SITE ASSESSMENT

For Large Livestock Operation Proposals (300 Animal Units or more)

1.0 Purpose

The set up, or expansion, of a livestock operation that has 300 Animal Units or more is subject to **Part 7 of *The Planning Act***. This includes consideration as a conditional use by the municipal council or planning district board. It also includes a review by the Technical Review Committee (TRC) appointed by the Minister of Local Government. The **Technical Review Committee Regulation** requires a site assessment to help the committee do its review and allow people who will be affected by the livestock operation to comment on the proposal.

2.0 Assistance

For assistance in completing the Site Assessment Form please refer to the following.

For links to resources, click on the **highlighted underlined items.**

For additional information on a particular item, please click on the (?) **"Learn More"** icon.

For definitions, click on the **Glossary of Terms**.

For help with mapping, contact your **Community and Regional Planning Regional Office**.

For additional help, contact the **Technical Review Coordination Unit**.

3.0 Description of Livestock Operation

Operation legal name, if other than the owner's name:

Kirk Kliever

Operation location (project site): SW - 6 - 12 - 27 W1

Rural Municipality (RM) of Wallace

Legal description: section, township, range or river lot(s)

SW 6 - 12 - 27 W1

Manitoba Premises Identification Number: _____

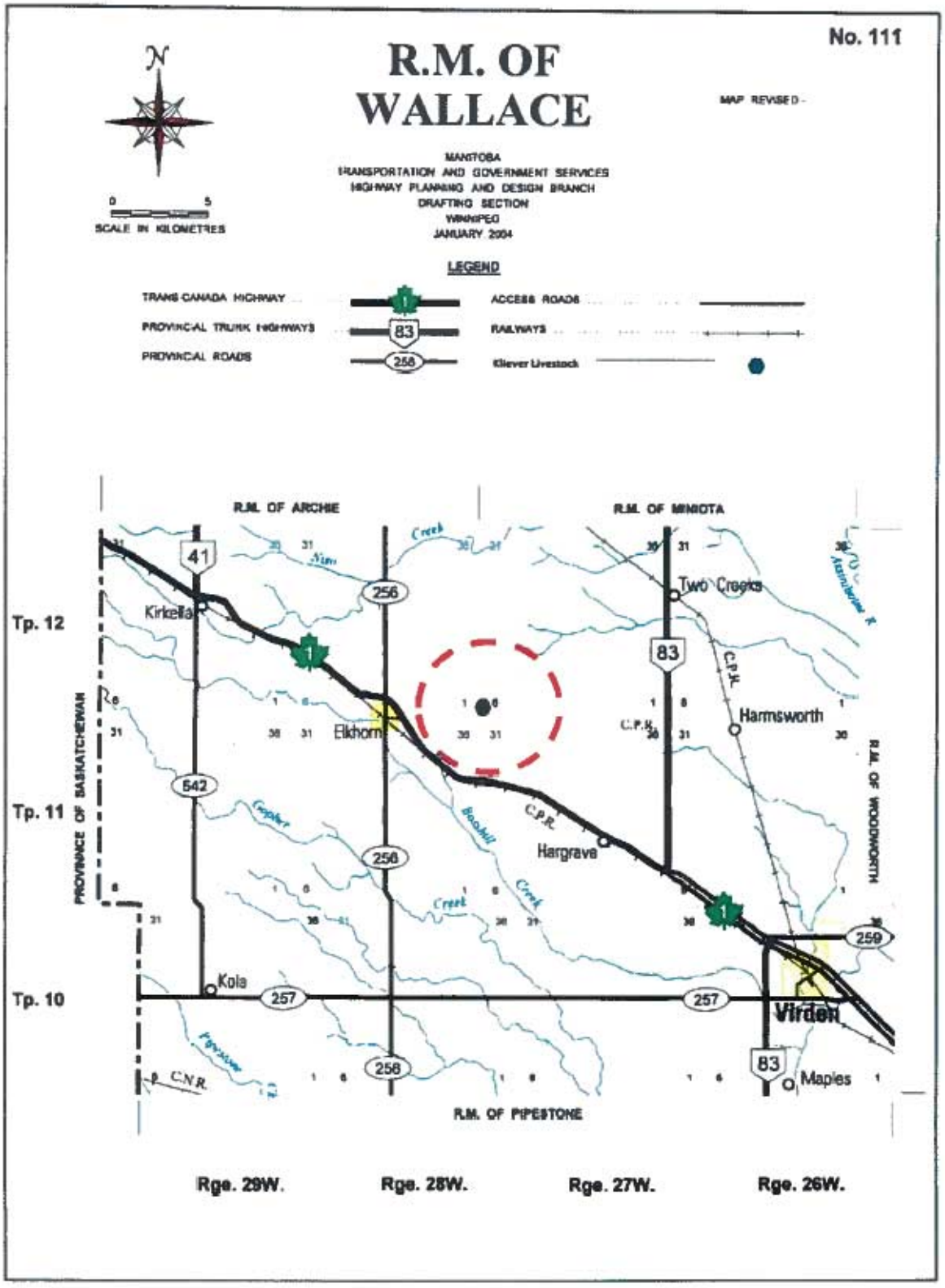
Municipal tax roll number(s): 0166800.000

Show the location of the operation (project site) on a location map. (See **Location Map** for example).

☒ Location Map attached

June 19 2015

Location Map
"Kliever Livestock"
SW-06-12-27-WPM
R.M. OF WALLACE-WOODWORTH



4.0 Nature of Project

☐ **New operation**

☒ **Expansion of existing operation**

State if any existing buildings will be replaced or demolished. If existing buildings will be reused or expanded, state how they will be reused or expanded.

Existing pens and buildings will continue to be used as they are. Expansion pens and shelter will be added to the existing. Project to be built in 3 Phases with certification for use at the end of each Phase.

5.0 Proposed Type and Size of Operation

State the proposed type and size of the operation. (See **Animal Units Calculation Table**.)

Type of operation (Column B from Animal Units Calculation Table)	**Existing number of animals** (Column C from Animal Units Calculation Table)	**Total Animal Units** (Column F from Animal Units Calculation Table)
Backgrounder	595 head	2000 Animal Units
Summer Pasture	475 head	125 Animal Units

☒ Animal Units Calculation Table attached

6.0 Animal Confinement Facilities

Outdoor Confined Livestock Area

To ensure that it can be built in a way that the environment is protected, a permit is required for construction and expansion of **confined livestock areas** for operations with 300 Animal Units or more. Permits are required by the **Livestock Manure and Mortalities Management Regulation** (MR 42/98), under *The Environment Act*.

Confined Livestock Area: ☐ outdoor seasonal feeding area ☒ feedlot ☐ not applicable

Indoor Barn/Animal Housing

Indoor Animal Housing: ☐ barn ☐ other (describe) _____ ☒ not applicable

Animal Units Calculation Table

A	B	C	D	E	F	G
Animal Type	Type of Operation	Existing Number of Animals	Proposed Additional Number of Animals	Animal Units per Head	Total Animal Units	Annual Confinement Period (Days)
Dairy [1]	Mature cows (lactating and dry) including associated livestock			2	-	
	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	-	
	Backgrounder	595	3,405	0.5	2,000.00	240
	Summer pasture / replacement heifers	475	- 275	0.625	125.00	0
	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 AUs	2,125.00	

Footnotes:

[1] 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 your
Manitoba Agriculture, Food and Rural Initiatives GO office to determine the animal units per head.
www.gov.mb.ca/agriculture/contact/agoffices.html

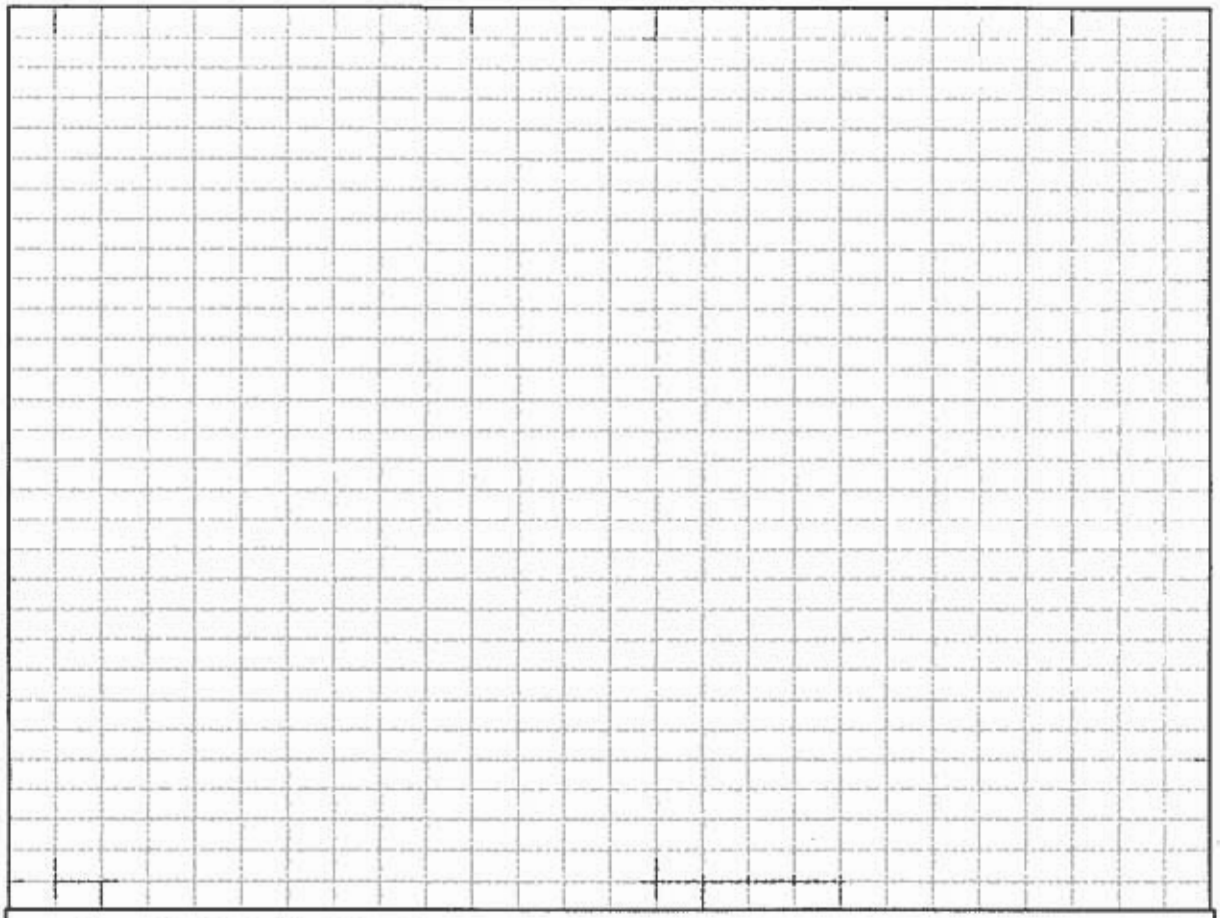
A permit under the Livestock Manure and Mortalities Management Regulation is not required for an indoor housing area or barn unless there is a manure storage facility within the building (an under barn storage capable of storing manure for 30 days or more).

