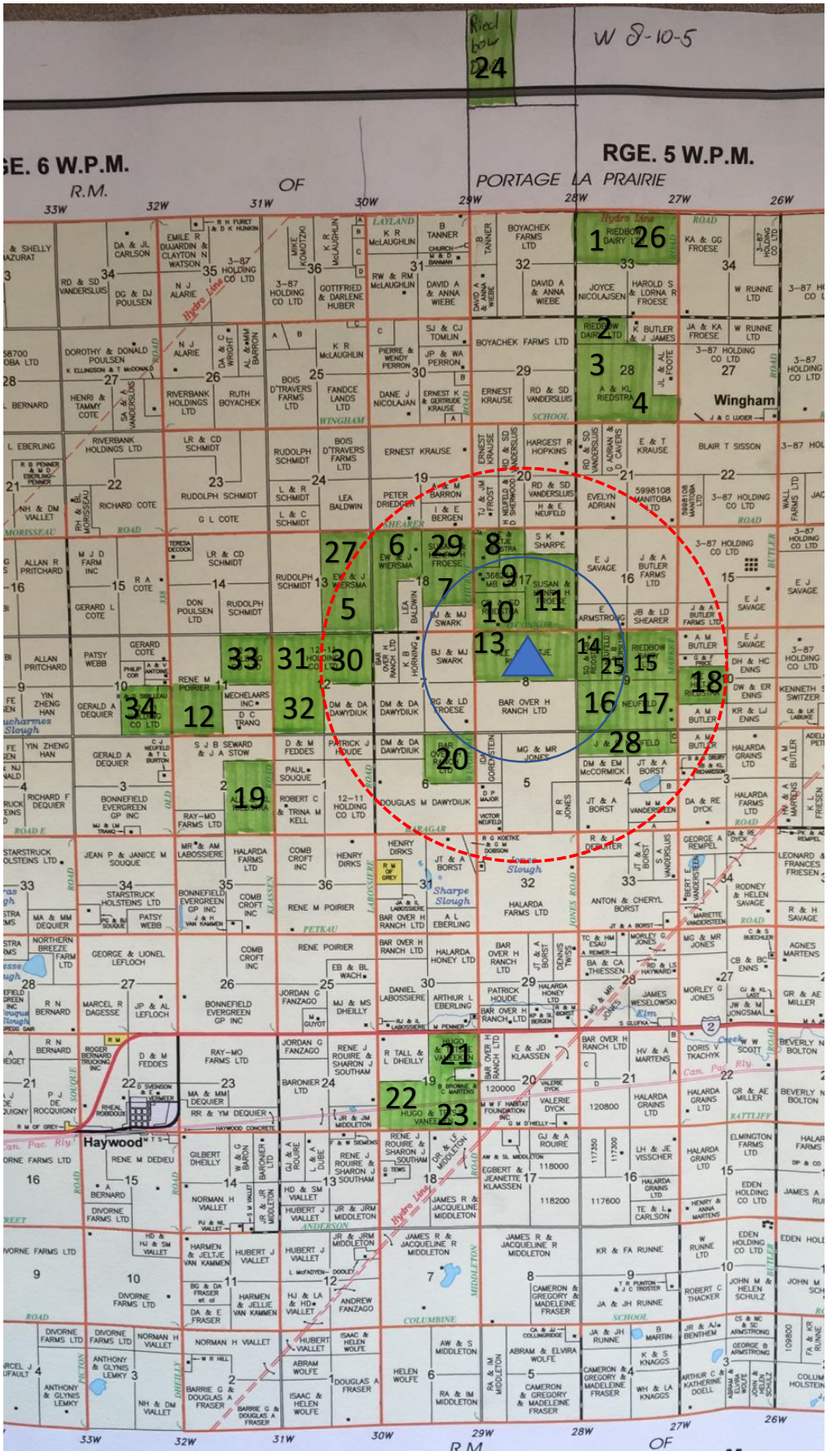
Clay Sawka, Nutrient Management Specialist, Manitoba Agriculture, (204) 750-3066
Petra Loro, Livestock Environment Specialist, Manitoba Agriculture, (204) 918-0325

Last revised July 25, 2018

8.7 Map of fields, and soil data



8.7 Map of fields, and soil data



-Green field numbers correspond with file 8.7 Manure Application Field Characteristics
- Blue Triangle represents the Riedbow Dairy farm
-Red circle indicates 2 mile notification area for the public conditional use hearing
-Blue circle indicates 1 mile radius

