

# Nutrient Management Plan

For 3R Cattle LLC



**OREGON  
DEPARTMENT OF  
AGRICULTURE**

**CONFINED ANIMAL FEEDING OPERATION (CAFO)  
ANIMAL WASTE MANAGEMENT PLAN/NUTRIENT  
MANAGEMENT PLAN SIGNATURE SHEET**

Facility name: 3R Cattle LLC

Facility address: 4250 Hopkins Road  
Ontario, OR 97914

Operators name: Rocky Mouw

Mailing address: 5655 South Black Cat Rd  
Meridian, ID 83642

*Complete if different than the Operator*

Legal landowner: Same

Mailing address: Same  
\_\_\_\_\_

As the Operator of 3R Cattle LLC, I agree to manage this facility in accordance with Animal Waste Management Plan (AWMP)/Nutrient Management Plan (NMP) # \_\_\_\_\_ on file with ODA and maintain those practices as described in the plan. This signed AWMP is incorporated into the CAFO NPDES and WPCF General Permits by reference (Permit Condition S3.A2.).

If changes are made to the animal population, facilities or change in the type of manure system of the CAFO, a new AWMP/NMP must be submitted to ODA for approval at least 45 days before the modification is implemented unless a different schedule is allowed by ODA in writing (Permit Condition S3.D.1 and 2).

Operator signature

*Rocky Mouw*

Date

2-29-24

**ODA USE ONLY**

MA# \_\_\_\_\_

AWMP# \_\_\_\_\_

Received Date \_\_\_\_\_

Approval Date \_\_\_\_\_

Operators name (Please print clearly)

**Rocky Mouw**

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# SECTION 1 - GENERAL INFORMATION

## Operation Information for 3R Cattle LLC

Calendar Year: Plan

Reporting period:

January 1 through December 31

|                  |  |                        |
|------------------|--|------------------------|
|                  |  |                        |
| <b>Name:</b>     | Rocky Mouw                             |                        |
| <b>Business</b>  | 3R Cattle LLC                          |                        |
| <b>Mailing</b>   | 5655 Black Cat Rd, Meridian, ID, 83642 |                        |
| <b>Facility</b>  | 4250 Hopkins Rd, Ontario, OR 97914     | <b>County:</b> Malheur |
| <b>Telephone</b> | (360)927-7209                          | <b>Cell Phone</b>      |
| <b>E-mail</b>    | bcdairy@yahoo.com                      |                        |

Permitted and Actual number of animals by type at the CAFO averaged over the year [S4.D.2(a)/S4.D.2(a)(ii) of

| Animal Type  | Average Weight (Lbs) | Days on Farm |           | Permitted    | Actual       |
|--|----------------------|--------------|-----------|--------------|--------------|
|  |                      | Start Month  | End Month |              |              |
| Milker - Dry   | 1300.0               | 01/01        | 12/31     | 105          | 105          |
| Milker - Holstein  | 1300.0               | 01/01        | 12/31     | 594          | 594          |
| Calf   | 450.0                | 01/01        | 12/31     | 300          | 300          |
| Dairy Heifers  | 750.0                | 01/01        | 12/31     | 300          | 300          |
| Dairy Heifers  | 1350.0               | 01/01        | 12/31     | 399          | 399          |
| <b>Total Animals -</b>   |                      |              |           | <b>1,698</b> | <b>1,698</b> |
| Manure Solids Generated (CF) -   |                      |              |           | 839,039      | 839,039      |
| Bedding Generated (CF) -   |                      |              |           | 0            | 0            |
| Imported Solids (CF) -   |                      |              |           | 0            | 0            |
| Total Solids Generated (CF) -  |                      |              |           | 839,039      | 839,039      |
| Total Solids to Store based on a Volume Reduction Factor of 0.5 (CF) - |                      |              |           | 419,520      | 419,520      |
| Manure Liquids Generated (CF) -  |                      |              |           | 0            | 0            |
| Rainfall-Evaporation on Storage plus Runoff Generated (CF) -           |                      |              |           | 31,073       | 31,073       |
| Process Water Generated (CF) -   |                      |              |           | 468,934      | 468,934      |
| Imported Liquids (CF) -  |                      |              |           | 0            | 0            |
| Total Liquids to Store (CF) -  |                      |              |           | 500,007      | 500,007      |
| Liquids Applied to Land (CF) -   |                      |              |           |              | 402,531      |
| Solids Applied to Land (CF) -  |                      |              |           |              | 0            |
| Grazing Manure Applied to Land (CF) -                                  |                      |              |           |              | 0            |
| Liquids Exported (CF) -  |                      |              |           |              | 97,476       |
| Solids Exported (CF) -   |                      |              |           |              | 839,039      |
| Solids Recycled for Bedding (CF) -                                     |                      |              |           |              | 0            |
| Acres of Land for Land Application Covered by NMP -                    |                      |              |           |              | 130.6 AC     |
| Acres of Land Under Operator Control Used for Manure Applications -    |                      |              |           |              | 130.6 AC     |

## **SECTION 1 - GENERAL INFORMATION**

### **Storage Facilities for 3R Cattle LLC**

| <b>Facility Name</b> | <b>Description</b> | <b>Type</b> | <b>Storage Period (days)</b> | <b>Diameter (ft)</b> | <b>Top Length (ft)</b> | <b>Top Width (ft)</b> | <b>Depth (ft)</b> | <b>Side slope Z</b> | <b>Free board (ft)</b> | <b>Volume (CF)</b> | <b>Uncovered Surface Area (SF)</b> |
|----------------------|--------------------|-------------|------------------------------|----------------------|------------------------|-----------------------|-------------------|---------------------|------------------------|--------------------|------------------------------------|
| Compost Storage Area | Composting Area    | Solid       | 76                           |                      | 180                    | 90                    | 6                 | 1                   | 0                      | 87,768             | 16,200                             |
| East Pens            | Livestock Pens     | Solid       | 209                          |                      | 610                    | 395                   | 1                 | 1                   | 0                      | 239,946            | 240,950                            |
| WSL1                 | Wastewater Storage | Liquid      | 30                           |                      | 144                    | 65                    | 15                | 2                   | 1                      | 55,403             | 9,360                              |
| WSL2                 | Wastewater Storage | Liquid      | 63                           |                      | 225                    | 76                    | 13                | 2                   | 1                      | 115,776            | 17,100                             |
| West Pens            | Livestock Pens     | Solid       | 40                           |                      | 295                    | 157                   | 1                 | 1                   | 0                      | 45,864             | 46,315                             |

# SECTION 1 - GENERAL INFORMATION

## Storage Period Calculations for 3R Cattle LLC

| Solids Storage                    |        |                               |     |
|-----------------------------------|--------|-------------------------------|-----|
| Storage Unroofed Surface Area, SF | 303465 | Volume Reduction Factor =     | 0.5 |
| Available Storage, CF =           | 373578 | Solids Storage Period, Days = | 325 |

| Month         | Number Of Days | Manure Lost In Grazing | Filtered Solids (CF) | Bedding (CF) | Solids Removal Factor (Pct) | Imported Solids (CF) | Solids To Store (CF) | Storage Volume Needed, CF |
|---------------|----------------|------------------------|----------------------|--------------|-----------------------------|----------------------|----------------------|---------------------------|
| October       | 31             | 0                      | 71138                | 0            | 100                         | 0                    | 35569                | 35569                     |
| November      | 30             | 0                      | 68844                | 0            | 100                         | 0                    | 34422                | 69991                     |
| December      | 31             | 0                      | 72580                | 0            | 100                         | 0                    | 36290                | 106281                    |
| January       | 31             | 0                      | 71138                | 0            | 100                         | 0                    | 35569                | 141850                    |
| February      | 28             | 0                      | 64254                | 0            | 100                         | 0                    | 32127                | 173977                    |
| March         | 31             | 0                      | 71138                | 0            | 100                         | 0                    | 35569                | 209546                    |
| April         | 30             | 0                      | 68844                | 0            | 100                         | 0                    | 34422                | 243968                    |
| May           | 31             | 0                      | 71138                | 0            | 100                         | 0                    | 35569                | 279538                    |
| June          | 30             | 0                      | 68844                | 0            | 100                         | 0                    | 34422                | 313959                    |
| July          | 31             | 0                      | 71138                | 0            | 100                         | 0                    | 35569                | 349529                    |
| August        | 31             | 0                      | 71138                | 0            | 100                         | 0                    | 35569                | 385098                    |
| September     | 30             | 0                      | 68844                | 0            | 100                         | 0                    | 34422                | 419520                    |
| <b>Annual</b> | <b>365</b>     | <b>0</b>               | <b>839039</b>        | <b>0</b>     | <b>0</b>                    | <b>0</b>             | <b>419520</b>        |                           |

| Liquids Storage                     |        |  |        | Climate Station: MALHEUR BRANCH EXP S    |        |
|-------------------------------------|--------|--|--------|--|--------|
| Storage Unroofed Surface Area, SF = | 26460  | 25Yr-24Hr Storm Precip, In =               | 2      | Total 25Yr-24Hr Storm Storage Needed, CF | 60,618 |
| Available Liquid Storage, CF =      | 171179 | 25Yr-24H4 Storm Runoff, CF =               | 11,129 | Storage Period without 25yr-24hr Storm = | 93     |
| Unroofed Runoff Area, SF =          | 103242 | 25Yr-24Hr Storm on Unroofed Storages, CF = | 49,489 | Storage Period with 25yr-24hr Storm =    | 65     |