Show all existing, proposed buildings and additions to existing buildings on the project site plan. See **Project Site Plan example** and the Project ***Site Plan Guide*** for help creating your site plan.

☒ Project Site Plan attached

PROJECT SITE PLAN GUIDE

* Please see attached.



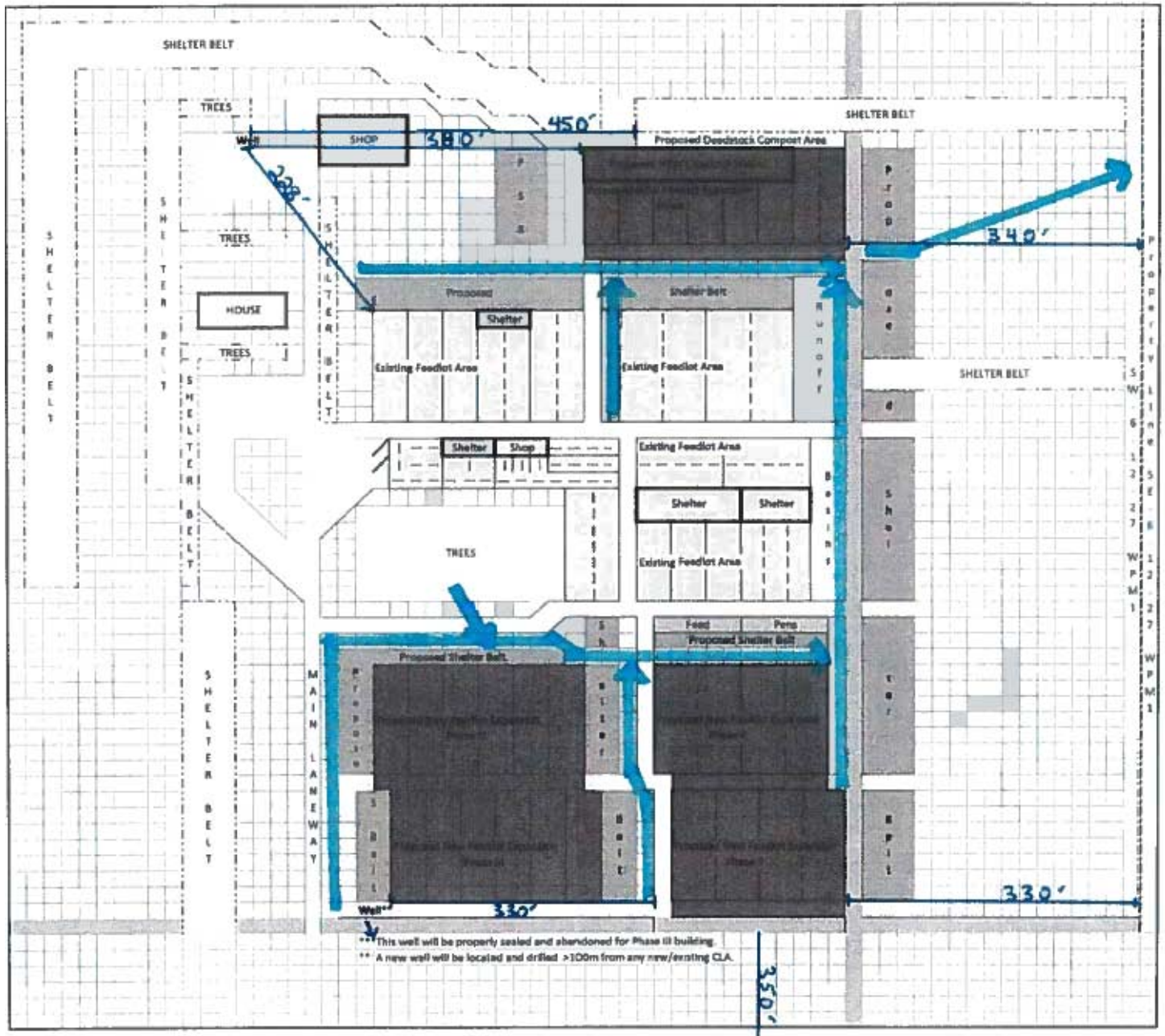
Please indicate the following:

1. Approximate distances between existing and proposed animal confinement and manure storage facilities and dwellings, shelterbelts, manure storage, water source locations, drainage patterns, water courses, bedrock outcrops, sinkholes, gravel pits, quarries, and existing and abandoned well(s) or spring(s), property lines
2. Approximate distance between proposed dead animal disposal site and water courses
3. Property dimensions
4. Municipal or provincial roads and provincial trunk highways
5. Drainage patterns
6. Scale size (Suggested scale: one square = 50 feet/15 metres)

Please see Project Site Plan Example for assistance.

Please include an ortho (aerial) photo of the project site.

Project Site Plan Guide



= water drainage

= Proposed CLA 'NEW'

= Existing CLA

7.0 Environmental Farm Planning

Environmental farm planning is a voluntary, confidential self-assessment process designed to help farm managers identify the environmental strengths and weaknesses of their operations.

Do you have an **Environmental Farm Plan** ☒ yes ☐ no

If so, is it current (completed within past 5 years) ☐ yes ☒ no (2005)

8.0 Water

Project Sites Unsuitable for Development

To protect water quality, the **Nutrient Management Regulation** (MR 62/2008), under *The Water Protection Act*, prohibits the set up or expansion of nutrient generating facilities in Nutrient Management Zone 4 (Agriculture Capability Class 6, 7 and unimproved organic soils) and Nutrient Buffer Zones. Nutrient generating facilities include barns, confined livestock areas and manure storage facilities.

Nutrient Buffer Zone as defined in section 3(3) of the regulation includes areas of land along water bodies such as rivers, lakes, streams and drains.

The proposed indoor housing area, barn, confined livestock area and/or manure storage facility:

will ☐
will not ☒

be located within Nutrient Management Zone 4 (Class 6, 7 and unimproved organic soils) or any Nutrient Buffer Zone.

Determine the agriculture capability class(es) of the project site, and its limitations. This information is available from Manitoba Agriculture, Food and Rural Development (MAFRD) at 204-945-3869 in Winnipeg. Alternatively, use the following link:
Land Based Calculator.

Water Source

To be sustainable, a livestock operation must have access to a sufficient quantity and quality of water for livestock.

Water source for operation:

	☐ pipeline (public)	☐ water co-operative
* To be constructed prior to Phase III	☒ proposed well	☒ existing wells (2)
	☐ river	☐ lake
	☐ dugout (dimensions : ____ x ___ x ____)	

If using an existing well, provide a copy of the water well log and logs for other wells on the property. Logs can be obtained from Manitoba Conservation and Water Stewardship by calling (204) 945-7418 in Winnipeg; 1-800-214-6497 toll free.

Print Close

From: **Tattersall, Richard (CWS)** (Richard.Tattersall@gov.mb.ca)
Sent: June-23-15 3:58:56 PM
To: kenraefarms@hotmail.com (kenraefarms@hotmail.com)
3 attachments
Kliever1.txt (1.5 KB) , Kliever2.txt (1.0 KB) , Kliever3.txt (1.2 KB)

Ken,

Attached is your well log. Below is a link to the Manitoba Conservation Groundwater website link for a publication called "Well Aware". It is an excellent resource for people wanting to understand the basics of well construction and general maintenance.

Well Aware

Lastly is a link to our fact sheets that discuss various aspects regarding wells, from shock chlorination to pitless upgrades

Private Well Fact Sheets

Regards,

Richard

Richard Tattersall

Well Drilling Liaison Officer

Manitoba Conservation and Water Stewardship

Groundwater Management

Box 18, 200 Saulteaux Crescent

Winnipeg MB R3J 3W3

(204) 794-7723

Manitoba
Conservation and Water Stewardship

Well log 1

line
Well PID: 182600
Location: SW6-12-27W
UTMX:344818.8 UTMY:5538271.1 XY Accuracy:1 EXACT [<5M] [GPS]
UTMZ:497 Z Accuracy:4 FAIR - Shuttle at Centroid
Owner: K KLIEVER
Driller: Watkins & Argue Construction Co.
Well Name:
Date Completed: 2014 Jul 23
Well Use: PRODUCTION
Water Use: Domestic, Livestock
Well Status: ACTIVE Aquifer: SAND AND GRAVEL

REMARKS:
PUMPED BY AIR LIFT. 2 SETS OF GUIDES, 1 PVC CAP, CHLORINE.

WELL LOG (Imperial units)

From	To(ft.)	Log
0.0	10	BROWN TILL
10.0	12	GREY TILL
12.0	20	SILTY GREY SAND AND CLAY
20.0	31	COARSE SAND AND ROCKS
31.0	40	SHALE

WELL CONSTRUCTION

From	To(ft)	Const.Method	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0.0	25.0	CASING	5.0				PVC
25.0	30.0	PERFORATIONS	5.0		0.015		STAINLESS STEEL
22.0	32.0	GRAVEL PACK				NO. 20-40	SILICA S.
15.0	20.0	CASING GROUT				3/8 IN.	BENTONITE

Top of Casing: 2.0 ft. above ground

PUMPING TEST
Date : 2014 Jul 23 Pumping 50.0 Imp. gallons/minute
Water level before test : 6.0 ft below ground
Water level at end of test :
Test duration:
Test Zone: from 25.0 ft to 30.0 ft

Well log 2

line
Well PID: 182694
Location: SW6-12-27W
UTMX:345090.2 UTMY:5538473.6 XY Accuracy:1 EXACT [<5M] [GPS]
UTMZ:497 Z Accuracy:4 FAIR - Shuttle at Centroid
Owner: K KLIEVER
Driller: Watkins & Argue Construction Co.
Well Name:
Date Completed: 2014 Jul 23
Well Use: TEST WELL
Well Status: SEALED Aquifer: SAND AND GRAVEL

REMARKS:
FROM 39.5 - 80 TILL (GREY): TESTED 19 -24 1.25 GPM WITH SCREEN AND 20/40 SILICA SAND. PULLED OUT. SEALED 1 BAG 3/8 HOLEPLUG (BENTONITE)

WELL LOG (Imperial units)

From	To(ft.)	Log
0.0	5	BROWN TILL
5.0	9	SAND AND GRAVEL
9.0	10	GREY TILL
10.0	14	SHALE GRAVEL
14.0	15	CLAY
15.0	24	COARSE GRAVEL
24.0	39	GREY TILL
39.0	39.5	SAND AND GRAVEL
39.5	80	TILL - GREY

WELL CONSTRUCTION
Top of Casing:

Well log 3

line
Well PID: 37448
Location: SW-6-12-27W
UTMX:344680.1 UTMY:5538544.9 XY Accuracy:UNKNOWN
Owner: K KLIEVER
Driller: COSENS DRILLING LTD.
Well Name:
Date Completed: 1979 Oct 05
Well Use: PRODUCTION
Water Use: Domestic, Livestock
Well Status: UNKNOWN Aquifer: SAND AND GRAVEL

REMARKS:

WELL LOG (Imperial units)

From	To(ft.)	Log
0.0	11	BROWN CLAY
11.0	39	GREY CLAY
39.0	51	GRAVEL
51.0	60	GREY CLAY WITH ODANAH SHALE

WELL CONSTRUCTION

From	To(ft)	Const.Method	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0.0	41.0	casing	4.0			INSERT	PLASTIC
41.0	51.0	perforations	4.0		0.018	WIRE WOUND	S. S.
0.0	0.0	gravel pack					GRAVEL

Top of Casing: 0.0 ft. above ground

PUMPING TEST
Date :
Pumping 30.0 Imp. gallons/minute
Water level before test : 16.0 ft below ground
Water level at end of test :
Test duration: : :00

Use the Manure Application Field Characteristics Table to determine the following:

Total suitable area available for manure application	1374 Ac

☒ Manure Application Field Characteristics Table attached

Copies of soil test reports that are no more than 12 months old must also be included with this submission.