Manure Application Agreement

We, Jake and Bev Neufeld, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NW 9-9-5 in the RM of Grey (80 acres, 68 acres available for manure)
- SW 9-9-5 in the RM of Grey (160 acres, 98 acres available for manure)
- SE 9-9-5 in the RM of Grey (160 acres, 103 acres available for manure)
- NW 4-9-5 in the RM of Grey (80 acres, 10 acres available for manure)
- NE 4-9-5 in the RM of Grey (80 acres, 73 acres available for manure)

Totalling approximately 352 acres available for manure. This agreement covers the period starting April 11th until December 1st 2029.

Dated: march 19th 2019

Signed: _____

Signed: _____

Manure Application Agreement

We, Henry and Susan Froese, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NE 17-9-5 in the RM of Grey (80 acres, 30 available for manure)
- SE 17-9-5 in the RM of Grey (160 acres, 77 available for manure)
- NE 18-9-5 in the RM of Grey (160 acres, 96 available for manure)
- SE 18-9-5 in the RM of Grey (80 acres, 55 available for manure)

Totalling approximately 258 acres available for manure. This agreement covers the period starting April 11th 2019 until December 1st 2029.

Dated: May 23 2019

Signed: _____

Signed: Henry Froese

Manure Application Agreement

We, Ale and Hilly Riedstra, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NW 17-9-5 in the RM of Grey (120 acres, 46 available for manure)
- NW 10-9-5 in the RM of Grey (40 acres, 27 available for manure)
- SW 10-9-5 in the RM of Grey (80 acres, 78 available for manure)
- NW 8-9-5 in the RM of Grey (160 acres, 80 available for manure)
- NE 8-9-5 in the RM of Grey (160 acres, 80 available for manure)

Totalling approximately 305 acres available for manure. This agreement covers the period starting April 11th 2019 until December 1st 2029.

Dated: April 29 2019

Signed: _____

Signed: _____

Manure Application Agreement

We, Hugo and Tetsje VanEeken, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NE 19-8-5 in the RM of Grey (133 acres, 116 available for manure)
- SE 19-8-5 in the RM of Grey (141 acres, 109 available for manure)
- SW 19-8-5 in the RM of Grey (150 acres, 130 available for manure)

Totalling approximately 355 acres available for manure. This agreement covers the period starting April 11th 2019 until December 1st 2029.

Dated: April 03, 2019

Signed: _____

Signed: _____

Manure Application Agreement

We, Evan and Janny Wiersema, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NW 18-9-5 in the RM of Grey (160 acres, 115 available for manure)
- SW 18-9-5 in the RM of Grey (80 acres, 22 available for manure)
- NE 13-9-6 in the RM of Grey (160 acres, 130 available for manure)
- SE 13-9-6 in the RM of Grey (160 acres, 137 available for manure)

Totalling approximately 404 acres available for manure. This agreement covers the period starting April 11th 2019 until December 1st 2029.

Dated: April 8 2019

Signed: _____

Signed: _____

Manure Application Agreement

We, Ale and Kristen Riedstra, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NW 28-9-5 in the RM of Grey (80 acres, 80 available for manure)
- NE 28-9-5 in the RM of Grey (40 acres, 32 available for manure)
- SW 28-9-5 in the RM of Grey (160 acres, 145 available for manure)
- SE 28-9-5 in the RM of Grey (120 acres, 100 available for manure)
- NE 2-9-6 in the RM of Grey (80 acres, 42 available for manure)
- SE 2-9-6 in the RM of Grey (160 acres, 150 available for manure)

Totalling approximately 549 acres available for manure. This agreement covers the period starting April 11th 2019 until December 1st 2029.

Dated: April 8 2019

Signed: 

Signed: 

Manure Application Agreement

We, Derrick and Chantelle Riedstra, hereby agree to allow Riedbow Dairy authorization to spread manure on the following properties:

- NW 9-9-5 in the RM of Grey (80 acres, 73 available for manure)
- SW 17-9-5 in the RM of Grey (110 acres, 91 available for manure)

Totalling approximately 119 acres available for manure. This agreement covers the period starting April 11th 2019 until December 1st 2029.