| Month         | Number Of Days | Rainfall (Inches) | Evaporation (Inches) | Rain-Evap on Storages (CF) | Rainfall Runoff (CF) | Manure (CF) | Process Water (CF) | Imported Liquids (CF) | Monthly Liquids to Store (CF) | Total Storage Volume Needed (CF) |
|---------------|----------------|-------------------|----------------------|----------------------------|----------------------|-------------|--------------------|-----------------------|-------------------------------|----------------------------------|
| October       | 31             | 0.65              | 1.98                 | -2933                      | 2386                 | 0           | 39827              | 0                     | 39280                         | 39280                            |
| November      | 30             | 1.19              | 0.5                  | 18971                      | 6287                 | 0           | 38543              | 0                     | 63801                         | 103081                           |
| December      | 31             | 1.38              | 0.71                 | 18421                      | 7766                 | 0           | 39827              | 0                     | 66014                         | 169095                           |
| January       | 31             | 1.29              | 0.74                 | 15122                      | 7061                 | 0           | 39827              | 0                     | 62009                         | 231104                           |
| February      | 28             | 1.04              | 1.09                 | -110                       | 5148                 | 0           | 35973              | 0                     | 41011                         | 272115                           |
| March         | 31             | 1.08              | 2.06                 | -2161                      | 5449                 | 0           | 39827              | 0                     | 43115                         | 315230                           |
| April         | 30             | 0.84              | 3.79                 | -6505                      | 3686                 | 0           | 38543              | 0                     | 35724                         | 350954                           |
| May           | 31             | 0.98              | 5.12                 | -9129                      | 4702                 | 0           | 39827              | 0                     | 35400                         | 386354                           |
| June          | 30             | 0.76              | 6.08                 | -11731                     | 3125                 | 0           | 38543              | 0                     | 29938                         | 416292                           |
| July          | 31             | 0.36              | 7.62                 | -16008                     | 716                  | 0           | 39827              | 0                     | 24535                         | 440827                           |
| August        | 31             | 0.38              | 6.51                 | -13517                     | 812                  | 0           | 39827              | 0                     | 27123                         | 467949                           |
| September     | 30             | 0.48              | 4.03                 | -7828                      | 1343                 | 0           | 38543              | 0                     | 32058                         | 500007                           |
| <b>Annual</b> | <b>365</b>     | <b>10.43</b>      | <b>40.23</b>         | <b>-17407</b>              | <b>48481</b>         | <b>0</b>    | <b>468934</b>      | <b>0</b>              | <b>500007</b>                 |                                  |

# SECTION 1 - GENERAL INFORMATION

## Annual Nutrient Balance for 3R Cattle LLC

| Nutrient Concentrations: | Nitrogen<br>(Total N) | Phosphorus<br>(P <sub>2</sub> O <sub>5</sub> ) | Potassium<br>(K <sub>2</sub> O) | Units        |
|--------------------------|-----------------------|--|---------------------------------|--------------|
| Liquid Manure -          | 7.50                  | 1.90   | 3.98                            | lbs/1000 Gal |
| Solid Manure -           | 7.40                  | 10.20  | 19.80                           | lbs/Ton      |

| Nutrients Generated: | N Generated       | P <sub>2</sub> O <sub>5</sub> Generated | K <sub>2</sub> O Generated |
|----------------------|-------------------|---|----------------------------|
| Liquid Manure -      | 28050 lbs         | 7106 lbs                                | 14885 lbs                  |
| Solid Manure -       | 111760 lbs        | 154048 lbs                              | 299034 lbs                 |
| Grazing Manure -     | 0 lbs             | 0 lbs                                   | 0 lbs                      |
| <b>Total -</b>       | <b>139810 lbs</b> | <b>161154 lbs</b>                       | <b>313919 lbs</b>          |

| Exported Nutrients: | N Exported        | P <sub>2</sub> O <sub>5</sub> Exported | K <sub>2</sub> O Exported |
|---------------------|-------------------|--|---------------------------|
| Liquid Manure -     | 5468 lbs          | 605 lbs                                | 2408 lbs                  |
| Solid Manure -      | 111760 lbs        | 67240 lbs                              | 248161 lbs                |
| <b>Total -</b>      | <b>117228 lbs</b> | <b>67845 lbs</b>                       | <b>250569 lbs</b>         |

| Crop Nutrient Removal: | N Utilized       | P <sub>2</sub> O <sub>5</sub> Utilized | K <sub>2</sub> O Utilized |
|------------------------|------------------|--|---------------------------|
| <b>Total -</b>         | <b>23642 lbs</b> | <b>9569 lbs</b>                        | <b>18282 lbs</b>          |

| Annual Nutrient Budget:                  | Nitrogen (N)     | Phosphate (P <sub>2</sub> O <sub>5</sub> ) | Potassium (K <sub>2</sub> O) |
|--|------------------|--|------------------------------|
| Nutrients Generated -                    | 139810 lbs       | 161154 lbs                                 | 313919 lbs                   |
| Nutrients Removed by Crop and Exported - | 140871 lbs       | 165002 lbs                                 | 320217 lbs                   |
| <b>Net Annual Nutrient Balance -</b>     | <b>-1060 lbs</b> | <b>-3848 lbs</b>                           | <b>-6298 lbs</b>             |

Note: Total nutrients generated are computed from analytical data by taking the total volume of material applied times the nutrient analysis of the material. The total nutrients utilized are computed using the crop yield data times the crop uptake of nutrients.

# **SECTION 1 - GENERAL INFORMATION**

## **Background and Site Information**

3R Livestock LLC is located approximately 5.4 miles northwest of Ontario, Oregon in Malheur County. It is located in the east region of Eastern Oregon at an elevation of approximately 2,385 feet. 3R Livestock LLC is located in the Malheur River watershed (HUC170501170603) that drains to the Snake River.

3R Livestock LLC is owned and managed by Rocky Mouw who planning to milk 594 cows and have supporting livestock of 105 dry cows, 699 heifer replacements and 300 calves. All the livestock on the 3R Livestock LLC are confined all year round. Currently 3R Livestock LLC is permitted for 600 heifer replacements and 309 calves. A request to increase the permitted animal numbers for this facility is included with the NPDES Permit Summary in Section 5 of the Nutrient Management Plan (NMP).

### **ANIMAL MORTALITY MANAGEMENT**

Livestock mortalities that occur during the year on the farm are picked up by Dar Pro Industries, a rendering company. Other acceptable disposal methods of livestock mortalities may be used.

### **MANURE COLLECTION METHODS**

All livestock are confined in earthen pens and barns. The manure collected in the pens is dehydrated and used as bedding for the livestock. A vacuum truck is used to clean manure from the livestock barns and is stored in the area used for composting. There are two wastewater storage lagoons which are maintained to capture contaminated runoff that may occur during a large winter storm event.

### **MANURE STORAGE FACILITIES AND TRANSFER**

The manure generated at the facility is handled in a dry solid form. Dry manure is scraped and stacked within feedlots during the confinement period, and then exported to surrounding farms during the growing season. All manure will be contained within the facilities. Clean water is diverted around the system, except in extreme conditions, when some rainfall enters the livestock pens. There are two wastewater storage ponds that catch rainfall runoff from the milking facilities, livestock barns and pens. All runoff and wastewater generated by the facility is collected in the wastewater storage lagoons and applied using the center pivot irrigation system and evaporates due to the dry climate.

### **MANURE UTILIZATION**

There are 130.6 acres of crop land available for manure application but approximately 80% of the manure generated annually is exported to surrounding farms. Crops grown on farm include alfalfa hay, corn for silage and grain, and winter wheat.

### **NUTRIENT MANAGEMENT**

Performance based nutrient management will be employed to ensure nutrient balance on all fields. Actual crop yields vary from year to year depending upon weather conditions and specific field management. Crop yields will be tracked annually and used to determine the rate of manure application on a per field basis if manure is applied on farm. Manure will be tested annually, and tested values will guide application rates. Applications of solids containing manure are planned on a nitrogen basis on all fields based on the Low phosphorus index rating. Applications of wastewater and solids containing manure will be made on a phosphorous basis on all fields that have a Medium or High phosphorus index rating. No applications of manure or other material containing phosphorus are to be made to a field with a Zero Out phosphorus index rating.

## ***SECTION 1 - GENERAL INFORMATION***

The soil phosphorus concentrations will be monitored using soil tests on all the crop land fields. Any commercial fertilizer applications will be based on Oregon State University fertilizer guides for the crops being grown to reduce the risk of excessive soil nutrient concentrations.

# SECTION 1 - GENERAL INFORMATION

## **Emergency Response Plan**

### **In Case of an Emergency Storage Facility Spill, Leak or Failure-**

#### **Implement the following first containment steps:**

- Stop all other activities to address the spill.
- Stop the flow. For example, use skid loader or tractor with blade to contain or divert spill or leak.
- Call for help and excavator if needed.
- Complete the clean-up and repair the necessary components.
- Assess the extent of the emergency and request additional help if needed.