☒ Soil test reports for the required area for manure application attached.

Land Required for Manure Application

Long term, land base requirements for manure application are calculated based on estimates of the quantity of nutrients (nitrogen and phosphorus) excreted by livestock and the removal of nutrients by the proposed crops.

Phosphorus

The quantity of phosphorus excreted by the livestock depends on the type, number and size of livestock, the quantity and availablility of phosphorus fed to the livestock and the amount retained by the livestock.

The removal of phosphorus by crops depends on the crops grown and the historical crop yield averages. (See the Crop Rotation Table).

The Livestock Manure and Mortalities Management Regulation requires that "sufficient land is available to the operator to implement an appropriate manure management plan" before Manitoba Conservation and Water Stewardship will issue a permit for a manure storage facility.

"*Certain Areas*" are defined by the Livestock Manure and Mortalities Management Regulation (M.R. 42/98) as areas where the amount of phosphorus in the manure produced annually by livestock in an area of not less than 93.24 km^2 is greater than two times the annual crop removal rate of P_2O_5 in that area. Currently the rural municipalities of Hanover and La Broquerie are considered to be "*certain areas*".

A livestock operation is considered to be located within a "*certain area*" if any part of the operation is located within the "*certain area*". This may include, but not limited to, barn(s), confined livestock area(s), field storage location(s), manure storage facility(ies), and/or spread filed(s).

MANURE APPLICATION FIELD CHARACTERISTICS TABLE

	A	B	C	D	E	F	G	H	I	J	K
Field	Legal Description	Rural Municipality	O/L/A	Total Acreage	Setbacks, including features	Net Acreage for Manure Application	Agriculture Capability Class and Subclass	Soil Nitrate (lb/acre) 0-24 inches	Soil Phosphorus (ppm Olsen P) 0-6 inches	Development Plan Designation	Zoning
1	SW-6-12-27	Wallace	O	160	45 – yard,wetland	110	2T	14	22	Resource Ag BL41	Ag 80 By-law 1866
2	NW-5-12-27	Wallace	A	160	52 – trees, wetland	108	2T	10	5	Resource Ag BL41	Ag 80 By-law 1866
3	SE-7-12-27	Wallace	A	160	7 – trees, wetland	153	2T	22	10	Resource Ag BL41	Ag 80 By-law 1866
4	SW-7-12-27	Wallace	A	160	16 – trees, wetland	144	2T	27	7	Resource Ag BL41	Ag 80 By-law 1866
5	SE-1-12-28	Wallace	O	160	5 – wetland	155	2T	8	4 ½	Resource Ag BL41	Ag 80 By-law 1866
6	SW-1-12-28	Wallace	O	160	18 – wetland	142	2T	10	2 ½	Resource Ag BL41	Ag 80 By-law 1866
7	NE-35-11-28	Wallace	A	160	11 – 1st order, wetland	149	2T	33	1	Resource Ag BL41	Ag 80 By-law 1866
8	NE-22-11-28	Wallace	A	160	17 – 3rd order, wetland	143	3T	10	1	Resource Ag BL41	Ag 80 By-law 1866
9	SE-22-11-28	Wallace	A	160	18 – 1st order, wetland	142	3T	10	5	Resource Ag BL41	Ag 80 By-law 1866
10	NE-15-11-28	Wallace	A	160	32 – 1st order, trees	128	3T (55ac) + 4T (73ac)	14	7 ½	Resource Ag BL41	Ag 80 By-law 1866
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
					Total Net Acreage for Manure Application:	1374					

A. Enter the legal description for each parcel of land that will receive manure: Sec, Twp, Rge or River Lot (including parish).
B. Identify the Rural Municipality in which the parcel is located.
C. Indicate how the land has been secured for manure application: O – Own / L – Lease / A – Agreement
D. Enter the total acreage for the parcel.
E. Enter setbacks from surface water or groundwater features that reduce the land available for manure application; include identification of type of feature (e.g. 8m. Order 3 drain).
F. Enter the net long-term acreage available for manure application for the parcel after taking into account setbacks and excluding Class 6, 7 and unimproved organic soils.
G. Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
H. Provide soil test results for nitrate-N in lb/ac at the 0-24 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing laboratory
I. Provide soil test results for phosphorus ppm Olsen P at 0-6 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing laboratory.
J. Please indicate the Development Plan and its by-law number in addition to the map designation for each field
K. Please indicate the Zoning By-law and its by-law number in addition to the zoning for each field

ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant

LINCOLN FARM SUPPLY
BOX 370
MARYFIELD,SK S0G 3K0
Phone 306-646-2161
Fax 306-646-4411
Email lfsmg@sasktel.net

Client Information

KIRK KLIEVER

Sample / Field Information.

Crop Year	2016
Field Name	
Legal Location	NW 5 12 27 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

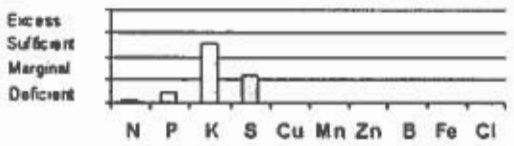
Sample ID 1390443 Date Sampled 25-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	E C 1S 2W (mS/cm)	E C Calc Sat Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	7.9	0.2	0.5	Non Saline											
0-24	Clay Loam	8.3	0.6	1.3	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	3	10	434	12						
0-24	10			>173						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture ☐ Actual: _____ ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.6 in. of ppt - 25% chance of this ppt.	80-90	40-45	0 or 15	10-15						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	75-85	35-40	0 or 15	5-10						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	65-75	20-25	0-0	0-10						
11.9% Protein											
3 ton/ac	10.1 in. of ppt - 25-50% chance of this ppt	80-90	35-40	0 or 15	5-10						
10.3% Protein											

User Specified Target Yield of 3 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils.

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown.

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant:

LINCOLN FARM SUPPLY
BOX 370
MARYFIELD,SK S0G 3K0
Phone: 306-646-2161
Fax: 306 646-4411
Email:lfsm@sasktel.net

Client Information:

KIRK KLIEVER

Sample / Field Information:

Crop Year	2016
Field Name	
Legal Location	SE 7 12 27 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

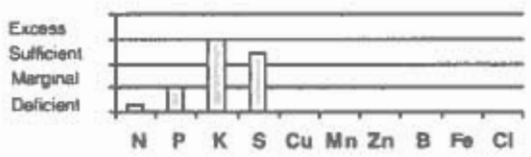
Sample ID 1390444 Date Sampled 25-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S:2W	E.C. 1S:2W (mS/cm)	E.C. Calc.Sat.Extr. (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.1	0.3	0.7	Non Saline											
0-24	Clay Loam	8.4	0.5	1.1	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	8	20	>600	>48						
0-24	22			>173						



ALS Laboratory Group

NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac 10.1% Protein.	10.6 in. of ppt - 25% chance of this ppt.	70-80	30-35	0 or 15	0-0						
2.5 ton/ac 11.0% Protein.	8.0 in. of ppt - 50% chance of this ppt.	65-75	25-30	0 or 15	0-0						
1.8 ton/ac 11.9% Protein.	5.1 in. of ppt - 75% chance of this ppt.	55-65	15-20	0-0	0-0						
4 ton/ac 10.1% Protein.	14.3 in. of ppt - <25% chance of this ppt.	115-125	30-35	0 or 15	0-0						

User Specified: Target Yield of 4 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils.

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown.

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

Loginnum: L125413

Printed:15-Jul-15 11:35 AM

ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant
LINCOLN FARM SUPPLY
BOX 370
MARYFIELD,SK S0G 3K0
Phone 306-646-2161
Fax 306-646-4411
Email lfsm@sasktel.net

Client Information:
KIRK KLIEVER

Sample / Field Information:

Crop Year	2016
Field Name	
Legal Location	SW 7 12 27 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

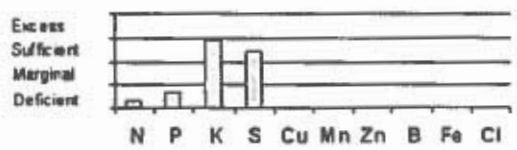
Sample ID 1390437 Date Sampled 25-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	E.C 1S 2W (mS/cm)	E.C. Calc Sat.Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.0	1.2	2.8	Slight											
0-24	Clay Loam	8.6	1.6	3.5	Slight											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	8	14	565	>48						
0-24	27			>173						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.6 in. of ppt - 25% chance of this ppt.	70-80	30-35	0 or 15	0-0						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	65-75	25-30	0 or 15	0-0						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	55-65	15-20	0-0	0-0						
11.9% Protein											
4 ton/ac	14.3 in. of ppt - <25% chance of this ppt.	115-125	30-35	0 or 15	0-0						
10.1% Protein											

User Specified: Target Yield of 4 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

Loginnum L125413

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ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant
LINCOLN FARM SUPPLY
BOX 370
MARYFIELD,SK S0G 3K0
Phone 306-646-2161
Fax: 306-646-4411
Email lfsm@sasktel.net

Client Information
KIRK KLIEVER

Sample / Field Information

Crop Year	2016
Field Name	
Legal Location	SW 6 12 27 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

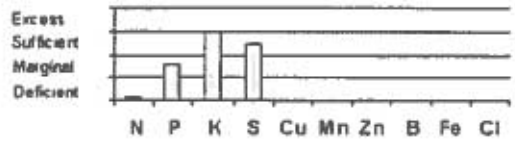
Sample ID 1390441 Date Sampled 25-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	E.C 1S 2W (mS/cm)	E.C. Calc Sat Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.1	0.3	0.7	Non Saline											
0-24	Clay Loam	8.3	0.4	0.9	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	4	44	>600	>48						
0-24	14			>173						



ALS Laboratory Group

NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.6 in. of ppt - 25% chance of this ppt.	80-90	20-25	0 or 15	0-0						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	75-85	15-20	0 or 15	0-0						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	65-75	5-10	0-0	0-0						
11.9% Protein											
4 ton/ac	14.3 in. of ppt - <25% chance of this ppt.	125-135	20-25	0 or 15	0-0						
10.1% Protein											

User Specified Target Yield of 4 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown

K2O recommendations <30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate

Olsen extraction method used for Phosphorus analysis.