Dated: April 25 2019

Signed: [signature]

Signed: Derrick Riedstra

R.M. OF GREY

Truck haul routes

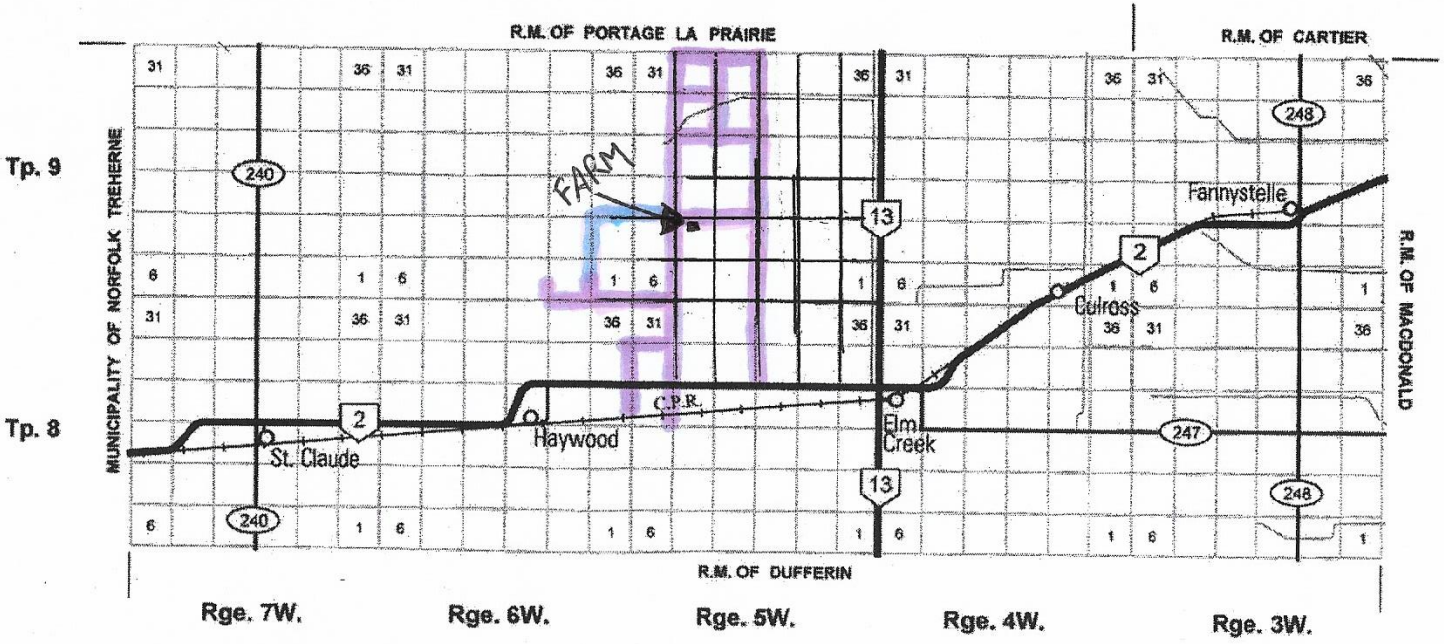
Riedbow Dairy

0 5
SCALE IN KILOMETRES

PROVINCE OF MANITOBA
INFRASTRUCTURE
HIGHWAY PLANNING AND DESIGN BRANCH
GEOGRAPHIC & RECORDS MANAGEMENT SECTION
WINNIPEG
JANUARY 1, 2015

LEGEND

PROVINCIAL TRUNK HIGHWAYS 13
PROVINCIAL ROADS 247
ACCESS ROADS .....
RAILWAYS .....



SHEET 1 OF 1

Below is what you submitted to colin.murray@gov.mb.ca on Monday, May 27, 2019 at 12:42:55

DocumentID: Manitoba_Sustainable_Development

Project Title: Riedbow Dairy Animal Units

Date Needed: 2019/06/11

Name: Harm Jan Pot

Company/Organization: Riedbow Dairy Ltd

Address: Box 308

City: Elm Creek

Province/State: Manitoba

Phone: 2047503024

Email: haroldpot@hotmail.com

Project Description: We are planning to expand our Animal Units from 1600 to 2550 at our current farm at NW 8-9-5 W. No new buildings will be built, and all the current buildings will be used. We are going through a technical review.

Information Requested: A conservation Data Centre Report must be requested and the response attached to this site assessment.

Format Requested: By email. Word document

Location: La Salle RedBoine Conservation District. RM of Grey.

action: Submit

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's (CDC) rare species database for your area of interest. This includes the primary location NW-08-009-05W1; and a two kilometer radius buffer from the edge of the location boundary.