### **In Case of an Emergency Spill, Leak or Failure during Transport or Land Application-**

#### **Implement the following first containment steps:**

- Stop all other activities to address the spill and stop the flow.
- Call for help if needed.
- If the spill posed a hazard to local traffic, call for local traffic control assistance and clear the road

and roadside of spilled material.

Contain the spill or runoff from entering surface waters using straw bales, saw dust, soil or other

appropriate materials.

If flow is coming from a tile, plug the tile with a tile plug immediately.

Assess the extent of the emergency and request additional help if needed.

#### **Contacts to be made by the owner or operator within 24 hours-**

| <b><u>Organization</u></b>       | <b><u>Phone Number</u></b> |
|----------------------------------|----------------------------|
| Oregon Department of Agriculture | (503) 986-4699             |
| Natural Resources Division TTD   | (503) 986-4762             |
| 635 Capitol St., N.E.            |                            |
| Salem, OR 97301-2532             |                            |

Oregon Emergency Response (System OERS) (800) 452-0311

#### **Be prepared to provide the following information:**

Your name and contact information.

Farm location (driving directions) and other pertinent information.

Description of emergency.

Estimate of the amounts, area covered, and distance traveled.

Whether manure has reached surface waters or major field drains. Include the name of the surface water source that manure reached. Contact the Oregon Emergency Response System if manure entered a drinking water source.

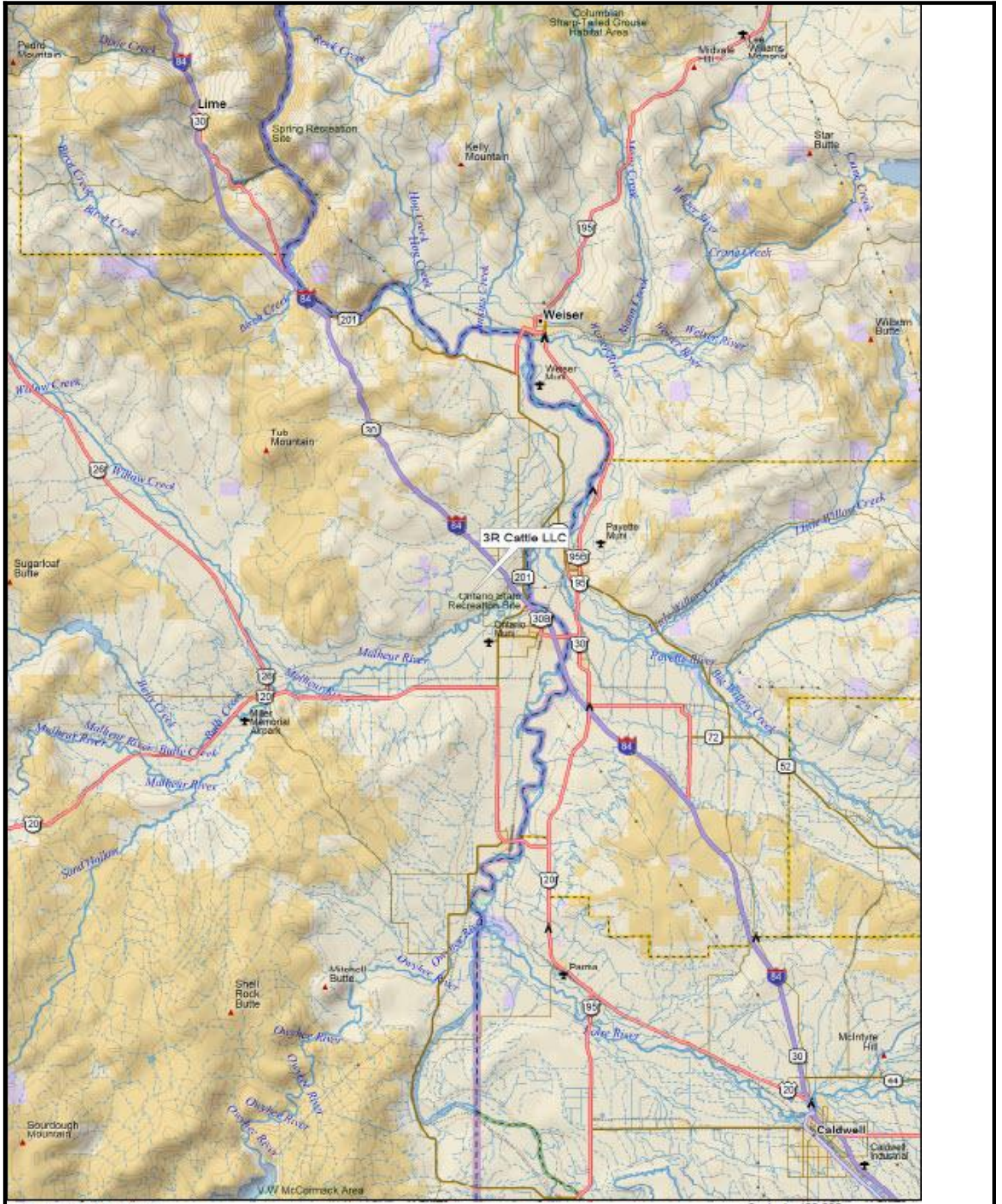
Whether there is any obvious damage: employee injury, fish kill, or property damage.

If a grab sample of the discharge was taken.

Current status of containment efforts.

# SECTION 1 - GENERAL INFORMATION

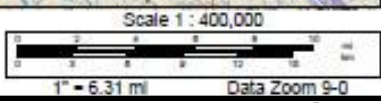
## Location Maps for 3R Cattle LLC



Data use subject to license.

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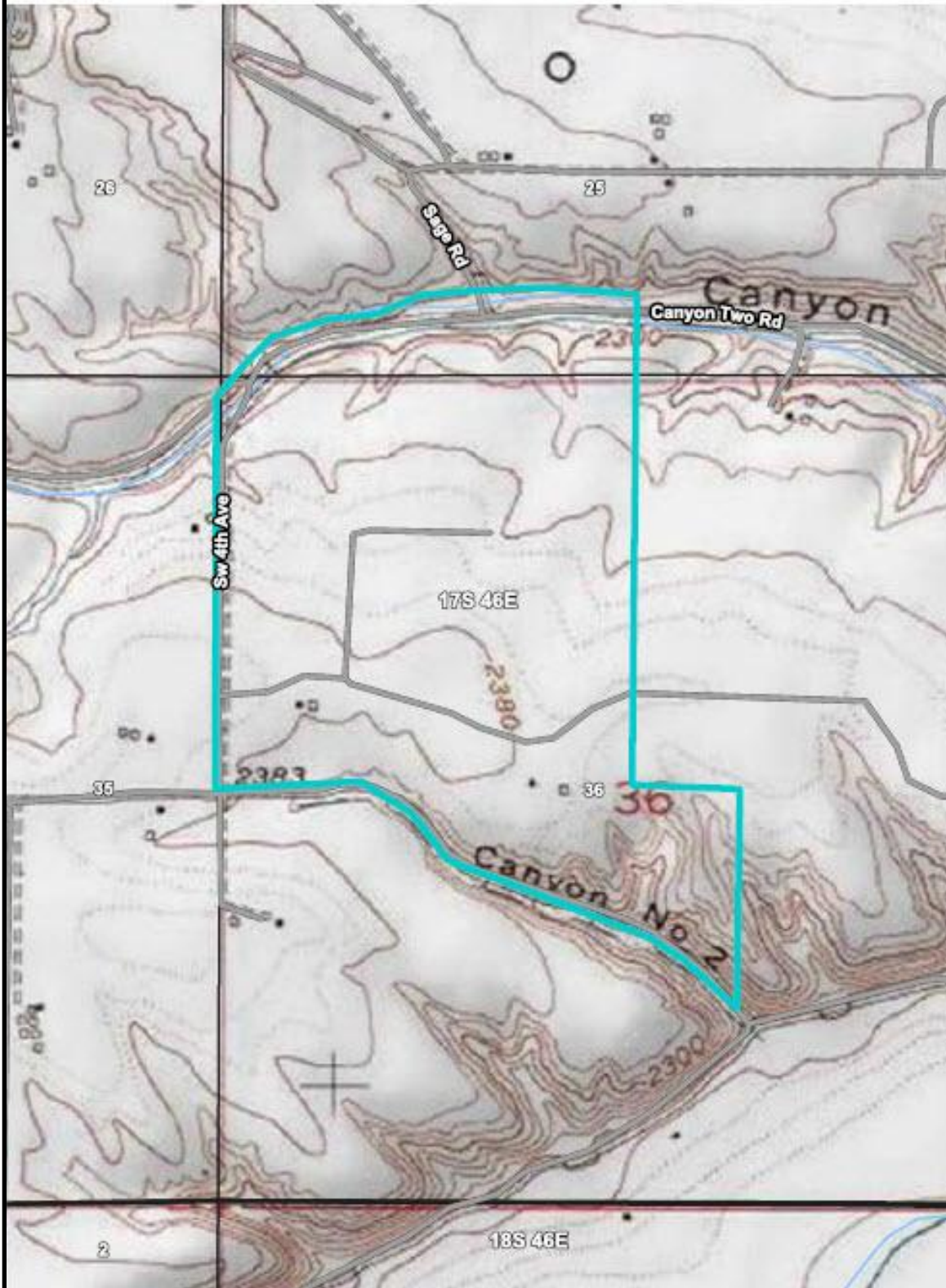
www.delorme.com



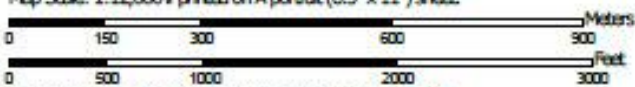
# SECTION 1 - GENERAL INFORMATION

## Topographical Maps for 3R Cattle LLC

Topography Map  
(3R Cattle LLC)



Map Scale: 1:12,000 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84

## **SECTION 2 - PRODUCTION AREA**

### **Animal Mortality**

To decrease non-point source pollution of surface and ground water resources, reduce the impact of odors that result from improperly handled animal mortality, and decrease the likelihood of the spread of disease or other pathogens, approved handling and utilization methods shall be implemented in the handling of normal mortality losses.