Loginnum L125413

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ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant
LINCOLN FARM SUPPLY
BOX 370
MARYFIELD SK S0G 3K0
Phone 306-646-2161
Fax: 306-646-4411
Email lfsm@sasktel.net

Client Information
KIRK KLIEVER

Sample / Field Information

Crop Year	2016
Field Name	
Legal Location	SE 1 12 28 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

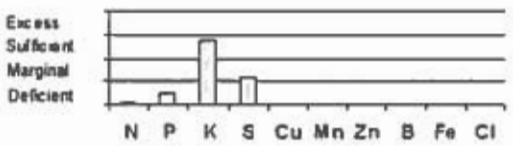
Sample ID 1390438 Date Sampled 26-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	EC 1S 2W (mS/cm)	EC Calc Sat Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Base Saturation Ca	Mg	K	Na	Cu	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.1	0.2	0.5	Non Saline											
0-24	Clay Loam	8.6	0.2	0.4	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	3	9	494	12						
0-24	8			20						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture ☐ Actual: _____ ☑ Typical 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac 10.3% Protein	10.6 in. of ppt - 25% chance of this ppt.	80-90	40-45	0 or 15	10-15						
2.5 ton/ac 11.0% Protein	8.0 in. of ppt - 50% chance of this ppt	80-90	35-30	0 or 15	5-10						
1.8 ton/ac 11.9% Protein	5.1 in. of ppt - 75% chance of this ppt	65-75	20-25	0-0	0-10						
4 ton/ac 10.1% Protein	14.3 in. of ppt - <25% chance of this ppt.	125-135	40-45	0 or 15	10-15						

User Specified: Target Yield of 4 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K_2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils.

The P_2O_5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P_2O_5 rate should be 2 times that shown.

K_2O recommendations: < 30 lbs/ac are for seed placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant
LINCOLN FARM SUPPLY
BOX 370
MARYFIELD SK S0G 3K0
Phone 306-646-2161
Fax 306-646-4411
Email lfsm@sasktel.net

Client Information
KIRK KLIEVER

Sample / Field Information

Crop Year	2016
Field Name	
Legal Location	SW 1 12 28 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

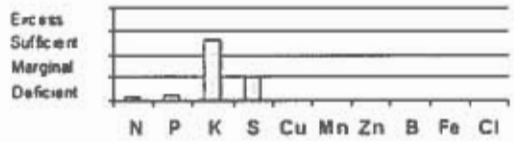
Sample ID 1390439 Date Sampled 26-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	EC 1S 2W (mS/cm)	EC Calc Sat Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.0	0.2	0.5	Non Saline											
0-24	Clay Loam	8.5	0.4	0.9	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	3	5	450	10						
0-24	10			>173						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.5 in. of ppt - 25% chance of this ppt	80-90	40-45	0 or 15	10-15						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	75-85	35-40	0 or 15	5-10						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	65-75	20-25	0-0	0-10						
11.9% Protein											
3 ton/ac	10.1 in. of ppt - 25-50% chance of this ppt.	80-90	35-40	0 or 15	5-10						
10.3% Protein											

User Specified Target Yield of 3 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K_2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils

The P_2O_5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P_2O_5 rate should be 2 times that shown

K_2O recommendations < 30 lbs/ac are for seed placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate

Olsen extraction method used for Phosphorus analysis.

Loginnum L125413

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ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant

LINCOLN FARM SUPPLY

BOX 370

MARYFIELD SK S0G 3K0

Phone: 306-646-2161

Fax: 306-646-4411

Email lfsm@sasktel.net

Client Information:

KIRK KLIEVER

Sample / Field Information

Crop Year	2016
Field Name	
Legal Location	NE 35 11 28 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

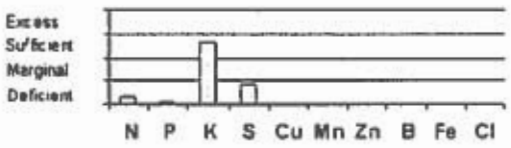
Sample ID 1390442 Date Sampled 25-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	E C 1S 2W (mS/cm)	E C Calc Sat Ext (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8 0	0 2	0 5	Non Saline											
0-24	Loam	8 0	0 4	0 9	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	6	2	457	7						
0-24	33			>192						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3 1 ton/ac	10.6 in. of ppt - 25% chance of this ppt	70-80	40-45	0 or 15	15-20						
10 1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	65-75	35-40	0 or 15	10-15						
11 0% Protein											
1 8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	55-65	20-25	0-0	5-10						
11.9% Protein											
3 ton/ac	10.1 in. of ppt - 25-50% chance of this ppt.	70-80	35-40	0 or 15	10-15						
10 3% Protein											

User Specified: Target Yield of 3 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils.

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown.

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant

LINCOLN FARM SUPPLY
BOX 370
MARYFIELD SK S0G 3K0
Phone: 306-646-2161
Fax: 306-646-4411
Email lfsm@sasktel.net

Client Information

KIRK KLIEVER

Sample / Field Information

Crop Year	2016
Field Name	
Legal Location	NE 22 11 28 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

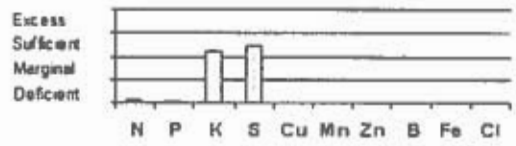
Sample ID 1390434 Date Sampled 27-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	EC 1S 2W (mS/cm)	EC Calc Sat. Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_3-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.2	0.5	1.1	Non Saline											
0-24	Clay Loam	8.5	0.4	0.9	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	4	2	303	>48						
0-24	10			>173						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture ☐ Actual: ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.6 in. of ppt - 25% chance of this ppt.	80-90	40-45	5-15	0-0						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	75-85	35-40	5-15	0-0						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	65-75	20-25	5-15	0-0						
11.9% Protein											
3 ton/ac	10.1 in. of ppt - 25-50% chance of this ppt	80-90	35-40	5-15	0-0						
10.3% Protein											

User Specified Target Yield of 3 ton/ac ☐ Irrigation

Other Recommendations And Comments

The P2O5 recommendation is based on banding or seed placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown.

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

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ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant
LINCOLN FARM SUPPLY
BOX 370
MARYFIELD SK S0G 3K0
Phone 306-646-2161
Fax 306-646-4411
Email lfsm@sasktel.net

Client Information:
KIRK KLIEVER

Sample / Field Information
Crop Year 2016
Field Name
Legal Location SE 22 11 28 W1
Soil Climatic Zone Black (MB)
GPS Reference
Acres
Previous Crop Grass-Hay
Yield
Stubble Management N/A
Rotation N/A

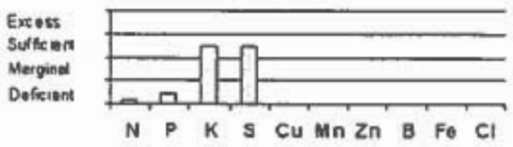
Sample ID 1390433 Date Sampled 27-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	E.C 1S 2W (mS/cm)	E C Calc Sat Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.0	0.5	1.1	Non Saline											
0-24	Clay Loam	8.0	0.8	1.8	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	6	10	382	>48						
0-24	10			>173						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.6 in. of ppt - 25% chance of this ppt.	75-85	40-45	0 or 15	0-0						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	75-85	35-40	0 or 15	0-0						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	60-70	20-25	0-0	0-0						
11.9% Protein											
3 ton/ac	10.1 in. of ppt - 25 50% chance of this ppt	75-85	35-40	0 or 15	0-0						
10.3% Protein											

User Specified: Target Yield of 3 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown.

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

ALS Laboratory Group Agricultural Services

Phone: 1-800-667-7645

SOIL TEST REPORT

Dealer / Crop Consultant
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BOX 370
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Phone 306-646-2161
Fax 306-646-4411
Email lfsm@sasktel.net

Client Information
KIRK KLIEVER

Sample / Field Information

Crop Year	2016
Field Name	
Legal Location	NE 15 11 28 W1
Soil Climatic Zone	Black (MB)
GPS Reference	
Acres	
Previous Crop	Grass-Hay
Yield	
Stubble Management	N/A
Rotation	N/A

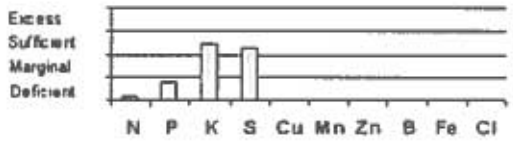
Sample ID 1390440 Date Sampled 27-JUN-15

SOIL TEST CHARACTERISTICS

Depth (inches)	Texture	pH 1S 2W	E.C 1S 2W (mS/cm)	E.C Calc.Sat Extr (mS/cm)	Salinity Rating	Organic Matter %	NH_4-N (lb/ac)	Calculated CEC meq/100g	Ca	Mg	K	Na	Base Saturation Ca	Mg	K	Na
									ppm				% of CEC			
0-6	Loam	8.2	0.2	0.5	Non Saline											
0-24	Clay Loam	8.5	0.2	0.4	Non Saline											

SOIL TEST NUTRIENT LEVELS

Depth (inches)	NO_3-N	P	K	SO_4-S	Cu	Mn	Zn	B	Fe	Cl
	lb/ac									
0-6	4	15	385	42						
0-24	14			150						



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NUTRIENT RECOMMENDATION RATES (lb/ac)

Soil Available Moisture: ☐ Actual: _____ ☑ Typical: 3.0 inches

Grass-Hay		N	P_2O_5	K_2O	S	Cu	Mn	Zn	B	Fe	Cl
3.1 ton/ac	10.6 in. of ppt - 25% chance of this ppt.	75-85	30-35	0 or 15	0-0						
10.1% Protein											
2.5 ton/ac	8.0 in. of ppt - 50% chance of this ppt.	75-85	25-30	0 or 15	0-0						
11.0% Protein											
1.8 ton/ac	5.1 in. of ppt - 75% chance of this ppt.	65-75	15-20	0-0	0-0						
11.9% Protein											
3 ton/ac	10.1 in. of ppt - 25-50% chance of this ppt.	75-85	25-30	0 or 15	0-0						
10.3% Protein											

User Specified Target Yield of 3 ton/ac ☐ Irrigation

Other Recommendations And Comments

A 0 or 15 lbs/ac K2O recommendation is made for high K soils because K may not be available to the plant in cool (particularly cool and dry) soils

The P2O5 recommendation is based on banding or seed-placement (if rate is safe). For broadcast and incorporation the P2O5 rate should be 2 times that shown

K2O recommendations < 30 lbs/ac are for seed-placement or banding, and > 30 lbs/ac are for broadcast and incorporation. The banding rate X 2 = the broadcast and incorporation rate.