The search resulted in the following occurrences:

Within the footprint or primary location(s):
NW-08-009-05W1 (Primary):
No listed or tracked species occurrences at this time.

Within 2km of the footprint boundary:
Within 2km of NW-08-009-05W1 (Primary):

TAXGROUP	SCINAME	COMNAME	SRANK	ESEA	SARA	COSEWIC
Vertebrate Animal	Melanerpes erythrocephalus	(Red-headed Woodpecker)	S3B	Threatened	Threatened	Threatened

General area records low locational accuracy:
NA

Found in broader area and similar habitat:
NA

Further information on this ranking system can be found on our website at:
http://www.natureserve.org/conservation-tools/conservation-status-assessment.
These designations can be found at:
http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php,
https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html and
http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1.

Manitoba's recommended setback distances can be found at:
https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf.
The information provided in this letter is based on existing data known to the Manitoba CDC of the Wildlife and Fisheries Branch at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. **An absence of data does not confirm the absence of any rare or endangered species.** Many areas of the province have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should, therefore, not be regarded as a final statement on the occurrence of any species of concern nor should it substitute for on-site surveys for species or environmental assessments. Also, because our Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request.

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months passes before it is utilised.

Third party requests for products wholly or partially derived from the Biotics database must be approved by the Manitoba CDC before information is released. Once approved, the primary user

will identify the Manitoba CDC as data contributors on any map or publication using data from our database, as the Manitoba Conservation Data Centre; Wildlife and Fisheries Branch, Manitoba Sustainable Development.

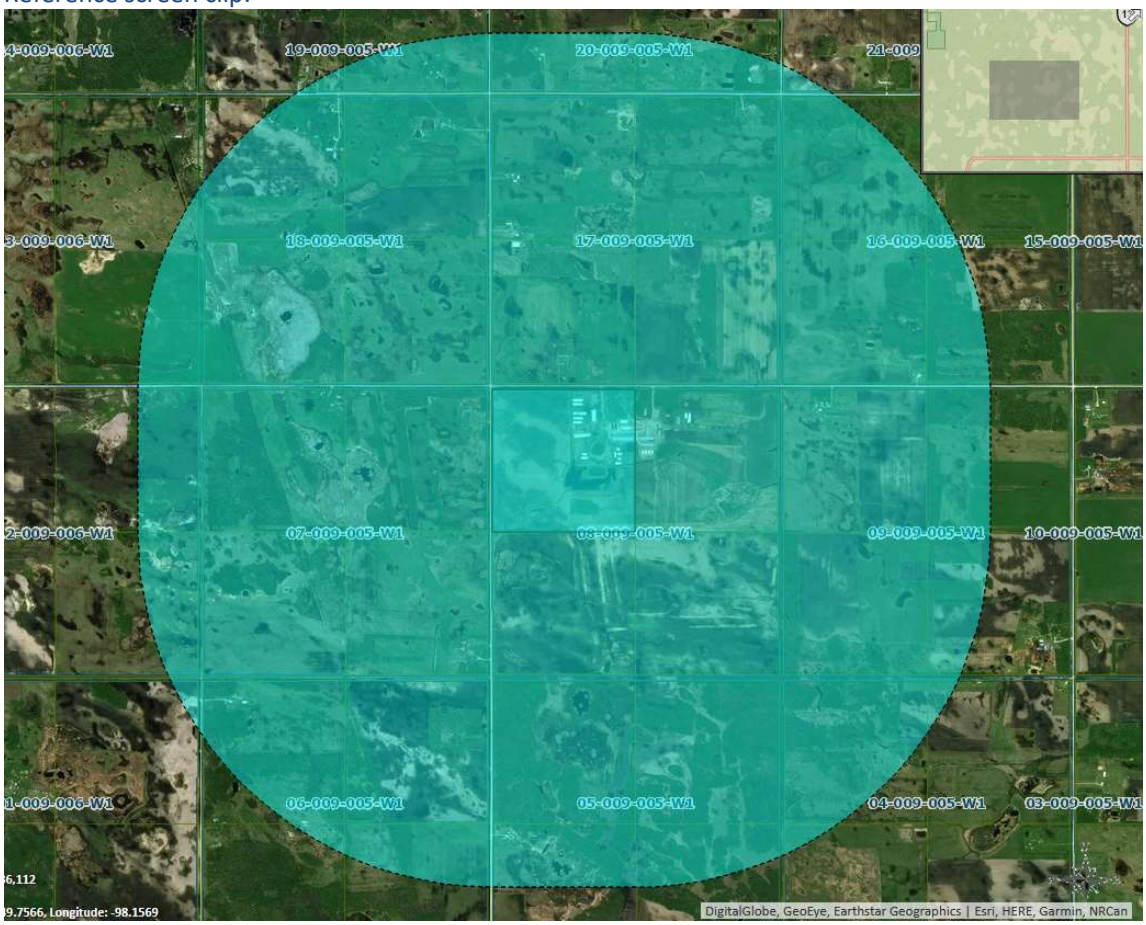
This letter is for information purposes only - it does not constitute consent or approval of the proposed project or activity, nor does it negate the need for any permits or approvals required by the Province of Manitoba.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information contact me directly at (204) 945-7760.