Animal mortalities must be handled in accordance to ORS 601.140 to prevent the discharge of pollutants to state waters. Animal mortalities will be managed to ensure that they are not disposed of in a liquid manure, storm water, process waste water storage or treatment system, or that is not specifically designed to treat animal mortalities.

Under no circumstances are animal mortalities to be disposed of in any type of liquid manure storage facility.

#### **Guidance for Proper Management of Dead Animals**

Refer to Plan for Catastrophic Animal Mortality Handling for guidance on what steps to take for a catastrophic animal mortality event. Having dead animals sent to an acceptable disposal site is the best method to deal with animal mortalities. A list of landfills and phone numbers can be found on the internet at <http://www.deq.state.or.us/lq/sw/disposal/permittedfacilities.html>. If a local landfill is not permitted to accept animal carcasses, the Oregon Department of Environmental Quality (DEQ) may grant an exception. Phone numbers to local DEQ offices can be found in most phone books or on the internet at <http://www.deq.state.or.us/about/locations.html>.

**Under no circumstances are animal mortalities to be disposed of in any type of liquid manure storage facility.**

#### **Acceptable methods and guidance for animal mortality disposal are:**

**Composting-** Composting animal mortalities requires a composting plan be prepared and submitted to the Oregon Department of Agriculture, Natural Resources Division. A composting plan consists of a site plan drawing of the composting facility, a description of how any runoff from the facility will be contained, a description of the composting process to be used and how the compost will be used. The composting facility for animal mortalities must have a concrete floor or similar impervious surface to prevent nutrient leaching. A roof covering the animal mortality composting facility is recommended to control moisture added by rainfall and rainfall runoff. Assistance to develop a composting plan is available from the Natural Resources Division of the Oregon Department of Agriculture, (503) 986-4700. A permit is also needed from the Department of Environmental Quality (DEQ) if animal mortalities will be imported from other farms for composting.

Rapid composting of dead animals occurs when the carbon to nitrogen (C:N) ratio of the compost mix ranges between 10 and 20 to 1. To achieve the recommended C:N ratio, build the initial compost pile by placing 18 inches of sawdust or other bulking agent on the floor of the composting area. The bulking agent should extend beyond the perimeter of the animal to be composted by at least 2 feet. If using a compost bin the bulking material should extend at least 1 foot beyond the perimeter of the animal being composted. Using a bulking agent such as sawdust will absorb any liquids as the animal decomposes during the composting process.

Once the bulking agent has been placed on the floor of the composting area, place the animal carcass on top. To decrease composting time and prevent bloating the body cavity should be cut open. Cover the carcass with 1 to 3 feet of separated manure solids or other material that has a moisture content between 30 to 60 percent and a C:N ratio of not more than 30 to 1. Use 1 foot of material for small carcasses and 3 feet for large carcasses such as cattle. Be careful not to add material that is too wet as it will hinder the composting

process and cause odors. Small animals can be layered in a compost pile by placing 12 inches of the bulking agent between layers as shown in the figure below. Be sure the total height of the compost pile does not exceed 7 feet in height as it may spontaneously combust causing a fire.

The first heating or primary composting cycle will take approximately 15 to 90 days depending on the size of the animal being composted. Refer to the table below for estimated primary composting times. Check pile temperature using thermometer probe on a daily basis. The pile temperature should be checked at multiple points around the compost pile and at a point approximately 3 feet into the pile. The temperature of the compost pile should reach 130 degrees Fahrenheit (F) within a few days.

Temperatures should peak between 130 and 150 degrees F in 3 to 4 days. When the temperature of the compost pile falls below 130 degrees F, the compost needs to be aerated by turning or other means. Be sure carcasses remain covered with the bulking agent after being aerated. It is important to maintain a temperature above 130 degrees F for at least 7 days during the primary composting cycle as failure to do so may result in the incomplete destruction of pathogens and can cause fly and odor problems. After aerating the compost pile, the secondary composting times will be similar to the first.

**CAUTION:** It is unclear whether prions that are the proteins that cause Bovine Spongiform Encephalitis (BSE or Mad Cow Disease) are destroyed in the composting process. Animals showing signs of Mad Cow Disease and those with anthrax should not be composted and must be reported to the Oregon Department of Agriculture, Animal Health and Identification Division at (503) 986-4680 for guidance on disposal.

After aerating the compost pile by turning or other means, be sure to check the moisture content and add water if necessary being careful not to add too much water. The compost pile should feel moist to the touch but you should not be able to squeeze any water out of it.

Odors given off by the composting operation is a good indicator of how the compost operation is proceeding. Foul odors may mean that the process has turned from aerobic to anaerobic. Anaerobic conditions are the result of insufficient oxygen in the compost. This may be caused by excessive moisture in the compost or the need for turning or aerating of the compost pile.

After the composting process is finished, it may be used as a bulking agent for a new compost pile. A rule of thumb is to use 50 percent of the composted material for a bulking agent but you may want to use more or less depending on how degraded the bulking agent is in the finished compost. Using finished compost in a new compost pile reduces the amount of bulking agent needed for the new pile and provides microbial inoculants to get the composting process started.

Finished compost can also be applied to crop and pasture land fields for utilization of the nutrients and organics in the composted material. Compost from animal mortalities should not be applied to crops that will be consumed directly by humans. The nutrient content of the composted material should be determined and application equipment calibrated to ensure nutrients contained in the composted material are not over applied.

**Natural Disposal-** To allow nature to take its course the dead animal needs to be transported to a location at least ½ mile from any off-farm dwelling and at least ¼ mile from any water way in accordance with ORS 601.140. Once this criteria is met the carcass can be left to degrade naturally with the help of scavengers. This method is not an acceptable means of disposal for a large number of animal mortalities or for byproducts generated during butchering.

**Landfill-** Dead animals may be transported to a permitted landfill that accepts animal carcasses for disposal. Be sure to call the chosen landfill first to insure a landfill will accept your animal carcasses. Refer to the website given previously for permitted landfills to call. Contact the landfill operator and the DEQ at (800) 452-4011 if the landfill you would like to use is not a permitted facility to see if an exception may be granted for the disposal of animal carcasses.

**Incineration-** Dead animals may be burned as a method of disposal and as a method to control diseases. The economics of incineration and availability of incineration units usually make this option undesirable. A permit is needed from the Oregon Department of Environmental Quality (DEQ) Air Quality program to operate an incineration unit. Contact your DEQ at (800) 452-4011 for guidance on incineration of animal carcasses.

**Burial-** Dead animals may be buried in accordance with ORS 601.090(7) as a method of disposal. Large animals such as an adult cow will require a hole approximately 2 feet by 7 feet by 8 feet deep. Be sure to select a site that doesn't have a water table to insure the bottom of the hole will be dry. The animal carcass should be covered with hydrated lime and covered with at least 4 feet of soil mounded 2 feet above the natural ground line to allow for settling as the carcass decomposes. Burial sites should be located at least 500 feet down slope from surface waters or wells.

Burial is not an acceptable method of disposal for animal byproducts generated from butchering. Burial of large numbers of animal mortalities is not acceptable unless performed in accordance with a Catastrophic Animal Mortality Management Plan. Burial of imported animal mortalities is subject to disposal regulations and the Oregon Department of Environmental Quality (DEQ), the Oregon Department of Agriculture (ODA) and the local land use planning authority should be contacted.

### **Plan for Catastrophic Animal Mortality Handling**

The following information describes how you plan to manage catastrophic loss of animals in a manner that protects surface and ground water quality. You must follow all national, state and local laws, regulations and guidelines that protect soil, water, air, plants, animals and human health.

#### **Guidance in the event of a catastrophic animal mortality event:**

Remove animal mortalities from the livestock production area and place in an area designated for mortality storage to be determined at the time of the catastrophic event.

Contact the state veterinarian if animal death is suspicious or animal displayed unusual symptoms before death.

If it is determined that a disease outbreak may be eminent, implement procedures as directed by the State Veterinarian. This may include killing exposed animals, burning carcasses and burial of ashes in a predetermined catastrophic mortality burial areas.