Olsen extraction method used for Phosphorus analysis.

Loginnum L125413

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Source Water Analysis Reports

Annual livestock source water monitoring analysis reports must be submitted to Manitoba Conservation and Water Stewardship for any operations of 300 Animal Units or more.

If an existing livestock operation of 300 Animal Units or more, have you submitted an annual source water monitoring report for the current calendar year? ☐ yes ☒ no

Will livestock have direct access to surface water (not including dugouts)? ☐ yes ☒ no

If **yes**, identify:
Name of the surface water feature: N/A

List any steps that will be taken to prevent direct access of livestock to the water body.

Water Requirements * Application for a Water Rights Licence mailed July 8, 2015.

Protecting the interests of domestic users and the environment, in addition to existing licensees, is the intended purpose of the water rights licensing scheme.

In order to protect the sustainability of water sources, all operations using more than 25,000 litres (5,499 imperial gallons) per day must possess a Water Rights Licence required by the Water Rights Regulation (MR 126/87) under *The Water Rights Act.*

For more information on the Water Rights Licensing process, contact the Water Use Licensing Section at (204) 945-3983 in Winnipeg; 1-800-214-6497 toll free.

Water Use
To calculate the total water use, go to the **Water Requirement Calculation Table**.

Maximum daily use: 36,000 ☒ imperial gallons or ☐ litres
Maximum annual use: 13,140,000 ☐ acre-feet or ☐ cubic decameters

☒ Water Requirement Calculation Table attached

Groundwater (Contamination Risk Protection)

Improper storage and handling of manure or mortalities increases the risk of contaminating groundwater. Beneficial management practices (BMP), mitigation measures and requirements for the permit process reduce this risk. Soil testing, manure management planning and proper engineering, along with construction and management of manure storage structures reduce the risk of contaminating groundwater.

Water Requirement Calculation Table

Livestock	Number	IG/day per animal in winter	IG/day per animal in summer	IG/day (Imperial gallons per day)
Beef/Dairy/Bison				
Feeder/heifer/steer (600 lb.)	4,000	5	9	36,000
Feeder (900 lb.)		7	12	-
Feeder (1250 lb.)		10	15	-
Cow/calf pair		12	15	-
Dry cow		10	12	-
Milking cow		25	30	-
Bison		8	10	-
Horses				
Horses		8	11	-
Hogs				
Sow (Farrow/wean)		6.5		-
Dry Sow/Boar		4		-
Feeder		3		-
Nursery (33 lb.)		2		-
Chickens				
Broilers		0.035		-
Roasters/Pullets		0.04		-
Layers		0.055		-
Breeders		0.07		-
Turkeys				
Turkey Growers		0.13		-
Turkey Heavies		0.16		-
Sheep/Goats				
Sheep/Goats		2		-
Ewes/Does		3		-
Lambs/Kids (90 lb.)		1.6		-
		TOTAL (IG/day)		**36,000**

For beef, dairy, bison and horse enterprises:
Use summer numbers if appropriate for the operation.
Otherwise base projections on winter values.
Always use the greater of the two values.

Enter this number on page 7 of Application Form.

Other consumption values:

Normal household consumption:
40-55 IG/day per person or
(180-250 l/day/person)

Hydrant flow:
10 imperial GPM (45 l/min)

Unit Conversions		
Total per day	**Total per year**	**Unit**
36,000	**13,140,000**	**IG**
163,656	**59,734,440**	**litres**
0.164	**60**	**cubic decametres (dam^3)**

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

Check off the mitigation measures used for the existing components of the operation that may pose a risk of contamination. Also check off any measures that may be used with the proposed components for this expansion, if applicable:

	Existing	Proposed	
Manure is stored in a storage facility built by permit or registered by Manitoba Conservation and Water Stewardship	☐	☐	N/A
Storage includes leachate collection	☐	☐	N/A
Earthen storage has between 400 and 500 days storage	☐	☐	N/A
Steel/concrete tank has between 250 and 500 days storage	☐	☐	N/A
Manure storage facility meets required setbacks	☐	☐	N/A
Field storage (solid manure) locations are changed annually	☒	☒	
Field storage meets required setbacks	☐	☒	
All application fields are soil tested annually for nitrate-N and Olsen phosphorus	☐	☒	
All manure is applied according to a manure management plan	☐	☒	
Licensed commercial manure applicator is used to apply manure	☒	☒	
Abandoned wells have been properly sealed	☒	☒	

Other:

Building in Flood Areas

The **Livestock Manure and Mortalities Management Regulation** prohibits an operator from putting a manure storage facility within the boundaries of the 100-year flood plain elevation. **Manure storage facilities** that are constructed with protection for a flood-water level at least 0.6 meters higher than the 100-year flood water level are exempt.

The **Designated Flood Area Regulation** under *The Water Resources Administration Act* requires a Designated Flood Area Permit before a proposed structure (such as a barn) can be built within a Designated Flood Area.

The flood protection level for structures located within a Designated Flood Area is the site specific design flood level plus freeboard, as provided by the Hydraulic Forecasting Branch of Manitoba Infrastructure and Transportation. Contact the Hydrologic Forecasting Branch at (204) 945-2121 in Winnipeg: 1-800-214-6497 toll free.

The proposed site:

is ☐ is not ☒

located in a Designated Flood Area: **Red River Valley Designated Flood Area** or **Lower Red River Designated Flood Area**

Note: At the time a permit is issued, verification is needed to ensure any proposed structure(s) are located within the 100-year flood plain elevation; or at an elevation set by Manitoba Infrastructure and Transportation.

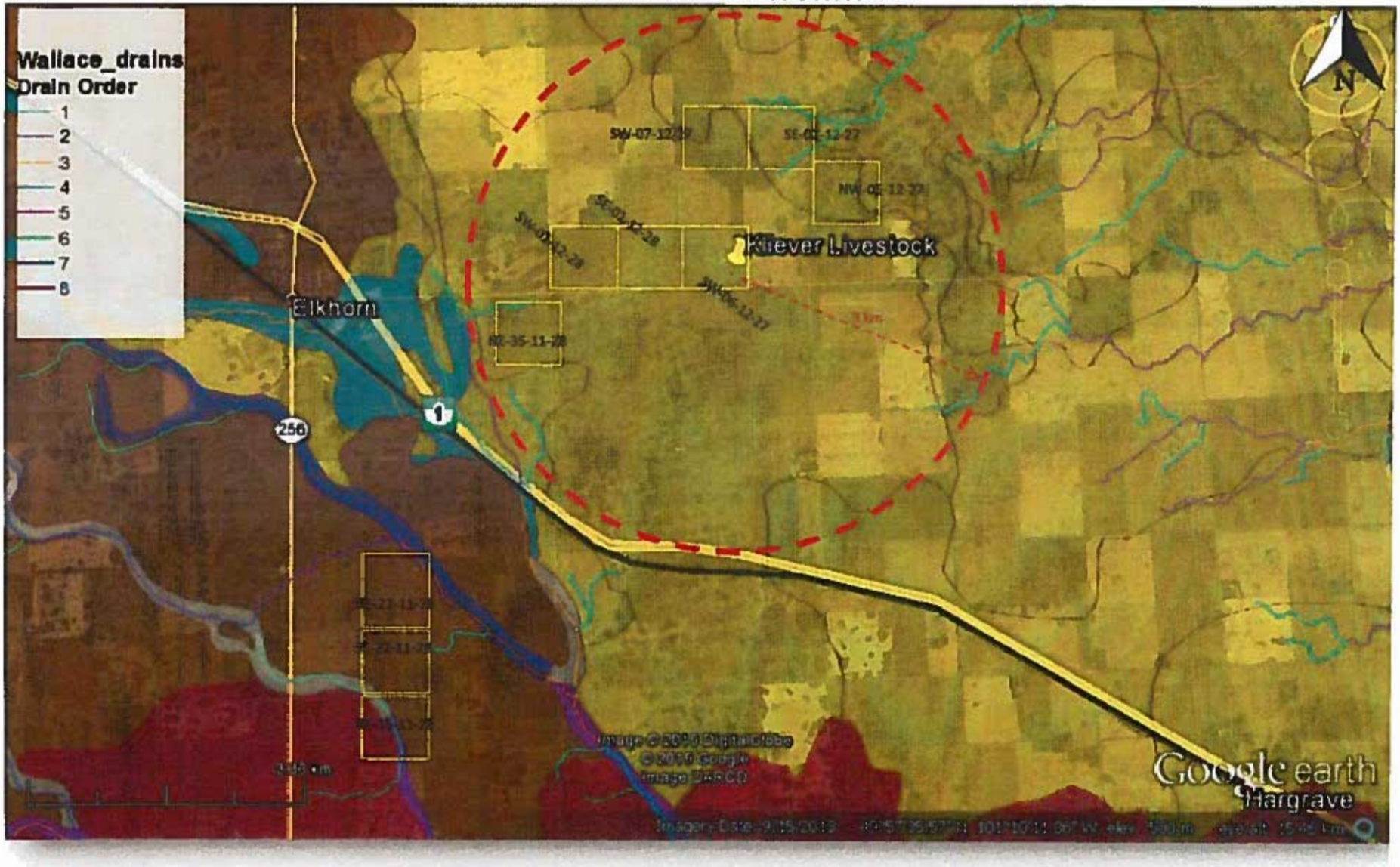
June 19 2015

Soil Class/Stream Order and Spread Field

"Kliever Livestock"

SW-06-12-27-WPM

R.M. OF WALLACE-WOODWORTH



Watershed Management Planning
Integrated watershed management planning is a co-operative effort by local residents, stakeholders and governments to create a long term plan to manage water and land-based activities for watersheds.

What are the names of the **watershed** and **sub-watershed** where the livestock operation and the fields identified for manure application are located?

Name of watershed(s): Upper Assiniboine River

Name of sub-watershed(s): Bosshill Creek

Name of **Integrated Watershed Management Plan** for the proposed project site, if applicable: _____

For more on Integrated Watershed Management Planning, call Watershed Planning and Programs at (204) 945-7408 in Winnipeg; 1-800-214-6497 toll free.

9.0 Manure

The **Livestock Manure and Mortalities Management Regulation** sets requirements for the use, management and storage of livestock manure in agricultural operations, to ensure it is handled in an environmentally sound manner. For more information on this, call Manitoba Conservation and Water Stewardship at (204) 619-2230 in Winnipeg.

Improper storage, handling and/or land application of manure can contaminate water and/or cause unacceptable odours for neighbours. The following is used to assess the manure management system.

Manure Type
The type of manure generated and used by the operation influences storage, handling and land application options available.

What type(s) of manure will be generated?