Colin

Reference screen clip:



Mass Mortality Contingency Planning

Animal mortality is a regular occurrence on our, or any, dairy farm. However, in the event of mass mortality we need to be prepared to manage large volumes of animal carcasses rapidly. The formulation of a mass mortality contingency plan is an essential step to timely and effectively manage a potentially “messy” situation.

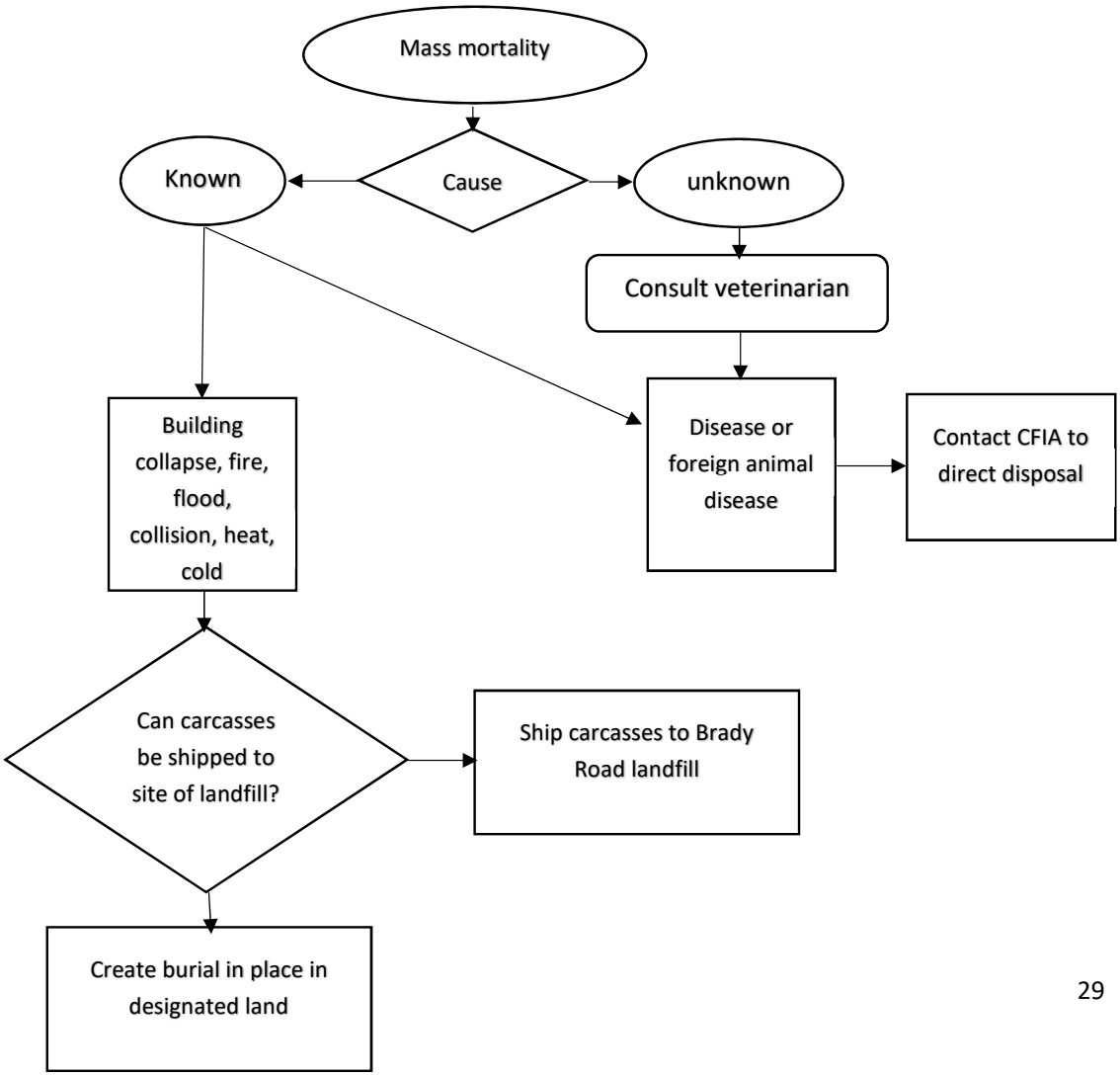
The following chart, below the text, gives direction on the final resting place of mortalities. There are various kinds of catastrophes that could result in mass mortality and therefore we have different measures of disposal.

