Manitoba
Conservation

DETAILED INSTRUCTIONS FOR COMPLETING MANURE STORAGE AND HANDLING PLANS & SCHEDULES OF THE MANURE MANAGEMENT PLAN FORM

Where a check box appears, mark the appropriate box with ☒ to indicate choice.

If you require technical assistance, please contact your local Manitoba Agriculture, Food and Rural Initiatives (MAFRI) office or Manitoba Conservation.

Important deadlines for filing your operation's Manure Management Plan (MMP)

MMPs must be submitted by July 10 for fertilization programs beginning in the fall or by February 10 for fertilization programs beginning in the spring. Plans submitted after these July or February deadlines will be subject to a $100 (plus GST) administration fee. Submit completed and signed MMPs, together with all the required analysis report(s) to:

Environmental Livestock Section, Environmental Services
Manitoba Conservation
1007 Century Street, Winnipeg, MB.
R3H 0W4
Phone: 204-945-3078
Fax: 204-948-2420

Section A – Operation Information

- Complete both the mailing and contact information for your operation.
- All registered corporations have a corporate file number, please provide if available.
- If the operation is affiliated with a corporation, list the corporation in the space provided.
- If the operation was ordered to file a MMP by Manitoba Conservation as a condition of the Order, please indicate the Order Number.

Section B - Animal Unit (A.U.) Inventory

- Use the Animal Unit Worksheet in Schedule A to determine the A.U. inventory of your operation.
  - Determine the species and type of livestock to which your livestock operation belongs.
  - Calculate and indicate the A.U.'s for each type of livestock in your operation.
  - Do not double count animals.
- Only include the A.U.'s of each livestock species that combines to a total of 300 A.U.'s or greater.
  - For example: Your inventory is, 250 A.U.'s Cow-Calf (Beef), 250 A.U.'s Backgrounder (Beef), and 150 A.U.'s Broilers (Chicken). Therefore, only the Beef A.U.'s (500) are required to be reported on your MMP.
- If you are unsure as to which type your livestock operation belongs, contact your local MAFRI office or any Manitoba Conservation office.

Section C – Manure Storage Systems Information

- Indicate all forms of livestock manure produced by livestock species of 300 A.U.'s or greater and the location(s) of all storage facilities including the anticipated storage duration.
- Include all central and temporary field storage locations.

Section D – Manure Information for Land Application

- Indicate the livestock species and number of A.U.'s calculated from Schedule A and the total volume of manure to be land applied during the crop year.
- A separate Section D must be submitted for each form of livestock manure produced by livestock species of 300 A.U.'s or greater.
- Provide the manure nutrient analysis in the space provided.
  - If the manure has been sampled, attach a copy of the lab analysis report.
  - If the manure nutrient values are estimated, please use a reliable source of information and indicate this source in the space provided.
  - If you require assistance arriving at this estimate, contact your local MAFRI office.
  - If the manure is being sampled in the field the day of application by a custom applicator, please indicate this along with the method used by the applicator.

Section E - Field Application Summary

- All information on Section E must be completed for each spread field prior to manure application.
- A separate Section E must be submitted for each species of livestock of 300 A.U.'s or greater.
- A separate Section E must be submitted for each form of livestock manure (i.e. one for solids and one for liquids).
- If no manure is to be spread in this plan year, indicate this by checking the appropriate box.

  - **Crop Year**

    - This refers to the year in which the nutrients will be taken up by the crop. Manure is to be used as a fertilizer. For example, if manure is applied in the fall of 2008 (after August 15) to a field for annual crops, the nutrients will be used as a fertilizer in the 2009 growing season. Therefore, the crop year would be 2009.

  - **Legal Land Description**

    - Indicate the legal location as ¼ Section, Township, Range, or River Lot(s) and Parish **(**e.g. SW 30-14-3W or RL 110-115 Baie St. Paul).

  - **Field Size**

    - Indicate the field acreage on which manure will be applied, considering regulated setbacks and excluding land that may not be suitable for application (e.g. low areas, brush, sink holes, etc.).

  - **Land: Own, Lease, or Agreement**

    - For each field listed, indicate if your operation owns or leases the property or has an agreement to spread manure. Use letters O, L, or A, respectively.

  - **Soil Class and Subclass**

    - This refers to the agriculture capability rating of the soil as described in *The Canada Land Inventory* Report no. 2, published in 1972 by the Government of Canada, Department of the Environment.
      - Note: Agriculture capability is not to be confused with the Manitoba Agriculture Services Risk Areas (i.e. crop insurance rating).
    - Both the soil Class (Classes 1-7) and Subclass (limiting factor(s)) must be included for the plan to be registered.
    - This information is available from your local MAFRI office or on MAFRI's website at http://geoapp2.gov.mb.ca/website/MAFRI/index3.html.

