AUTHORIZATIONS

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QUALITY CONTROL/QUALITY ASSURANCE DOCUMENTATION

Title: Animal Feedlot Runoff Risk Index- Excel Spreadsheet Instructions for Use
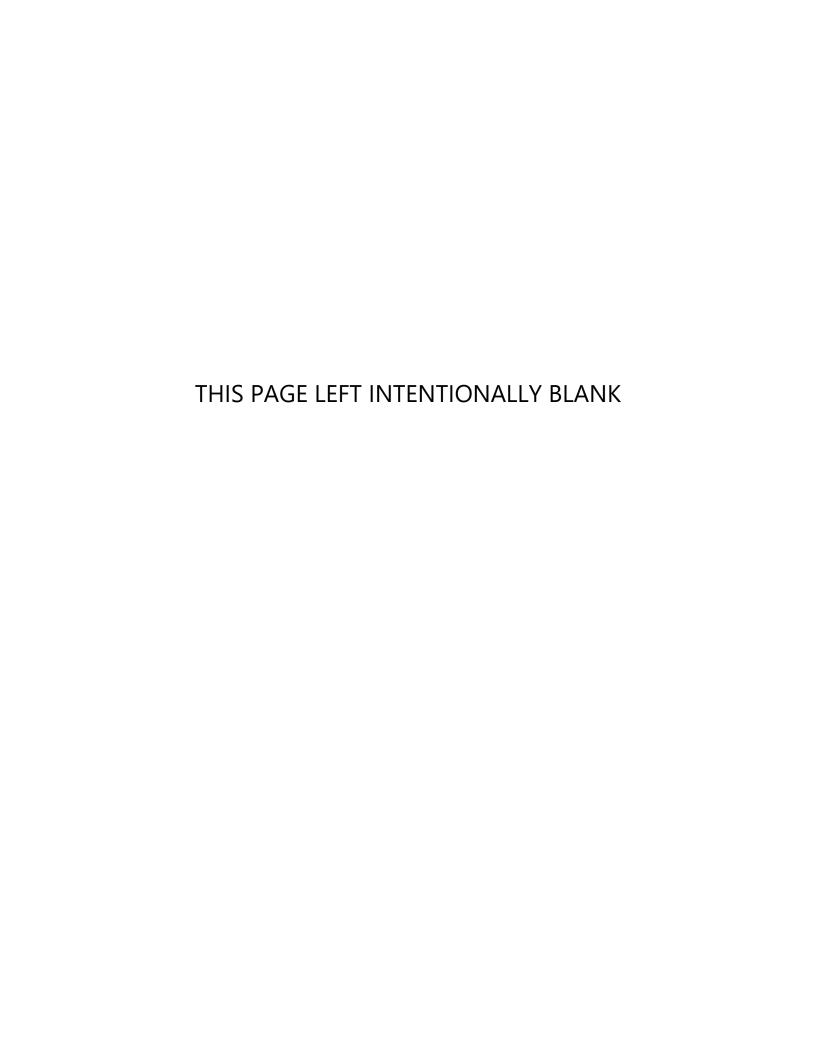Type: Standard Operation Procedure #7.20
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REVISION HISTORY

Revision	Change Description	Date	Authorization

ACKOWLEDGEMENTS

(Place to acknowledge peer reviewer)

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1.0 SCOPE AND APPLICABILITY

This document presents the North Dakota Department of Environmental Quality, Division of Water Quality's (DWQ) Standard Operating Procedure (SOP) for the ND

Animal Feedlot Runoff Risk Index Worksheet (AFRRIW). This SOP applies to all DWQ field staff, non-DWQ cooperators, and citizen volunteers.

2.0 PERSONNEL QUALIFICATIONS/RESPONSIBILITIES

All personnel completing a AFRRIW must read this SOP annually and acknowledge they have done so via a signature page (see Appendix B). New personnel must also demonstrate successful performance of the method. The signature page will be signed by both trainee and trainer to confirm that training was successfully completed and that new personnel is competent in carrying out this SOP. The signature page will be kept on-file at DWQ along with the official hard copy of this SOP.