Our first option would be to bring them to a landfill. The Brady Road landfill in Winnipeg had confirmed that they would accept all our animals in case of a mass mortality.

The second option is burial. For burial we have designated a suitable piece of land we own (NE 33-9-5 W). The soil type of this land is heavy clay. This soil is chosen for this purpose as it will ensure that no contamination of soil or water will occur.

In case of a foreign animal disease we must consult CFIA and they will direct the disposal options.

All of the measures mentioned above have been discussed with environment Canada, and comply with their regulations. In all scenario’s we will contact them for their advice.



Riedbow Dairy Ltd. Quota Holding History 2015 to 2019

Month/Year	Quota Change Details	Quota Holding kg./day
Jan. 2015	Starting quota	811.06
Feb. 2015	1% Quota increase	819.17
May 2015	0.5% Quota Increase	823.27
Sep. 2016	2% Quota Increase	839.74
Nov. 2016	2% Quota Increase	856.53
Dec. 2016	2% Quota Increase	873.66
Feb. 2017	2% Quota Increase	891.13
Apr. 2017	2% Quota Increase	908.95
Sep. 2017	3% Quota Increase	954.94
Oct. 2017	1% Quota Increase	964.49
Nov. 2017	1% Quota Increase	974.13
Dec. 2017	1% Quota Increase	983.87
Jan. 2018	1% Quota Increase	993.71
May 2018	1% Quota Decrease	983.77
Feb. 2019	4% Quota Increase	1,023.12

14.0 Additional Information.

From January 2015 to February 2019 the farm has received a total increase in Quota of 212.06 Kg/day, see attachment 15. To meet his quota the farm needs to expand its animal units, the existing buildings can hold this increase in animals as we will move our dry cows outside.

5.0 The proposal to expand from 1600 animal units to 2563 seems very big. However, the actual increase in milking cows will be 25%; from 800 milking cows, to 1000. In the previous conditional use the farm has been allowed 1600 Animal units calculated on 800 milking cows. In the new application the farm requests animal units for both milking (1000) and dry cows (250), and a small addition of beef cows (50)

6.0/10.0 Although the animal confinement facilities will not change, we have included a site map and filled out all the tables in section 10 to give a clear overview on the current operation.

7.2 In the site assessment the farm has calculated a total dugout size of 700*200*20, to clarify, this is not one dug-out, but three. On the project site map the three dug-outs are indicated with their individual sizes.

7.4 In the dairy barn water calculation there is a note that robot milking systems require more water, however the current calculation did not allow to calculate this increase. To ensure that the calculation would be representative to this farm, we have changed the calculation to account for a water usage per robot, per milking, of 7.3 litres of water. This number is taken from research by A. Thomson in 2018[1]. In the calculator we have changed the calculation for milking system cleaning requirements L to calculate; number of cows, multiplied by average number of milkings per day, multiplied by water usage per milking for a robot.

8.0 Riedbow dairy files an annual management plan and soil samples all the fields that are included in it. In addition, it is our goal to handle and spread manure in an environmentally sustainable way. When we spread on cultivated land it is our goal to incorporate the manure as soon as possible. When we spread on established perennial forage stands we do not incorporate the manure as that would destroy the forage stand. We do try to take weather conditions into consideration but at the same time we need to balance hauling with the provincial regulations which does make for short application windows.

11.0 With the increase in animals on the farm, an increase in traffic could be expected. The farm has made investments to reduce the impact on the road.

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1 https://nsfa-fane.ca/wp-content/uploads/2018/03/008_Dal_NSFA-Water-Use-Report-Automatic-Milking-Systems.pdf