☒ solid ☐ semi-solid ☐ liquid

Manure Volume or Weight
Manure production can be estimated using the Manure Production Calculator Table. The sizing of the manure storage is the responsibility of the operator and must be constructed in accordance with the **Livestock Manure and Mortalities Management Regulation**. Design and construction of a manure storage facility is dependent on the type of structure; earthen manure storage facilities must have between 400 and 500 days capacity, a steel or concrete storage tank must have between 250 and 500 days capacity. This ensures the facility has sufficient capacity eliminating the need for winter application.

What will be the total volume or weight of manure generated annually by the livestock operation? (See **Manure Production Calculator Table**.)

liquid volume:_____ solid weight:____

☒ Manure Production Calculator Table attached

Manure Storage Type and Capacity

The type of storage system used will affect the capacity requirements for the manure storage facility or field storage area.

What type of **manure storage facility** will be used by the operation? N/A

☐ under-barn concrete ☐ **earthen manure storage** ☐ concrete tank(s)
☐ steel tank(s) ☒ **field storage** ☐ **molehill**

Provide the dimensions of the existing and/or proposed manure storage facilities, if applicable. (See **Existing and Proposed Manure Storage Facility Dimensions Table**.)

☐ Existing and Proposed Manure Storage Facility Dimensions Table attached N/A

Odour Control Measures (project site)

Barns and manure storage facilities can be significant sources of livestock odours. The use of manure storage covers and shelterbelts can reduce this, particularly for neighbours in the vicinity of the operation.

What odour control measures are you planning to use?

Manure storage cover: ☐ yes ☐ no N/A

Type of cover: _____

Shelterbelt planting: ☒ yes ☐ no ☒ existing shelterbelt

Other measures (specify): _____

Manure Treatment

Under *The Environment Act*, the director must not issue a permit for the modification, expansion, or construction of a manure storage facility accommodating an increase in the number of animal units for pigs, unless the manure is treated using anaerobic digestion or another environmentally sound treatment that is similar to or better than anaerobic digestion, according to Manitoba Conservation and Water Stewardship.

Does your proposal include anaerobic digestion or another environmentally sound treatment for manure?

☐ yes ☐ no ☒ not applicable

Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period [2] (Days) (G)	Number of Animals [3] (Capacity) (H)	Total Manure Volume (ft³) (FxGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
		References (C)	Manure Type (D)	Default Manure Production (ft³/animal/day) (E)	Operation Manure Production [1] (ft³/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				-	
			Liquid [5]	3.5				-	0.0
	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				-	
	Backgrounder (200 day)		Solid	0.73	0.73	240.00	4,000	700,800.00	
	Summer pasture / replacement heifers		Solid	0.85	0.85	105.00	200	17,850.00	
	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 (ft³) (Fl346xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
			Default Manure Production (ft³/year/bird space)		Operation Manure Production [1] (ft³/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 [8]		0.99					-	
	Roasters – floor [6]		1.16					-	
	Layers – cage [9]		2.33					-	0.0
	Layers – floor [7]		1.68					-	
	Layers – solid pack [10]		[10]					-	
	Pullets – cage [9]		0.71					-	0.0
	Pullets – floor [6]		0.75					-	
	Pullets – solid pack [8]		[10]					-	
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).

[4] Milking cows includes all lactating and dry cows.

[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/ft³.

[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/ft³.

[8] Manure removed from barn at 90% moisture content with a density of 59 lb/ft³.

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

If yes, please describe _____

Manure Application Method

The **Livestock Manure and Mortalities Management Regulation** requires the registration of annual manure management plans for new or expanding operations with 300 Animal Units or more.

Does the operation currently file an annual **Manure Management Plan** with Manitoba Conservation and Water Stewardship? (For operations with 300 Animal Units or more, only)

☐ yes ☒ no

Manure application methods and the season in which manure is applied affect odour, nutrient availability, crop response, land base requirements and the risk of water contamination.

Proposed application method:

☒ broadcast ☐ broadcast and incorporation within 48 hours ☐ injection

The **Livestock Manure and Mortalities Management Regulation** prohibits the application of manure from November 10 of one year to April 10 of the following year (winter application).

Time of year for application: ☒ spring ☒ summer ☒ fall

The **Livestock Manure and Mortalities Management Regulation** puts restrictions on fall application of manure in the Red River Valley Special Management Area.

The proposed spread fields:

are ☐

are not ☒

in the **Red River Valley Special Management Area**.

Land Available for Manure Application

The land available for manure application includes all suitable land (owned, leased or under agreement) that is available to the operation for manure application.

Under the **Livestock Manure and Mortalities Management Regulation** and the **Nutrient Management Regulation**, application of nutrients is not permitted on Agriculture Capability Class 6, 7 and unimproved organic soils (Nutrient Management Zone 4) and within Nutrient Buffer Zones.

Areas of a field that are Class 6, 7, unimproved organic soils (Nutrient Management Zone 4) or areas within the nutrient buffer zones are considered unsuitable for manure application. In addition, fields with 60 parts per million (ppm) Olsen phosphorus (P) in the top six inches (15 centimetres) of soil cannot be included in the land base calculation.

Nutrients cannot be applied within the Nutrient Buffer Zones as outlined in the Nutrient Management Regulation (62/2008) and illustrated in the **Setback Requirements From Water Features Table**.

Has the setback area for all water features been observed and excluded from land base calculations for this operation?

☒ yes ☐ no

In "*certain areas*" it is Manitoba Conservation and Water Stewardship policy to consider a manure storage facility permit if the operation shows it has access to sufficient suitable land to apply manure at a rate equivalent to one times the crop removal rate of phosphorus.

Is the livestock operation located in "*certain areas*"?

☐ yes ☒ no

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 Head Adjusted for Storage N Loss (lb N/animal)	PSDB Excreted Per Head Per Year (lb N/animal/year)
Cow Calf	Mature Cows (>2 years old)	Field Storage	40%	0	1379	1379	1379	365	1.0		365	0.0	0.0
Cow Calf	Bred Heifer (14 mo - 2 years)	Field Storage	40%	0	928	1238	1083	290	1.0	1.41	290	0.0	0.0
Cow Calf	Replacement Heifers (7 mo-14 mo)	Field Storage	40%	0	581	928	754	225	1.0	1.64	225	0.0	0.0
Cow Calf	Unweaned Calves (0-7 mo)	Field Storage	40%	0	98	581	334	210	1.0	2.38	210	0.0	0.0
Cow Calf	Bulls	Field Storage	40%	0	2100	2200	2150	365	1.0		365	0.0	0.0
Cow Calf	Mature Cows and Bred Heifers, plus	Field Storage	40%	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0
Feeder	Feedlot Cattle - long keep	Field Storage	40%	0	581	1300	941	240	1.0	3.00	240	0.0	0.0
Feeder	Feedlot Cattle - short keep	Field Storage	40%	0	975	1300	1138	115	1.0	2.60	115	0.0	0.0
Feeder	Backgrounders - pasture	Field Storage	40%	200	660	825	743	165	1.0	1.67	165	2603.8	660.8
Feeder	Backgrounders - confined	Field Storage	40%	4000	350	660	505	120	2.0	2.50	240	100400.7	35134.4

Last Revised January 21, 2015

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	2.195	ton/ac	358	10844	45577	45577
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		tons/ac		-	-	-
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	2.195	tons/ac	716	15716	53749	53749
Lentils	1.08	3.39	5.08	lb/cwt		cwt/ac		-	-	-
Oats	0.26	0.62	1.07	lb/bu		bu/ac		-	-	-
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac	300	1500	5130	5130
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		bu/ac		-	-	-
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		-	-	-
						Sub Total	1374	28060	104456	104456
						Estimated Average Removal/Uptake (lb/ac)		20.4	76.0	76.0
						Additional Acres				
						Crop Planned on Additional Acres				
						Total Suitable Acres Available for Manure	1374			

Note: Additional acres include acres that are suitable and available for manure application but are seeded to crops that are not included in the table. Include the crop to be grown in the row below.

Last revised August 20, 2014

Nutrients Excreted	lbs
Nitrogen	103296
P2O5	36155
Crop Nutrient Use	**lb/ac**
Nitrogen Uptake	76.0
P2O5 Removal	20.4
Land Base Requirements	**acres**
Acres Available	1374
Acres for Nitrogen Uptake	1359
Acres for 2 x P2O5 Removal	885
Acres for 1 x P2O5 Removal	1770

In areas which are not considered to be "*certain areas*", Manitoba Conservation and Water Stewardship may issue a manure storage facility permit, if the operation shows it has access to sufficient suitable land to apply manure at a rate equivalent to two times the crop removal rate of phosphorus.

For more information on obtaining a manure storage facility permit, please contact Manitoba Conservation and Water Stewardship, Environmental Approvals branch at (204) 945-5081.

Use the **Land Base Calculator** to calculate the minimum area required for manure application.

Total minimum area required for manure application at two times crop removal, for operations outside of Hanover and La Broquerie	Nitrogen = 1359 acres Phosphorous = 885 acres
Total minimum area required for manure application at one times crop removal, for operations within Hanover and La Broquerie AND For the long-term sustainability of operations outside of Hanover and La Broquerie	Nitrogen = 1359 acres Phosphorous = 1770 acres

For more information on completing land base calculations, call Manitoba Agriculture, Food and Rural Initiatives (MAFRI) at (204) 945-3869 in Winnipeg.

☒ Land Base Calculator attached

Land Base Requirement Summary

By comparing the land **available** for manure application with the land **required** for manure application, state whether sufficient suitable land for manure application:

☐ has not been identified

☒ has been identified for two times the crop removal rate of phosphorus (for operations outside of the RMs of Hanover or La Broquerie)

☐ has been identified for one times the crop removal rate of phosphorus (for operations within the RMs of Hanover and La Broquerie)

Long-Term Environmental Sustainability

The Government of Manitoba has included phosphorus as a nutrient by which applications of manure, synthetic fertilizer and municipal waste sludge to agricultural lands may be limited.

Over the short-term for fields with low phosphorus, regulations allow manure to be applied to meet the nitrogen requirements of the crop. This often results in over-application of phosphorus and a build-up of phosphorus in soils. When soil test phosphorus levels reach 60 ppm Olsen P, manure application rates must consider how much phosphorus will be removed in the harvested portion of the crop. At 60 to 119 ppm Olsen P, the amount of phosphorus that can be applied cannot exceed twice (two times) what the crop can remove in order to slow the build-up of soil phosphorus. Once soil test phosphorus levels reach 120 ppm Olsen P, applications of phosphorus are restricted to no more than what the crop can remove (one times) in order to stop further soil test phosphorus build-up. At 180 ppm Olsen P, no additional phosphorus may be applied.

It should be noted that soil-test phosphorus levels of 60 ppm Olsen P or greater are agronomically very high and at these levels most crops will not benefit from additional phosphorus beyond starter phosphorus. As phosphorus levels build up in soils, the concentration of phosphorus in runoff increases.