- For those operations with GIS mapping software, the information is available through the Manitoba Land Initiative website at http://mli.gov.mb.ca.

- **0 – 24 inch Soil Nitrate Nitrogen**
  - This information can be obtained from the soil analysis report.
  - Ensure proper soil testing procedures are followed, as indicated on the attached sheet.
  - A copy of the soil analysis report for each spread field must be submitted along with an updated Section E prior to manure application. It is recommended to send it at least 14 days prior to manure application to ensure that Manitoba Conservation staff has time to review the information.

- **0 – 6 inch Soil Phosphorus**
  - This information can be obtained from the soil analysis report.
  - The soil phosphorus analysis must be analyzed using the Olsen method. Please indicate this to the soil testing laboratory.
  - Ensure proper soil testing procedures are followed, as indicated on the attached sheet.
  - A copy of the soil analysis report for each spread field must be submitted along with an updated Section E prior to manure application. It is recommended to send it in at least 14 days prior to manure application to ensure that Manitoba Conservation staff has time to review the information.

- **Target Yield**
  - Indicate an anticipated target yield for the crop year that is reasonable for that site.
  - If you require assistance estimating a target yield, contact your local MAFRI office or refer to Manitoba Agricultural Services Corporation data.

- **Crop Nitrogen Recommendation**
  - This information can be obtained from the MAFRI Soil Fertility Guide (http://www.gov.mb.ca/agriculture/soilwater/nutrient/fnm02s00.html), available from your local MAFRI office or from another acceptable source.
  - If a recommendation is provided with your soil test report, use the lower of the two values.

- **Crop Removal of Phosphate**
  - This refers to the amount of phosphate that is removed in the harvested portion of the crop, taking into account the crop type and target yield.
  - If you require assistance estimating the crop removal of phosphorus, you may refer to your local MAFRI office or publications such as:
    - the MAFRI Soil Fertility Guide at http://www.gov.mb.ca/agriculture/soilwater/nutrient/fnm02s00.html, or
    - the International Plant Nutrition Institute at http://www.ppi-ppic.org/ppiweb/ppibase.nsf/$webindex/article=FC18933385256A00006BF1AD5F8663ED

- **Manure Application Rate**
  - Report your intended application rate. Your local MAFRI office, or a Certified Crop Advisor (CCA), or a Professional Agrologist (P.Ag.) can also be of assistance for this step.

- **Application Method**
  - Choose one of the following application methods and indicate the corresponding letter on Section E:
    - **A**. Broadcast and incorporate after 2 days.
    - **B**. Broadcast and incorporate after 3 days.
    - **C**. Broadcast and incorporate within 2 days.
    - **D**. Broadcast and no incorporation.
    - **E**. Broadcast and no incorporation on forages.
    - **F**. Injection.
    - **G**. Irrigation and incorporation within 3 days.
    - **H**. Irrigation and no incorporation.
      - Important: For the purpose of this plan, aerway or similar method is considered, **C**: Broadcast and incorporate within 2 days.
- **Additional Nitrogen Fertilizer**
  - If applicable, please indicate the amount of commercial fertilizer that will be applied in addition to the manure.
    - Note: Fertilizer and manure applications must not result in soil nitrate in excess of the regulated limits.
- **Additional Phosphate Fertilizer**
  - If applicable, please indicate the amount of commercial fertilizer that will be applied in addition to the manure.
    - Note: Fertilizer and manure applications must not result in soil phosphorus in excess of the regulated limits.
- **Manure Applicator**
  - Provide the applicator name, phone number, and licence number.
  - Due to recent changes to *The Pesticides and Fertilizers Control Act* regarding the *Manure Regulation*, Commercial Manure Applicators and Off-Farm Manure Applicators are required to hold a valid MAFRI applicator licence. For more information regarding licencing, contact your local MAFRI office.
- **Laboratories Acceptable to the Director**
  - As of July 2, 2009, the following laboratories (listed in alphabetical order) are approved for use in analyzing soil for both nitrate-nitrogen and phosphorus levels:
    - A & L Canada Laboratories Ltd.(519) 457-2575 (London, ON)
    - ALS Laboratory Group……1-800-668 9878 (Winnipeg, MB)
    - Agvise Laboratories……(701) 587-6010 (Northwood, ND)
      ……..(320) 843-4109 (Benson, MN)
    - Exova (formerly Bodycote)……...(780) 438-5522 (Edmonton, AB)
    - Cantest Ltd.……(204) 772-7276 (Winnipeg, MB)
    - Midwest Laboratories Canada……1-877-245-8378 (Calgary, AB)
      - Note: Western Ag Laboratories (Saskatoon, SK) can conduct the soil nitrate-nitrogen analysis. However, they **do not** analyze for soil phosphorus by the Olsen method.
  - This list is subject to change pending a comprehensive review of methods and reporting format(s).