Refer to state guidance regarding appropriate catastrophic animal mortality handling methods.

#### **Contact Information-**

##### **Organization**

Oregon Department of Agriculture  
Natural Resources Division  
635 Capitol St. NE  
Salem, OR 97301-2532

##### **Phone Number**

(503) 986-4699  
TTD- (503) 986-4762

Oregon Emergency Response System (OERS)

(800) 452-0311

Oregon State Veterinarian  
USDA APHIS  
530 Center Street NE, Suite 335  
Salem, OR 97301

(503) 378-4710  
(503) 399-5871  
Fax- (503) 399-5607

## **SECTION 2 - PRODUCTION AREA**

### **Operation and Maintenance Considerations**

#### **WASTEWATER STORAGE LAGOONS-**

The wastewater storage lagoons are used to capture and store rainfall runoff containing manure generated by the farm. The rainfall runoff stored in the wastewater storage lagoons should evaporate during the spring and summer months. If the stored rainfall runoff is not totally evaporated by the fall, the wastewater storage lagoons must be pumped to the lowest level possible to function properly and have the greatest management flexibility before the fall and winter rainy season begins.

Any annual sludge buildup in the wastewater storage lagoons must be removed to maintain design capacity taking care not to damage the soil liner and applied to land application areas in accordance with guidance given in Section 3.

Inspect the wastewater storage lagoons weekly to insure structural integrity and that at least 1 foot-6 inches of freeboard is being maintained on the earthfill embankment(s) to accommodate excess rainfall such as a 25 year-24hour storm and prevent overtopping the embankment(s). If the structural integrity of the wastewater storage lagoons embankment is found to be compromised, immediately draw the liquid level down below the damaged area to determine the cause. Seek the services of a qualified engineer to assess the damage and recommend necessary repairs before allowing rainfall runoff levels above the damaged area.

Inspect the wastewater storage lagoons during the summer months when all the rainfall runoff has evaporated and inspect the embankments for structural damage. If structural damage to the embankment of a wastewater storage lagoon is discovered, seek the services of a qualified engineer to assess the damage and recommend necessary repairs before allowing rainfall runoff levels above the damaged area. Follow the guidance given in Section 3 if rainfall runoff has to be applied to the crop land fields.

Control undesirable vegetation growth by spraying or mowing. Control rodents as necessary. Check elevations of earthfills periodically and restore to grade and shape as necessary. Fill and reseed eroded embankment areas or repair with well graded rock riprap. Safety features such as signs and fences should be kept in good repair. Do not dispose of animal carcasses in any wastewater storage lagoon. It is against the law to do so.

#### **FEEDLOT PENS-**

Maintaining a firm, dry feedlot surface is an important factor in maintaining a good environment that promotes good animal health.

Maintain diversions and drainageways so they direct clean water runoff away from the feedlot pens and holding areas. Stormwater runoff from the feedlot pens should be directed to storage or treatment areas.

Manure shall be contained in the feedlot pens until it can be transferred to a storage facility or applied to the fields for utilization of nutrients and organics. Manure accumulations created for bedding mounds shall be managed such that manure does not create a potential pollution hazard.

Take care to maintain the compacted layer when removing excess manure from the feedlot pens.

#### **DIKES AND BERMS-**

Periodically check elevations of earthfills and restore to grade and shape, if necessary. All settlement or cracks in the dike should be investigated to determine the cause and immediately repaired.

Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization, and application of herbicides when necessary. Fertilize the established stand with at least

## **SECTION 2 - PRODUCTION AREA**

200 pounds of 21-0-0 per acre or equivalent annually or as needed to maintain a uniform vigorous stand. Avoid excess travel and uncontrolled grazing on any portion of the dike system that will harm or destroy vegetative cover. Periodic mowing or controlled grazing may also be needed to control height. Maintain installed fences to prevent unauthorized human access or uncontrolled grazing of dike surfaces. Livestock can be used to control vegetation height, providing grazing is controlled to short periods of time when damage to the dike surface and vegetation will not result.

Check all erosion control sections for accelerated weathering and displacement of materials. Replace to original shape and grade if necessary.

Immediately repair any vandalism, vehicular, or livestock damage to the dike or other appurtenance.

Eradicate or otherwise remove all rodents or burrowing animals and repair any damage caused by their activity.

### **ANIMAL ACCESS LANES AND WALKWAYS-**

Remove debris and excess manure from access lanes, walkways, and drainage areas. Good vegetative cover should be maintained on all areas adjacent to access lanes and walkways.

### **FENCES-**

Do not allow livestock access to open water courses and drainageways. Provide off stream watering facilities where possible and limit access to designated watering areas.

Inspect fences periodically and repair or replace broken or decayed posts and tighten sagging wire as needed. Broken wire can be spliced or replaced. Replace broken or missing insulators on electric fences as needed and repair or replace inoperative electric fence controllers.

Insure gates and other appurtenances are in good working order. Replace or repair components as needed.

### **CULVERTS-**

Culverts should be inspected at least once annually. Inspect culverts after large rainfall events to insure no damage has been done to the culvert that would prevent it from functioning as intended. Remove any debris that may affect the culverts capacity. Any damage to the culvert and surrounding area should be repaired as soon as possible.

### **HEAVY USE AREAS-**

Periodically inspect concrete and asphalt slabs and curbs and repair or replace broken sections as needed. Prevent manure from building up next to the curbs or over topping them.

Do not allow livestock access to open water courses and drainageways. Provide off stream watering facilities where possible and limit access to designated watering areas.

Inspect fences periodically and repair or replace broken or decayed posts and tighten sagging wire as needed. Broken wire can be spliced or replaced. Replace broken or missing insulators on electric fences as needed and repair or replace inoperative electric fence controllers.

Insure gates and other appurtenances are in good working order. Replace or repair components as needed.

### **IRRIGATION SYSTEMS-**

Apply irrigation water and wastewater in accordance with Irrigation Water Management guidance in Section 3.

Maintain sprinkler irrigation systems in accordance with the manufacturer's recommendations to help ensure trouble free operation. Prevent livestock access to

## **SECTION 2 - PRODUCTION AREA**

equipment during operation.

Clean plugged nozzles and replace if worn or defective.

Promptly repair all leaks by replacing valves, fittings, gaskets, worn or damaged parts.

Prompt repair or replacement of damaged or worn components is necessary. Check to make sure all application components i.e. water control structures, gates, valves, ditches, etc. are functional and are in good operating condition.

Maintain screening and filtering facilities.

Maintain vigorous vegetative growth where applicable.

### **LIVESTOCK WATERING FACILITIES-**

Check all above ground connections, valves, gates, rodent guards, inlets and outlets to make sure they are functioning properly. Check troughs and tanks for leaks or cracks and repair or replace immediately, if necessary.

Make certain the area adjacent to the trough is well protected with gravel, paving, or good cover. Be sure that the outlet pipe has a free outlet and is not causing any serious erosion problems. Check periodically to see if debris has fallen into the trough or tank which may restrict inflow or planned functions of the outflow system.

Clean the entire system periodically and remove moss, algae growth, and/or sludge. Chemicals such as copper sulfate and chlorine can be used to prevent moss and algae growth. Local rules and regulations are to be followed when using chemicals to make sure they are safe for animals.

Where necessary maintain coverings and insulation to prevent damage by freezing.

Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

Immediately repair any vandalism, vehicular or livestock damage.

### **PIPELINES-**

Flush pipelines used for wastewater applications with clean water following an application, or as needed, to prevent particle buildup.

Drain the pipeline and components in areas that are subject to freezing. If parts of the pipeline cannot be drained, a non-toxic antifreeze solution may be added.

Check to make sure all valves and air vents are set at the proper operating condition so they can provide protection to the pipeline.

Inspect pipelines for signs of failure. Inspect risers and valves periodically for leaks or worn gaskets.

Repair or replace pipeline, risers and valves as needed.

Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

Annually inspect underground pipelines for proper operation. Check fields for signs of positive pressure (blow holes) or negative pressure (sink holes) in underground pipelines. Repair or replace damaged or broken pipelines as needed maintaining designed depth of cover.

For free draining underground pipelines, keep outlets free of vegetation and sediment. Correct and prevent erosion at outlets by installing riprap or other measures. Repair or replace damaged or broken rodent guards as needed.

Avoid travel over underground pipelines with heavy equipment when the soil is saturated except at crossings designed for this purpose.

Avoid any subsoiling operation that may disturb the underground pipeline.

Eradicate or otherwise remove all rodents and/or burrowing animals that have or can potentially damage any part of the system. Immediately repair any damage caused by their activity.

Immediately repair any damage due to vandalism, vehicular or livestock.

### **PUMPS-**

Operate and maintain pumps in accordance with good judgment and manufacture's

## **SECTION 2 - PRODUCTION AREA**

manuals and recommendations.

Drain liquid manure from pumps during cold weather to prevent freezing. If parts of the system cannot be drained, a non-toxic antifreeze solution may be added.

Inspect pumps periodically and remove debris wrapped around shafts and impellers. Maintain foot valves and check valves for proper operation.