Therefore, to remain environmentally sustainable over a long-term planning horizon of 25 years or more, phosphorus applications from applied manure and other nutrient sources such as commercial fertilizers must be balanced with crop removal to avoid further build-up in soils. Consequently, sufficient land must be available in relatively close proximity to the operation to balance phosphorus applications with crop phosphorus removals (one times) so that manure treatment and export of phosphorus from the region is not required.

☒ I acknowledge that up to 1770 (acres)/hectares (one times crop removal from table above) may be required for the long term environmental sustainability of the operation.

10.0 Mortalities (Dead Animal) Disposal

The **Livestock Manure and Mortalities Management Regulation** sets requirements for the use, management and storage of livestock mortalities in agricultural operations. It helps ensure livestock mortalities are handled in an environmentally sound manner. Winter application of composted mortalities is prohibited.

Type of disposal:
- ☐ rendering
- ☒ composting
- ☐ incineration (in approved incinerator only)

Mass Mortalities

☒ A plan for **mass mortalities** is in place.

What steps will be taken in the case of mass mortalities?

① Report the situation without delay to Provincial Environment Officer
② Provide the officer with any information requested
③ Dispose of the mortalities according to the officer's instructions

---

11.0 Project Site Description: Land Use Planning Considerations

For assistance contact your **Community and Regional Planning Regional Office**.

Development Plan and Zoning Bylaw

The Planning District or Municipal Development Plan and Zoning By-law adopted under ***The Planning Act,*** set policy and regulations for the use and development of land. A proposed livestock operation must comply with the requirements of this bylaw. In the absence of a By-law, the **Provincial Planning Regulation** under ***The Planning Act*** applies.

Kliever Livestock Mass Mortalities Action Plan

Action Plan

In the event that mass mortalities exceed the normal composting capacity of Kliever Livestock, Kirk Kliever will without delay:

1) Report the situation to the Provincial Environment Officer (Peter Crocker: 204-726-6565 office, 204-761-7965 cellular)
2) Provide the officer with any information about the situation that the officer requests
3) Dispose of the mortalities according to the Director's or Provincial Environment Officer's instructions

Important Phone Numbers

204-726-6565 Office of Provincial Environment Officer – Peter Crocker

204-761-7965 Cellular of Provincial Environment Officer – Peter Crocker

204-748-2440 Town of Virden Waste Disposal Site – Rhonda Stewart

204-233-7347 Rothsay Deadstock Disposal

Development Plan

Every Development Plan must contain a livestock operation policy (LOP) that identifies areas where new or expanded livestock operations may be allowed. It must also set general standards for the location and setback of livestock operations. Identifying the Development Plan's land use designation and policies (for the planning district or municipality that affect the site) will help confirm the project site's compliance. The Development Plan designations for the spread fields (if something other than agricultural) will indicate the potential loss of the fields in the future due to possible development.

* Name of Planning District	Trans Canada West
* Development Plan by-law number	41
* Land use designation of project site	Resource Agriculture
* Livestock operation policies – quote supportive policy numbers	2.5.21, 2.5.22, 2.5.24, 2.5.25, 2.5.26, 2.5.27, 2.5.28
* Other Development Plan policies – quote supportive policy numbers	2.5.31
* Non-supportive Development Plan policies	N/A

☒ The Development Plan livestock operation policies support the size and location of the proposed operation.

☒ The Development Plan designations support the long term use of the proposed spread fields.

Zoning By-law

Identifying the zoning for the project site, the proposed spread fields and the related zoning provisions, helps determine the project's compliance and the minimum separation distances needed between the operation and property boundaries and other natural features and land uses. The zoning bylaw contains specific regulations that govern location and setback of livestock operations.

What are the minimum project site requirements stated in the Zoning By-law?

	Project site dimensions	Minimum zoning bylaw site requirements
Minimum site area	160 ac	* 80 ac
Minimum site width	2640 ft	* 660 ft
Minimum front yard	220 ft	* 125 ft
Minimum side and rear yard	960 ft x 540 ft	* 25 ft each

If any project (front, side or rear) yard site dimensions are less than the Zoning By-law minimum, a Variation Order from the Municipality will be required.

Separation Distances (Zoning Bylaw or Provincial Planning Regulation)
Using the proposed size of the operation (see **Animal Units Calculation Table**) and the type of animal housing and manure storage facility, complete the following table.

Indicate the distance from:

a. earthen manure storage facility or b. feedlot and
c. animal confinement facility or d. non-earthen manure storage facility…

…to the following land use features (if applicable)	**Indicate minimum separation distance required in the zoning bylaw or Provincial Planning Regulation (Check appropriate box(es)**		**If land use feature is less than the minimum separation distance**	
	☐ a. ☒ b.	☒ c. ☐ d.	Provide actual distance	Provide location or name of feature (e.g. Red River)
Residence/ dwelling	1320 ft	1320 ft	4,400 ft	Terrance Kreiser SE-31-11-27 W1
Designated area (non-agricultural)	2,640 ft	2640 ft	14,520 ft	LUD of Elkhorn
Surface water	328 ft	328 ft	>328 ft	Spring sloughs/drains SW-6-12-27 W1
Surface watercourse	500 ft	500 ft	11,200 ft	Spring class 2 drain NW-35-11-28 W1
Crown land	1 mile	1 mile	4 miles	SE-11-12-27 W1
Wildlife Management Area	N/A	N/A	7½ miles	Reeder WMA NW-8-13-27 W1
Livestock operation	N/A	N/A	7,100 ft	Ron Canart NE-30-11-27 W1
Other significant features/land uses	N/A	N/A	N/A	N/A

If Crown Lands are located within one mile, provide coding. Information can be obtained from the Interdepartmental Operations Crown Lands Plans through the **Manitoba Legislative Library** or contact Manitoba Conservation and Water Stewardship at (204) 619-2230.

If undesignated Crown Lands will be used for manure spreading purposes, including the laying of pipe or clearing activity, and use will require a Crown Lands General Permit disposition for the use and access of the subject Crown Lands Parcel(s).

In cases where minimum separation distances are not stated in the Zoning By-law or Development Plan, the minimum separation distances in the **Provincial Planning Regulation** apply.

Note: If any separation distance is less than the zoning by-law minimum, a Variation Order will be required from the Municipality.

Setback Distances (Livestock Manure and Mortalities Management Regulation)
Using the following table to indicate the distance from:

Feature	Structure	Minimum setback distance required	Provide actual distance (m)	Provide location or name of feature (e.g. Red River)
Surface watercourse, sinkhole, spring, or well	Manure storage facility	100 m	N/A	N/A
	Field storage	100 m	>100m	existing well(s) (moved annually)
	Composing site	100 m	140m	existing well(s)
	Confined livestock area	100 m	71 m ①	existing well
Property Line	Manure storage facility	100 m	N/A	N/A
	Composing site	100 m	100m	side property line
	Confined livestock area	100 m	100m	side property line

If any setback distances have not been met, please provide explanation below:

① Existing well is 71m from existing C.L.A. This well is situated on a hilltop with a drop of 9 3/4 feet in elevation from top of well casing to the high water mark in the nearest slough. All drainage flows away from this well in all directions. A water analysis for this well will be available.

Show: a) location of the project site, location and ownership of spread fields and b) land uses and significant features including dwellings (i) within a 1 mile radius of the project site and (ii) within and adjacent to each spread field on a Land Use & Spread Field Map. (See **Land Use & Spread Field Map Example**).

June 19 2015

Land Use and Spread Field
"Kliever Livestock"
SW-06-12-27-WPM
R.M. OF WALLACE-WOODWORTH

12.0 Truck Haul Routes and Access Points

One consideration with new or expanding livestock operations is the potential impact on existing public roads (municipal and provincial), access and the need for improvements or mitigation. Complete the following table.

Vehicle Type	Estimated Average Number of times per day accessing		Access from PTH/PR onto site will mainly require a Left or Right Hand Turn Please check one				Access onto PTH/PR from site will mainly require a Left or Right Hand Turn Please check one			
	~~Provincial Trunk~~ Highway ~~(PTH)~~ #1	Municipal ~~Provincial~~ Road ~~(PR)~~ 16 W / 66N	~~Provincial Trunk~~ Highway ~~(PTH)~~ #1		Municipal ~~Provincial~~ Road 16 W ~~(PR)~~ (66N)		~~Provincial Trunk~~ Highway ~~(PTH)~~ #1		Municipal ~~Provincial~~ Road 16 W ~~(PR)~~ (66N)	
			LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
Truck < 4500 kg	3	3		✓		✓	✓		✓	
Tractor Trailer Livestock Truck	1	1		✓		✓	✓		✓	
Other – Specify Feed Truck	1	1	✓		✓			✓		✓

Identify what roads and access points will be used for the proposed operation? (See **Truck Haul Routes and Access Points Map** for an example).

For help with mapping, contact your **Community and Regional Planning Regional Office**.

☒ Truck Haul Routes and Access Points Map attached

13.0 Conservation Data Centre Report

A Conservation Data Centre Report must be requested and the response attached to this site assessment. The request may be submitted electronically at:

www.gov.mb.ca/conservation/cdc

Were rare species identified in the Conservation Data Centre Report?

☐ Yes

☒ No

Print Close

From: **Friesen, Chris (CWS)** (Chris.Friesen@gov.mb.ca)
Sent: July-06-15 3:40:08 PM
To: 'kenraefarms@hotmail.com' (kenraefarms@hotmail.com)

Kirk

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's rare species database and found no occurrences at this time for your area of interest.

The information provided in this letter is based on existing data known to the Manitoba Conservation Data Centre 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 in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present; in many areas, comprehensive surveys have never been completed. Therefore, this information should be regarded neither as a final statement on the occurrence of any species of concern, nor as a substitute for on-site surveys for species as part of environmental assessments.

Because the Manitoba CDC's 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 pass before it is utilized.

Third party requests for products wholly or partially derived from Biotics 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 Biotics data, as follows as: Data developed by the Manitoba Conservation Data Centre; Wildlife Branch, Manitoba Conservation and Water Stewardship.

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 please contact me directly at (204) 945-7747.

Chris Friesen
Coordinator
Manitoba Conservation Data Centre
204-945-7747
chris.friesen@gov.mb.ca
http://www.gov.mb.ca/conservation/cdc/

-----Original Message-----
From:

Sent: June-23-15 11:55 AM
To: Friesen, Chris (CWS)
Subject: WWW Form Submission

Below is the result of your feedback form. It was submitted by WWW Information Request () on Tuesday, June 23, 2015 at 11:55:00

DocumentID: Manitoba_Conservation

Project Title: Kliever Technical Review/Site Assessment

Date Needed: 2015/07/02

Name: Kirk Kliever

Address: Box 182

City: Elkhorn

Province/State: Manitoba

Phone: 204-512-0269

Fax: 204-845-2091

Email: kenraefarms@hotmail.com

Project Description: Kirk Kliever is applying for a feedlot expansion through the Technical Review Committee process. Kirk would like to ensure that this feedlot expansion does not cause a concern to any rare species in the involved area.