- Consultants or other laboratories may subcontract to these laboratories. Manure Management Planners are advised to check Manitoba Conservation's Internet website at http://www.gov.mb.ca/conservation/envprograms/livestock/index.html for current listings.

- **Acceptable Soil Analysis Reports**

  - Prior to manure application, each field listed in Section E must be accompanied by an acceptable soil analysis report. Reports must be legible, display the corresponding field legal description, analyzed by a lab acceptable to the director, and indicate sample depths as 0-24" (0-60 cm) for nitrate-nitrogen and 0-6" (0-15 cm) for Olsen phosphorus. Soil analysis reports must also be recent, which includes the following scenarios:

    - Annual crop fields:
      - For soil samples taken in the spring, the soil analysis report is acceptable for manure application that spring (i.e., before the crop is seeded) and if applicable, for 'in-crop' application during the growing season.
      - For soil samples taken in the fall (i.e., after the crop is harvested), the soil analysis report is acceptable for manure application that fall or the following spring.

    - Hay/pasture fields:
      - Same as annual crop fields with one exception, if a soil sample is taken during the growing season (i.e. after spring), the soil analysis report would be acceptable for manure application that summer or that fall.

Section F - Certification

- MMPs must be signed and dated.
- If the MMP is prepared by a person other than the operator, such person must be certified to prepare plans on behalf of the operation (as per Section 13(7) of the *Livestock Manure and Mortalities Management Regulation* MR 42/98).

Traditional Composite Soil Sampling Procedure

Other acceptable soil sampling procedures include the "Benchmark" soil sampling procedure, the "Grid" soil sampling procedure and the "Landscape Directed" soil sampling procedure. Additional information on these procedures can be obtained from your local Manitoba Agriculture Food and Rural Initiatives office. **Note that soil samples for manure management plans must be to the 24 inch (2 feet) depth for nitrate-N analysis and to the 6 inch depth for soil P analysis via the Olsen (sodium bicarbonate) method.** The Soil Fertility Guide produced by Manitoba Agriculture, Food and Rural Initiatives is officially recognized by Manitoba Conservation for fertility recommendations. Whereas, recommendations from laboratories or input dealers should only be used when application rates are lower than in this guide.

Reliable results can only be made if the samples are fully representative of the field or area from which they are taken. In addition, proper sampling and sample handling procedures must be followed.

Selecting Areas to Sample

Soil sampling is normally done on an individual field basis with a single composite sample representing the whole field. Individual fields that are not uniform should be divided into smaller sampling units with a single composite sample representing each unit. The soil in each of these sampling units should have the same colour, texture, cropping history and fertilizer or manure treatments. Look for differences in slope, erosion, crop growth and yield. Any area that is different in these features and which is large enough to have manure applied at a different rate should be sampled separately. Problem areas such as saline spots, poorly drained potholes, and eroded knolls should not be sampled unless they represent a significant portion of the field. If they do, obtain separate samples. All abnormal areas such as old manure piles, burn piles, haystacks, corrals, fence rows or farmstead sites should also be avoided as well as locations of past chemical or fertilizer spills. Samples should not be taken along headlands, within 15 metres (50 feet) of field borders or shelterbelts or within 45 metres (150 feet) of built up roads. If the field has been cultivated, take the sample from the compacted soil in the wheel track.

Sample one location per 2 hectares (5 acres) to a depth of 24 inches (2 feet). In all cases, however, a minimum of 15 sample locations per individual field or sampling unit should be taken. A single composite sample is then formed from 15 or more samples.

Equipment and Supplies

Special augers or probes designed for soil sampling must be used. These may be hand or hydraulic powered and are often available from fertilizer dealers. Independent firms may also be available to custom sample fields. Use two clean, labeled plastic pails for collecting samples. Information sheets, sample containers and shipping boxes are available from the lab conducting the analysis.

Note that all mechanical and hydraulic samplers may yield poor samples on very dry or very wet soils. In all cases avoid getting the topsoil in the subsoil samples, or subsoil in the topsoil samples. For example, in very dry soils, be careful not to let topsoil spill into the hole before taking deeper samples.

Handling Samples

Take care to keep samples clean and uncontaminated. Clean the probe, take a few samples from the new field and discard them before proceeding with actual sampling. Send samples to the laboratory immediately. If this is not possible or if a delay of more than 48 hours is anticipated, cool or dry the samples. Follow these steps to dry samples:

- mix the soil in each container thoroughly, breaking lumps to less than 12 mm (1/2 inch);
- remove about 0.5 litre (1 pint) of soil and spread on a piece of clean paper;
- completely dry at a temperature of not more than 30ºC **(do not dry in an oven at a high temperature since this can change the phosphorus, potassium, and sulphur levels);**
- care should be taken to avoid contamination of the samples with foreign materials such as commercial fertilizer, manure, salt, baking soda, water, dust, etc. (e.g. samples should not be dried on old fertilizer or feed bags or in areas where fertilizers have been handled);

- a fan may be used to ensure constant air flow over samples and enhance drying.