3.0 EQUIPMENT AND SUPPLIES

- Excel Spreadsheet

4.0 PROCEDURE

General Information:

The ND Animal Feedlot Runoff Risk Index Worksheet (AFRRIW) is a modified version of the Utah AFRRIW. The weather stations, rainfall data, and hydrologic codes were changed to reflect ND data. The last update to the ND AFRRIW was on January 10, 2020.

The worksheet can be cleared of all entries except today's date by holding down the "Ctrl" key while pressing the small "c" key. Enter the landowner, location, and planners name in the first three yellow boxes. Today's date is automatically displayed but may be changed if desired. Once changed, the program will no longer display the current date. Then enter the weather station that is closest to the site being evaluated. The precipitation at that site will automatically be entered in the green box below. Enter the hydrologic unit code (HUC) for the location of the lot being evaluated. Note the little red triangles in the corners of some of the cells. Slide the mouse pointer over the top of the cells and additional information or instructions will be displayed.

The spreadsheet allows two feedlots to be evaluated. A before and after project evaluation should be made. Enter a general description of the lot being evaluated. Then enter the size of the lot in square feet and the type of surface on the lot. Next enter the type of animal in the lot, average weight of the animals, and the number of days the animals are confined. If more than one animal type is confined list the type of animal that makes up the majority of the animals. Information about the number of square feet per animal will be automatically calculated. Click on the gray tab titled, "Space Requirements" for recommendations on the desired number of square feet per animal.

Feedlot Features, Index, and Risk Level:

Using the point values obtained from Table 1, Feedlot Features, or the information in the red triangles, enter the number of points for each given feature (Containment, Distance, etc.). The computer will automatically calculate the index points and risk level for the described conditions. The spreadsheet must be used to document both the before and after project conditions for each feedlot evaluated.

Manure Management and Conservation Practices:

Enter the frequency of hauling or scraping. The frequency of scraping should be entered only if all manure is scraped into a bunker or other structure where the manure will be contained during a 25-year, 24-hour storm. Lastly, enter the conservation practices that will be installed on the lot. A list of potential practices is given at the bottom of the worksheet page.

Loading Calculations:

The computer will automatically calculate loading values. The total tons of manure is calculated first, followed by amounts of nitrogen (N), phosphorus (P), and Biological Oxygen Demand (BOD) after typical storage loss is calculated. N, P, and BOD availability is also reduced based on the frequency of hauling or scraping. Total loading values are determined by multiplying the amount of the nutrient available by the listed precipitation, lot, and risk factors. Generally, the greater the precipitation the higher the factor. The harder the cover is on the lot the greater likelihood of run off and the higher the factor. The higher the risk factor, as entered in the feedlot features, the higher the factor.

Interpretation:

An interpretation table (vulnerability table) can be found by clicking on the tab at the bottom of the screen labeled "Interpretation". This table explains the rating displayed in the row labeled "risk level". To obtain additional information or help on the use of the North Dakota Animal Feedlot Runoff Risk Worksheet contact NDDEQ Nonpoint Source Pollution Management Program staff at (701) 328-5210.

5.0 DATA AND RECORDS MANAGEMENT

Forms and notes should be stored in the appropriate project folder at DWQ.

6.0 REFERENCES

The ND AFRRIW is adapted from Utah's AFRRIW.

APPENDIX A
Excel AFRRIW Form
(Double Click Icon Below to Open AFRRIW Excel Worksheet)

Copy of
NDManureCalibratic

APPENDIX B
SOP Acknowledgement and Training Form

SOP Acknowledgement and Training Form

This SOP must be read, and this form signed annually. This form must be kept with the latest version of the SOP.

Document Title:	
Document Revision Number:	
Document Revision Date:	

Please sign below in accordance with the following statement:
"I have read and understand the above referenced document. I agree to perform the procedures described in this SOP in accordance with the document until such time that it is superseded by a more recent approved revision."

Printed Name	Signature	Date

SOP Acknowledgement and Training Form (cont.)

Trainee: Sign below to acknowledge that training on this SOP was received, understood, and all questions/concerns were addressed by the trainer.

Trainer: Sign below to acknowledge that training on this SOP was completed for the individual listed and that training is competent to perform the procedures described within.

Date of Training	Trainee Printed Name	Trainee Signature	Trainer Printed Name	Trainer Signature