For proper operation of electric motors and controls, maintain lubrication for all bearings, keep electric panel free from obstructions and debris. Maintain electrical safety devices, assure all electrical contacts are tight, and lock main electrical switch to "OFF" position during non-use season. Maintain adequate shade and ventilation for pump motors.

For proper operation of pumps, maintain lubrication for all bearings and pump shafts, assure belts are adjusted properly, maintain safety covering devices on open shafts and belt drives, check to make sure all safety valves and devices are set at proper operating conditions so they may provide protection to the pump and power unit. For centrifugal pumps, periodically measure tolerance between pump impeller and pump casing (i.e. wearing) and replace wear ring as needed to help restore new pump operating characteristics.

Use portable pressure gauge (preferably a liquid filled gauge) to monitor pump performance.

Operate and maintain agitators in accordance with the manufacture's manual and recommendations.

Inspect all plumbing annually as a minimum.

Replace, tighten, or repair broken or loose connections and lines as needed.

### **ROOF GUTTERS AND DOWNSPOUTS-**

Periodically check gutters, downspouts and all above ground pipelines, trash guards, pumps, structures, and appurtenances for proper operation. Repair or replace if needed.

Periodically remove debris from gutters, downspouts and outlet facilities.

Protect downspouts from damage by livestock and equipment. Repair or replace damaged components as needed.

Keep gutters, downspouts, pumps, conveyance pipelines and ditches and appurtenances in good operating condition with O & M performed as per site specific recommendations for each component.

### **WELL(S)-**

Protect the area immediately surrounding the well from being damaged by agriculture machinery, vehicles, or livestock.

All fences, railings, and/or warning signs shall be maintained to provide warning and/or prevent unauthorized human or livestock entry.

Do not allow any foreign debris to accumulate and maintain soil and vegetative covering in the immediate vicinity of the well.

Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

Check metal surfaces for rust and other damage especially sections in contact with earthfill and with other materials. Repair or replace damaged section and apply paint as a protective covering.

Keep all surface water from entering or accumulating at the immediate vicinity of the well site.

Immediately repair any vandalism, vehicular, or livestock damage.

### **CHEMICAL HANDLING CHECKLIST-**

The following measures shall be taken to prevent chemicals from contaminating process water or storm water storage and treatment systems:

1. Make sure all chemicals are stored in proper containers. Expired chemicals and empty containers are to be properly disposed of in accordance with state and federal regulations.

## ***SECTION 2 - PRODUCTION AREA***

Pesticides and associate refuse are to be disposed of in accordance with the FIFRA label.

2. Chemical storage areas are to be self-contained with no drains or other pathways that will allow spilled chemicals to exit the storage area.
3. Chemical storage areas are to be covered to prevent chemical contact with rain or snow.
4. Emergency procedures and equipment are to be in place to contain and clean up chemical spills.
5. Chemical handling and equipment wash areas are to be designed and constructed to prevent contamination of surface waters, waste water, and storm water storage and treatment systems.

# SECTION 2 - PRODUCTION AREA

## Production Area Maps for 3R Cattle LLC



**3R Cattle LLC**  
Owner/Operator: Rocky Mour  
County: Malheur State: Oregon  
Approximate Acres: 24.9 Date: February 2024  
Location: Section 36, T17N, R46E from the W.M.  
Assisted By: Bruce D. Wilson, H&R Engineering LLC



200 0 200  
SCALE IN FEET

# SECTION 3 - UTILIZATION AREA

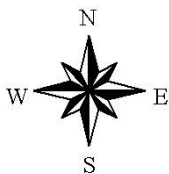
## Field Maps for 3R Cattle LLC

### 3R Cattle LLC



#### Map Legend

Field Name - Field Boundary, Field Name, Acres  
Acres

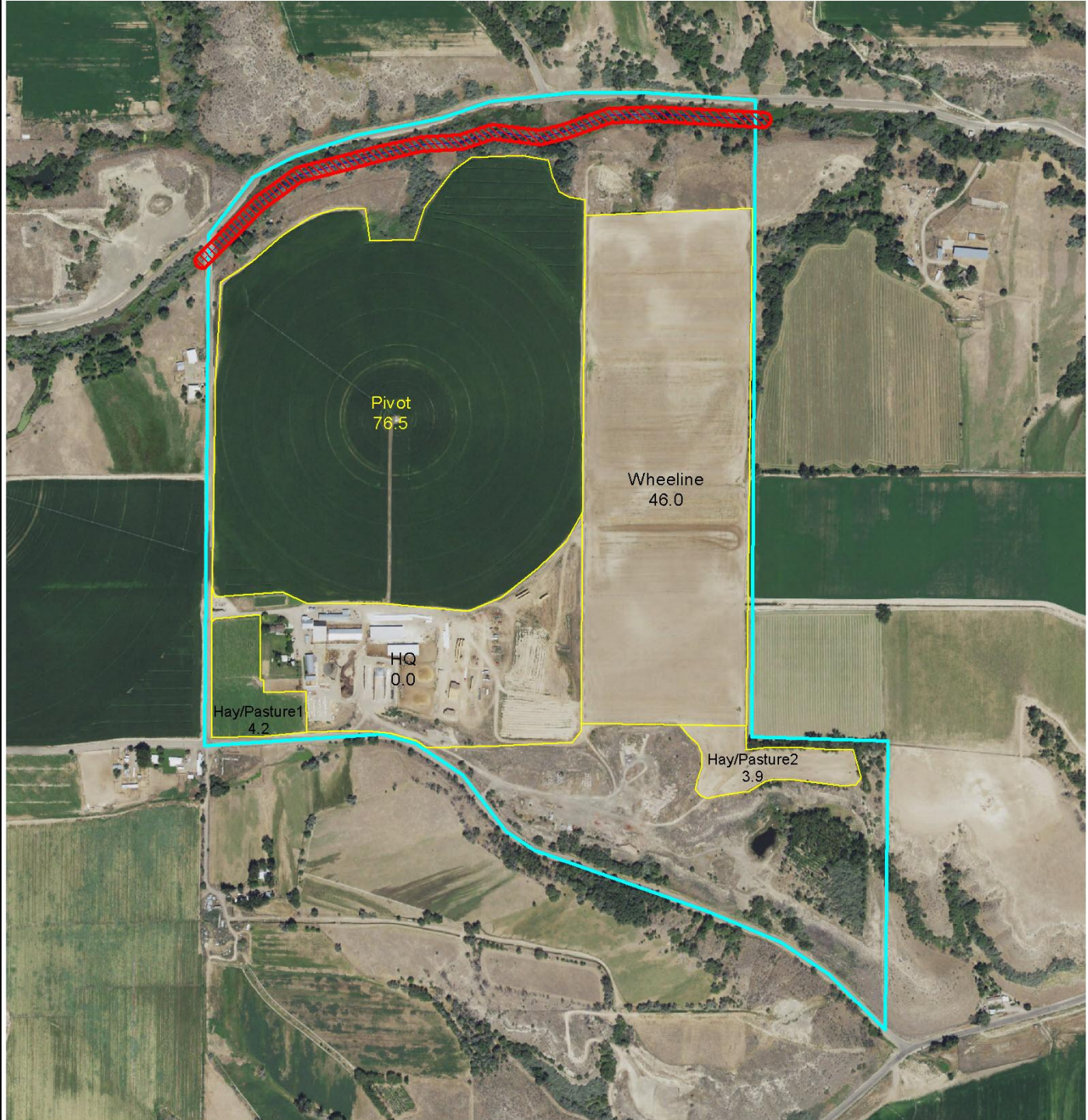


Scale 0 500 1000 1500 Feet

# SECTION 3 - UTILIZATION AREA

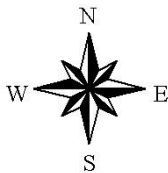
## Setback Maps for 3R Cattle LLC

### 3R Cattle LLC



Map Legend

- Field Name Spreadable Acres - Field Boundary, Field Name, Spreadable Acres
- Setback Areas



Scale 0 500 1000 1500 Feet



## **SECTION 3 - UTILIZATION AREA**

### **Application Considerations**

The manure and irrigation application systems will be calibrated in accordance with guidance in this section to insure the applications of manure, bedding and runoff from the waste storage facilities are in accordance with agronomic rates.

No application of wastewater or solids containing manure is to be made to the field buffer areas shown on the Setback Map in Section 3-2. Applications of wastewater and solids containing manure should be made in accordance with guidance in this section to reduce the risk of contaminated runoff to surface water sources and leaching of contaminants to ground water sources.

The phosphorus runoff rating for each of the farm fields is based on the Oregon Natural Resources Conservation Service Phosphorus Index and is shown in the table in Section 4-3. Wastewater, solids and commercial fertilizer for any field with a LOW runoff rating can be applied on a nitrogen basis. Wastewater, solids and commercial fertilizer for any field with a MEDIUM or HIGH runoff rating must be applied on a phosphorus basis. No applications of manure or commercial fertilizer containing phosphorus are to be made on a field with a ZERO OUT phosphorus runoff rating.

**Manure applications may be made at any time of the year provided certain factors have been considered.** However, the overriding factor one should use in considering whether or not to apply nutrients to a crop, irrespective of the nutrient source, is the agronomic need of the crop at the time of application. The following guidelines are to be considered once the decision has been made to make a manure application.