Once the sample is thoroughly dry, fill the soil sample cartons. Label each carton with the correct field number and sample depth. Complete an information sheet for each field.

Schedule A - Animal Unit (A.U.) Worksheet

Animal Unit[1] (Inventory List)				
	A.U. Produced by One Livestock		**Number of Livestock of Each Type**	**A.U. for Each Livestock Type**
Dairy Milking Cows (including associated livestock)	2.000	X	_____	=_____
Beef Beef Cows[2], inc. associated livestock Backgrounder[3] Summer pasture/replacement heifers[3] Feedlot Cattle[4]	 1.250 0.500 0.625 0.769	 X X X X	 _____ _____ _____ _____	 =_____ =_____ =_____ =_____
Hogs Sows, farrow to finish Sows, farrow to weanling Sows, farrow to nursery Weanlings Grower/finishers Boars (artificial insemination operations)	 1.250 0.250 0.313 0.033 0.143 0.200	 X X X X X X	 _____ _____ _____ _____ _____ _____	 =_____ =_____ =_____ =_____ =_____ =_____
Chickens Broilers Roasters Layers Pullets Broiler Breeder Pullets Broiler Breeder Hens	 0.0050 0.0100 0.0083 0.0033 0.0033 0.0100	 X X X X X X	 _____ _____ _____ _____ _____ _____	 =_____ =_____ =_____ =_____ =_____ =_____
Turkeys Broilers Heavy Toms Heavy Hens	 0.010 0.020 0.010	 X X X	 _____ _____ _____	 =_____ =_____ =_____
Horses (PMU) Mares, including associated livestock	 1.333	 X	 _____	 =_____
Sheep Ewes, including associated livestock Feeder Lambs	 0.200 0.063	 X X	 _____ _____	 =_____ =_____
Other livestock or operation type - please inquire with your local Manitoba Agriculture, Food and Rural Initiatives GO Team Office.				

[1] One animal unit is defined as the number of livestock required to excrete 73 kg (160 lbs) of nitrogen in a 12 month period; please refer to the *Farm Practices Guidelines for Beef/Dairy/Hog/Poultry Producers in Manitoba* for more information.

[2] Do not include calves or replacement heifers; e.g. for 100 cow calf pairs with 30 replacement heifers, simply enter 100.

[3] Weaned calves; do not include cow numbers.

[4] Cattle on finishing rations intended for slaughter.

Schedule B – Manure Treatment

Complete this Section only if Treating Manure

Legal land Location of Facilities:		**Effluent Storage Duration (months):**	

Manure Treatment Category (choose one):

☐ Anaerobic Digestion ☐ Aerobic Digestion ☐ Mechanical Solid/Liquid Separation ☐ Chemical Solid/Liquid Separation

☐ Combustion for Energy Production ☐ Composting ☐ Other (Specify):

End use of Effluents (End Products of Treatment)

Liquid Effluent: ☐ No Liquid Effluent ☐ Land Applied (fill in Section E)	☐ Reused in the Livestock Operation Facilities ☐ Other (Specify):
Solid Effluent: ☐ No Solid Effluent ☐ Land Applied (fill in Section E)	☐ Reused in the Livestock Operation Facilities ☐ Other (Specify):

Note: If effluents are transferred to a third party, complete the transfer form.

Schedule C – Transfer of Manure or Effluent to a Second Party

Complete this Section only if Transferring Manure or Effluent to a Second Party

Manure Transfer Category	☐ **Given/sold for use as a Fertilizer on Agricultural Lands**[1] ☐ **Given/sold for use as a Compost Ingredient** ☐ **Given/sold for Greenhouse use** ☐ **Given/sold for use other than as a Fertilizer** ☐ **Pelleted and sold to Retailer** ☐ **Composted and sold to Retailer** ☐ **Other (specify):**

Details about Receiving Party[2]

Name _____ **Address** _____ _____ _____ **Tel.** _____ **Cell.** _____ **Fax** _____	**Name** _____ **Address** _____ _____ _____ **Tel.** _____ **Cell.** _____ **Fax** _____
Legal land Location of Delivery Site(s): _____ _____ _____	**Legal land Location of Delivery Site(s):** _____ _____ _____

[1] Land application of manure from this operation must be accounted for on a manure management plan filed by the receiving party.

[2] If there are more than two receiving parties, please attach additional sheets containing the appropriate information.