Information Requested: Could you please provide a CDC Report identifying any rare species in the involved expansion area?

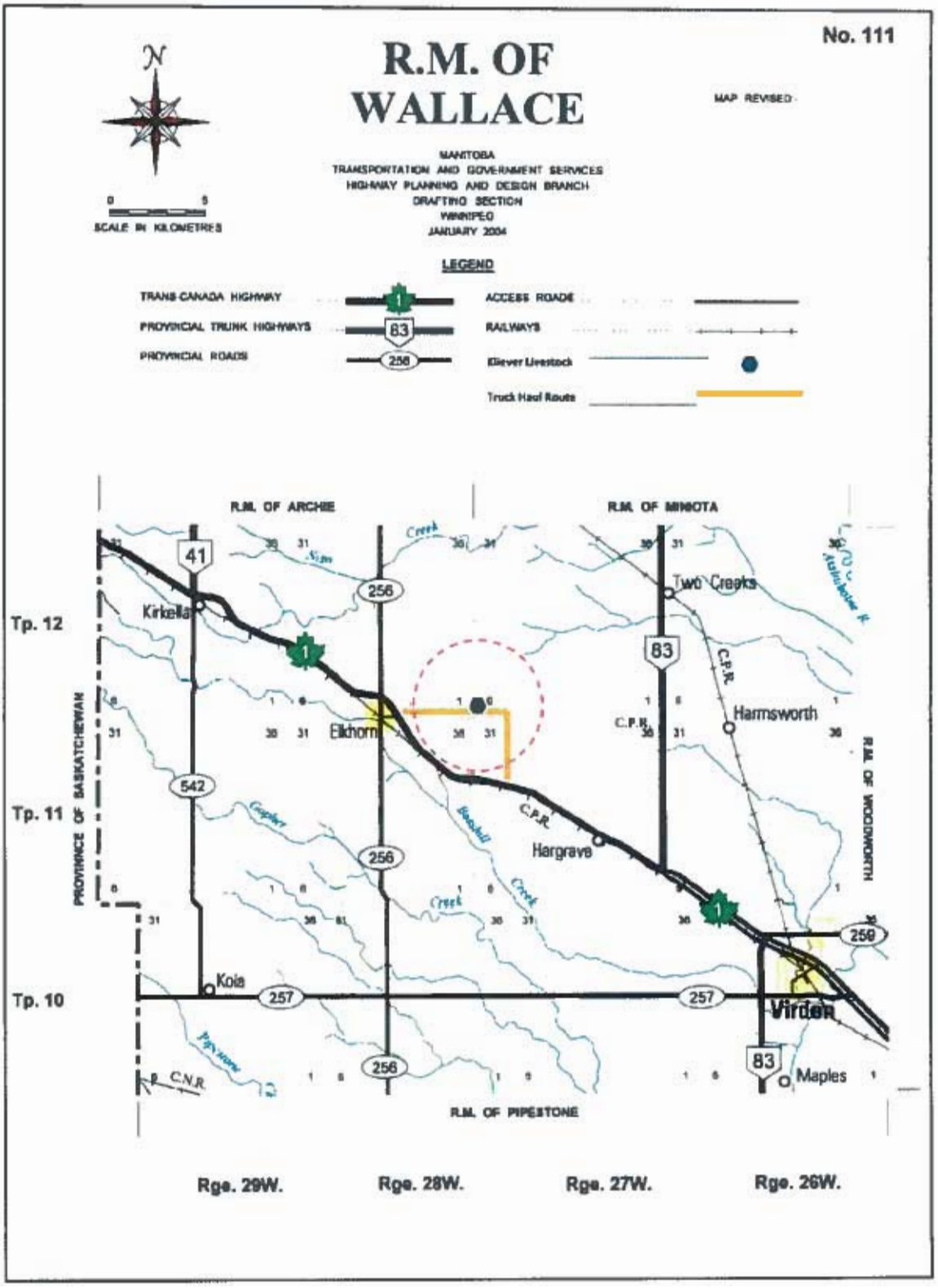
Format Requested: Please provide the information in a Microsoft Word Document by email.

Location: The feedlot expansion is proposed for the SW-6-12-27 WPM 1 near the village of Elkhorn, MB in the municipality of Wallace-Woodworth. Other involved quarter sections for spreading manure include: NW-5-12-27, SE-7-12-27, SW-7-12-27, SE-1-12-28, SW-1-12-28, NE-35-11-28, NE-22-11-28, SE-22-11-28, NE-15-11-28, all WPM 1.

action: Submit

Truck Haul Routes and Access
"Kliever Livestock"
SW-06-12-27-WPM
R.M. OF WALLACE-WOODWORTH

June 19 2015



CROP ROTATION TABLE

A	B	C	D	E
Expected Crops in the Rotation	**Acreage**	**Historical Yield**	**Units**	**Source of Yield Information**
65% Grass-35% Alfalfa Mix	1374 acres	2.195 ton/acre	Tons/acre	MASC 2004-2014 Soil Types E,F,G in RM Wallace
Total Net Acreage for Manure Application	1374 acres			

A. List all of the crop(s) to be grown in the rotation on the acreage that will receive manure.
B. Indicate the average acreage for each crop over the rotation. For example, if there are 720 suitable acres available for manure and approximately 40 these acres will be used to grow canola, enter 288. The total of column B should add up to Total Net Acreage for Manure Application provided in the Manure Application Field Characteristic Table.
C. Enter the historical yield average for each crop. Long-term yield averages can be determined using MASC data (http://www.masc.mb.ca/masc.nsf/index.html?OpenPage) or on-farm yield records. If on-farm yield records are used, please provide copies.
D. Enter the units for the yields provided (e.g. bu/acre, tons/acre).
E. Enter the source of the historical yield average provided.

Long Term Historical Yields Calculator

Land Legal	MASC Soil Zone	Crop	2004-2014 MASC Yield Data (tons/acre)	Spreadable Acres	Total Yield
SW-6-12-27	F	Alfalfa-Grass Hay	2.310	110	254.100
NW-5-12-27	G	Alfalfa-Grass Hay	1.916	108	206.928
SE-7-12-27	G	Alfalfa-Grass Hay	1.916	153	293.148
SW-7-12-27	F	Alfalfa-Grass Hay	2.310	144	332.640
SE-1-12-28	F	Alfalfa-Grass Hay	2.310	155	358.050
SW-1-12-28	G	Alfalfa-Grass Hay	1.916	142	272.072
NE-35-11-28	F	Alfalfa-Grass Hay	2.310	149	344.190
NE-22-11-28	F	Alfalfa-Grass Hay	2.310	143	330.330
SE-22-11-28	F	Alfalfa-Grass Hay	2.310	142	328.020
NE-15-11-28	E	Alfalfa-Grass Hay	2.316	128	296.448
				1374	3015.926
		Average Yield:	**2.195**		

mmpp.com Benchmarks for Better Farm Management

Web address: http://www.mmpp.com/mmpp.nsf/mmpp_browser_fertilizer.html

MMPP Fertilizer Data Browser

(Fertilizer Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: WALLACE

Crop(s) Selected: ALFALFA/GRASS MIX.

Soil Zone(s) Selected: SOIL TYPE E

Period Selected: 2004 to 2014

This search returned 10 records from the MASC database, summarized below:

Total Acres:	**4,788 acres**	
Yield per Acre:	**2.316 Tons / acre**	(2.102 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**28.6 lbs / acre**	(0.013 tonnes / acre)
Phosphorus:	**31.5 lbs / acre**	(0.014 tonnes / acre)
Potassium:	**2.0 lbs / acre**	(0.001 tonnes / acre)
Sulfur:	**0.7 lbs / acre**	(0.000 tonnes / acre)

View Raw Data

Save Raw Data | New Search

Canada MASC Manitoba

mmpp.com Benchmarks for Better Farm Management

Web address: http://www.mmpp.com/mmpp.nsf/mmpp_browser_fertilizer.html

MMPP Fertilizer Data Browser

(Fertilizer Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: WALLACE

Crop(s) Selected: ALFALFA/GRASS MIX.

Soil Zone(s) Selected: SOIL TYPE F

Period Selected: 2004 to 2014

This search returned 10 records from the MASC database, summarized below:

Total Acres:	**5,972 acres**	
Yield per Acre:	**2.310 Tons / acre**	(2.096 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**17.5 lbs / acre**	(0.008 tonnes / acre)
Phosphorus:	**28.6 lbs / acre**	(0.013 tonnes / acre)
Potassium:	**26.6 lbs / acre**	(0.012 tonnes / acre)
Sulfur:	**8.0 lbs / acre**	(0.004 tonnes / acre)

View Raw Data

Save Raw Data | New Search

Canada MASC Manitoba

mmpp.com Benchmarks for Better Farm Management

Web address: http://www.mmpp.com/mmpp.nsf/mmpp_browser_fertilizer.html

MMPP Fertilizer Data Browser

(Fertilizer Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: WALLACE

Crop(s) Selected: ALFALFA/GRASS MIX.

Soil Zone(s) Selected: SOIL TYPE G

Period Selected: 2004 to 2014

This search returned 10 records from the MASC database, summarized below:

Total Acres:	**1,953 acres**	
Yield per Acre:	**1.916 Tons / acre**	(1.739 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**32.2 lbs / acre**	(0.015 tonnes / acre)
Phosphorus:	**22.3 lbs / acre**	(0.010 tonnes / acre)
Potassium:	**23.1 lbs / acre**	(0.010 tonnes / acre)
Sulfur:	**2.9 lbs / acre**	(0.001 tonnes / acre)

View Raw Data

Save Raw Data | New Search

Canada MASC Manitoba

14.0 Supporting Documents

Check off the supporting documents included in this submission:

- [X] Contact Information and Privacy and Publication Notice
- [X] Location Map (shows proposed project within rural municipality)
- [X] Animal Units Calculation Table
- [X] Water Requirement Calculation Table
- [X] Manure Production Calculator Table
- N/A [ ] Existing and Proposed Manure Storage Facility Dimensions Tables (if applicable)
- [X] Manure Application Field Characteristics Table
- [X] Crop Rotation Table
- [X] Recent manure application field soil sample results (Nitrate- N lb/ac at 0-6 and 6-24 inch depths, Phosphorus – ppm at 0-6 inch depth)
- [X] Land Base Calculator
- [X] Project Site Plan (proposed operation showing current and proposed structures)
- [X] Land Use and Spread Field Map (location and ownership of operation, spread fields, location and distance to non-agricultural uses, development plan designation, zoning for project site and spread fields)
- [X] Truck Haul Routes and Access Points Map (with routes and access points on municipal/provincial roads and/or provincial trunk highways)
- [X] Response from the Conservation Data Centre
- [ ] Other, please specify:

____

____

____

15.0 Declaration

I do hereby verify that the information contained in the Site Assessment and all required Supporting Documents is accurate and complete to my knowledge

Date: July 18, 2015

Signature: [signature]