**Consider using T-Sum 200 to determine when manure applications are to begin** as long as you can comply with all other permit and AWMP requirements. Calculations for T-Sum 200 are outlined in OSU Extension Fertilizer Guide for Pastures (OSU FG63, 2000). T-Sum 200 is based on accumulated heat units and is an accurate guide to estimate plant activity. Research has shown that T-Sum 200 is the earliest date when plant roots begin to grow in the spring and thus are receptive to applied nutrients.

T-Sum 200 is determined by monitoring surface air temperature and summing the daily minimum and maximum air temperatures and dividing the sum by two to get the average daily air temperature then converting that to centigrade ( $F \text{ degrees minus } 32 \text{ times } 0.556$ ). Manure applications may begin once 200 heat units have been accumulated. However, one must still apply manure at agronomic rates based on the estimated growth potential of the crop and anticipated climatic events.

Based on crop nutrient uptake patterns, manure applications should stop when the crop is done growing for the year and before the first significant rainfall event that is expected to result in saturated soils or surface runoff.

Fields that are subsurface (TILE) drained require additional precautions when manure is applied. Any pre-application tillage should leave as much residue as possible on the soil surface. Water control structures installed in subsurface drainage systems should be managed to prevent discharge of manure and wastewater during periods of application.

Be aware of the location of sensitive areas, concerns of neighbors or concerns of the public, which require special application procedures. To reduce odor problems, apply

## **SECTION 3 - UTILIZATION AREA**

wastewater and solids containing manure in mid-morning when temperatures are warming and air is rising rather than in the afternoon or evening when air is cooling and settling. Avoid applications during periods of fog.

Calibrate application equipment to insure uniform distribution and accurate application rates in accordance with guidance given in the Considerations for Manure Applications and with guidance on the calibration of application equipment.

Maintain setbacks for manure application from any surface waters. The management goal is not to allow manure to enter surface waters at any time. The following table shows **minimum setback requirements** for manure applications:

| Manure Type | Application Equipment | Month and Setback Distance in Feet <sup>a, b, d</sup> |     |     |     |                    |     |     |     |     |     |     |     |
|-------------|-----------------------|---|-----|-----|-----|--------------------|-----|-----|-----|-----|-----|-----|-----|
|             |                       | Jan   | Feb | Mar | Apr | May                | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Liquid      | Big gun               | 100   | 100 | 100 | 35  | 35                 | 35  | 35  | 35  | 35  | 100 | 100 | 100 |
| Liquid      | Spreader Bar          | 100   | 100 | 35  | 35  | 35/15 <sup>c</sup> | 15  | 15  | 15  | 35  | 100 | 100 | 100 |
| Liquid      | Tank Wagon            | 100   | 100 | 35  | 35  | 35/15 <sup>c</sup> | 15  | 15  | 15  | 35  | 100 | 100 | 100 |
| Liquid      | Tanker Truck          | 100   | 100 | 35  | 35  | 35/15 <sup>c</sup> | 15  | 15  | 15  | 35  | 100 | 100 | 100 |
| Solid       | Spreader              | 100   | 100 | 35  | 35  | 35/15 <sup>c</sup> | 15  | 15  | 15  | 35  | 100 | 100 | 100 |

Note:

- a. Setbacks are the distance between open waterways and manure application area.
- b. Setback requirements will generally increase for manures which are applied aerially (such as a traveling big gun) versus manures applied lower to the ground (such as a splash bar) due to potential for drift from wind or splashing.
- c. This is a floating date and should be evaluated based on current weather conditions and forecast information.
- d. Fifteen (15) feet is the suggested setback distance during summer months, however larger and/or smaller distances may be set depending on conversations with the ODA.

Record applications, transfers or exports of nutrients (manure and fertilizer) and maintain them for at least 5 years. The CAFO Recordkeeping Calendar or other acceptable record keeping systems can be used to record this information.

### **CONSIDERATIONS FOR DRY SEASON MANURE APPLICATIONS:**

Apply wastewater and solids containing manure at agronomic rates using the following guidelines:

- Consider using T-Sum 200 as a guideline to begin making manure applications.
- Do not apply to soils immediately before or during rainfall events that are expected to result in saturated soils or surface runoff.
- Apply to land being prepared for crops. Till manure into soil within 3 days of application if possible or apply to actively growing crops such as grass, clover or alfalfa after cutting.
- Maintain the setback buffer distances described in this section and shown on the Setback Map when making applications of liquids or solids containing manure.
- Record applications, transfers or exports of nutrients (manure and fertilizer) and maintain them for at least 5 years. The CAFO Recordkeeping Calendar or other acceptable record keeping systems can be used to record this information.

## **SECTION 3 - UTILIZATION AREA**

### **CONSIDERATIONS FOR WET SEASON MANURE APPLICATIONS:**

Only apply manure during this time period if the following guidelines CAN be met. Call the ODA CAFO Program at (503) 986-4700 for guidance if a manure application is needed and the following guidelines CANNOT be met:

- Apply manure only to actively growing crops such as grass, clover or alfalfa.
- Minimize application rates by using the maximum travel rates for the application equipment.
- Maintain the setback buffer distances described in this section and shown on the Setback Map when making applications of liquids or solids containing manure.
- Do not apply to soils immediately before or during rainfall events that are expected to result in saturated soils or surface runoff.
- Do not apply to saturated or flooded soils. It is recommended that application(s) be limited to soils (areas) where the flooding frequency class rating is None, Very Rare or Rare.
- Do not apply to slopes greater than 5%. See the Soil Map in Section 4-1 for the location of soil map units with slopes greater than 5%.

Applications of wastewater or solids containing manure to frozen soils should be avoided. Do the following if an application of wastewater or solids containing manure is to be made to frozen soils:

- Apply only enough wastewater or solids containing manure to address storage limitations until suitable soil conditions for application are available.
- Minimize applications to 5 wet tons per acre or less of solids containing manure and 6,788 gallons (0.25 inches) per acre or less of wastewater.
- Apply to alternating strips to reduce the risk of contaminated runoff reaching surface water sources.
- Apply to fields of established hay, pasture or fields containing at least 90% cover and are the furthest from open water sources.
- Do not apply wastewater or solids containing manure within 200 feet of surface water sources, drainageways, wells, or inlets to subsurface drainage systems.
- Runoff control systems such as earthen dikes must be in place where applications will be made to fields with slopes greater than 5%.

Record applications, transfers or exports of nutrients (manure and fertilizer) and maintain them for at least 5 years. The CAFO Recordkeeping Calendar or other acceptable record keeping systems can be used to record this information.

Do not apply manure or commercial fertilizer to fields receiving applications unless the nutrients applied in the manure are less than the annual application of nutrients planned in the nutrient budget for the fields.

### **HOW TO CALIBRATE APPLICATION EQUIPMENT**

Calibration of application equipment is a critical part of nutrient management. Calibration should be completed at least annually to insure manure and fertilizer will be uniformly applied. There are two basic approaches for calibrating a manure spreader – the load area and the weight area methods. The load area method is more accurate and can be used for both liquid and solid manure. The weight area method works only with solid or semi-solid manure.

## SECTION 3 - UTILIZATION AREA

### Irrigation System Calibration

Place 3-5 buckets throughout the irrigation spray pattern and collect samples while operating the pump at a given rpm and pressure (for a traveling gun record the travel speed also). At the end of the planned sample period measure the amount of liquid collected in inches (average the samples). The following chart shows how many gallons per acre applied per inch of liquid applied:

| <u>Inches Liquid Manure Applied</u> | <u>Gallons per Acre</u> |
|-------------------------------------|-------------------------|
| 0.20                                | 5,431                   |
| 0.30                                | 8,146                   |
| 0.40                                | 10,862                  |
| 0.50                                | 13,577                  |
| 0.75                                | 20,366                  |
| 1.00                                | 27,152                  |
| 1.25                                | 33,943                  |
| 1.50                                | 40,731                  |

### Soft Hose Injection System with Irrigation Hose:

Alternative 1. Use a flow meter mounted on the injector system and calculate the distance and width to determine amount applied over a measured area. Example the flow meter measures 1,000 gallons over a distance of 600 feet and 10 feet wide.

Formula: Application Rate (7,260 gallons/acre) = (Gallons Applied (1,000 gal) X 43,560 sq. ft/acre) divided by (Distance traveled (600 ft) X Application width (10 ft))

Alternative 2. (Requires a 10-20 gallon graduated measuring container)

Step 1) In the field, measure the flow out of one injector for 5 seconds into the graduated measuring container and record gallons, repeat three (3) times and average the results.

Step 2) Multiply the average amount collected from one injector by the number of injectors (equals amount applied for the whole system for 5 seconds).

Step 3) Multiply the results of Step 2 times 12 to get gallons per minute.

Step 4) Place the injector in the soil at the planned depth and operating speed and record the distance traveled in 1 minute (average 3 different measurements).

Step 5) Determine the effective application width (number of injectors X injector spacing in feet).

Step 6) Multiply the effective width times the distance traveled in 1 minute (this gives the square feet covered in 1 minute).

Step 7) Divide the result of Step 6 by 43,560 (this gives the acres covered in 1 minute).

Step 8) Divide the results of Step 3 (gallons per minute) by the results of Step 7 (acres covered in 1 minute) - (this gives the gallons applied per acre).

For example:

Step 1) Collect an average of 6 gallons from one injector for 5 seconds.

Step 2) Applicator has 8 injectors (8 injectors X 6 gallons per injector = 48 gallons for 5 seconds)

Step 3) 48 gallons in 5 seconds X 12 = 576 gallons/minute applied

Step 4) Average distance covered in 1 minute was 250 feet

Step 5) Average width of the applicator is 12 feet.

Step 6) 12 feet wide X 250 feet long = 3000 square feet

Step 7) 3000 square feet divided by 43,560 square feet/acre = .0688 acres covered in 1 minute

Step 8) 576 gallons/minute divided by .0688 acres/minute = 8,372 gallons/acre.

## **SECTION 3 - UTILIZATION AREA**

### **Manure Spreader/Tanker Calibration**

There are several methods that can be used to calibrate the application rate of a manure spreader. The two best methods are the load-area method and the weight-area method. It is desirable to repeat the calibration procedure 2 to 3 times and average the results to establish a more accurate calibration. Before calibrating a manure spreader, the spreader settings such as splash plates should be adjusted so that the spread is uniform. Most spreaders tend to deposit more manure near the middle than at the edge of the spread pattern. Overlapping can make the overall application more uniform. Calibrating application rates when overlapping is involved requires measuring the width of two spreads and dividing by two to get the effective spread width. Calibration should take place annually or whenever manure is being applied from a different source or consistency.

### **Load-Area Method:**

The load-area method is the most accurate and can be used for both liquid and solid manure. The load area method is a 3-step process:

Step 1) Determine the amount of manure in the spreader. The most accurate way to determine the amount of manure in a spreader is weighting the spreader when it is empty and again when it is full. For a reliable estimate of spreader capacity, weigh several representative loads (at least five) to determine the average gross weight. Subtract the empty spreader weight. Then, calculate the average net loaded weight.

Step 2) Determine the area of spread using the method at the right. Width measurements near the beginning and end of the spread pattern should be avoided because the spreader may not be operating at full capacity.

Step 3) Calculate the application rate. The application rate is calculated using the formula for either liquid or solid manure.

Formula for Solid Manure Equals Tons/Acre

(Average Loaded Weight (lbs) x 21.81) divided by (Distance Traveled (ft) x Width of Spread (ft))

Formula for Liquid Manure Equals Gal/Acre

(Tank Volume (gal) x 43,560) divided by (Distance Traveled (ft) x Width of Spread (ft))

### **Weight-Area Method:**

The weight-area method can only be used with solid or semi-solid manure. When a scale is not available, the application rate of a box spreader can be determined by collecting manure on a tarp or piece of heavy material. The weight area method is less accurate than the load area method.

This method consists of eight steps:

Step 1) Prepare/cut three 56-inch square tarps or pieces of heavy material (this size equals 1/2,000 of an acre). The pounds of manure collected on 56 inches square equals tons applied per acre.

Step 2) Weigh one of the clean tarps and a large bucket on a platform scale. Record the weight.

Step 3) Anchor the three tarps in the field ahead of the spreader near the beginning, middle, and end of the area that will be spread with one load.

Step 4) Drive over the three tarps at a normal speed to collect a representative manure sample.

Step 5) Fold and place the first tarp into the empty bucket without spilling the manure.

Weigh the bucket, tarp, and manure. Subtract the weight of the clean tarp and bucket recorded in step 2.

Step 6) Repeat the process for each of the two remaining tarps.

## **SECTION 3 - UTILIZATION AREA**

Calculate the average weight (pounds) of the manure collected. This value equals tons of manure applied per acre.

Factor for converting pounds to tons and square feet to acres ( $21.8 = 43,560 \text{ sq ft per acre divided by } 2,000 \text{ lbs/ton}$ ).

The factor for converting square feet to acres =  $43,560 \text{ sq ft per acre}$ .

Step 7) Determining Area of Spread.

The "area of spread" is the length and width of the ground covered with one load of manure. The area of spread is affected by speed and equipment settings. Spreaders discharge manure at varying rates depending on travel and PTO speed, gear box settings, and discharge openings. It is important to adjust the spreader so the pattern is as uniform as possible. Accurately measuring the length and width of this area is essential. To determine width, measure two adjacent spreads and divide by two to find the "effective" spread width. This accounts for overlap, which is often needed for a more uniform application. The length of spread is determined using the following three values:

Desired manure application rate based on soil and manure tests,

Width of the manure spread, and

Manure spreader holding capacity (weight and/or volume).

From these values, calculate the distance or lengths of spread using these formulas:

Formula: Solid Manure Equals Feet/Load

$(\text{Average Load Weight (lbs)} \times 21.81) \text{ divided by } (\text{Spread Width (ft)} \times \text{App. Rate (tons/ac)})$

Formula: Liquid Manure Equals Feet/Load

$(\text{Tank Volume (gal)} \times 43,560) \text{ divided by } (\text{Spread Width (ft)} \times \text{Desired App. Rate (gal/ac)})$

Step 8) Spread a load. If the distance traveled does not equal the calculated distance, adjust the speed or equipment settings.

### **AMOUNT OF MANURE TO APPLY FOR CROPS GROWN**

The formulas for determining the total nutrient application rate per unit yield for each crop shown in the table below are as follows:

Total N to apply in pounds = N in pounds per yield unit from the table for the crop grown X Yield Units per Acre X actual percent (%) dry matter (DM) of harvested crop/percent (%) dry matter (DM) from table

Total  $P_2O_5$  to apply in pounds = P in pounds per yield unit from the table for the crop grown X Yield Units per Acre X  $2.291 P_2O_5/P$  X actual percent (%) dry matter (DM) of harvested crop/percent (%) dry matter (DM) from table

Total  $K_2O$  to apply in pounds = K in pounds per yield unit from the table for the crop grown X Yield Units per Acre X  $1.205 K_2O/K$  X actual percent (%) dry matter (DM) of harvested crop/percent (%) dry matter (DM) from table

Example- for a field with 5 tons per acre of grass/legume hay harvested at 90% dry matter:

Total N to apply in pounds per acre =  $(33.92 \text{ lb N / ton}) \times (5 \text{ tons / acre}) \times (90\% \text{DM} / 100\% \text{DM}) = 153 \text{ lbs N / acre}$

## SECTION 3 - UTILIZATION AREA

The following tables show the crops that may be grown on this farm:

### FRUIT OR VEGETABLES

|                          | Yield Unit | lb/Unit | % DM | Nutrient Removal (lb/yield unit) |      |       |
|--------------------------|------------|---------|------|----------------------------------|------|-------|
|                          |            |         |      | N                                | P    | K     |
| Beans, dry edible        | cwt        | 100     | 100  | 3.13                             | 0.45 | 0.85  |
| Blueberries              | ton        | 2000    | 100  | 13.93                            | 1.30 | 11.57 |
| Caneberries              | ton        | 2000    | 100  | 11.43                            | 7.42 | 11.43 |
| Corn, Sweet              | ton        | 2000    | 100  | 20.67                            | 5.60 | 13.66 |
| Grapes                   | ton        | 2000    | 100  | 11.39                            | 1.07 | 20.43 |
| Mixed Vegetables & Fruit | ton        | 2000    | 100  | 8.33                             | 2.08 | 10.20 |
| Onions                   | cwt        | 100     | 100  | 0.18                             | 0.04 | 0.13  |
| Orchard, Fruit           | ton        | 2000    | 100  | 13.00                            | 2.00 | 16.00 |
| Pea, edible              | ton        | 2000    | 100  | 73.60                            | 8.00 | 18.00 |
| Potatoes                 | ton        | 2000    | 100  | 30.0                             | 5.45 | 47.27 |
| Squash                   | ton        | 2000    | 100  | 21.33                            | 6.80 | 11.40 |

### GRAIN, SEED OR OIL CROPS

|   | Yield Unit | lb/Unit | % DM | Nutrient Removal (lb/yield unit) |       |       |
|---|------------|---------|------|----------------------------------|-------|-------|
|   |            |         |      | N                                | P     | K     |
| Barley  | bushels    | 48      | 100  | 0.87                             | 0.16  | 0.21  |
| Beets, sugar                                  | ton        | 2000    | 100  | 4.00                             | 0.60  | 2.78  |
| Bluegrass, Seed                               | cwt        | 100     | 100  | 2.88                             | 0.43  | 1.98  |
| Canola  | ton        | 2000    | 100  | 70.00                            | 12.00 | 18.00 |
| Corn, grain shelled                           | bushels    | 56      | 100  | 0.90                             | 0.16  | 0.22  |
| Crimson Clover seed                           | lb         | 1       | 100  | 0.05                             | 0.01  | 0.02  |
| Fescue Seed, Straw Removed                    | cwt        | 100     | 100  | 1.97                             | 0.20  | 2.00  |
| Fescue, seed (Fine or Tall)                   | lb         | 1       | 100  | 1.47                             | 0.31  | 1.67  |
| Oats, grain                                   | bushels    | 32      | 100  | 0.62                             | 0.11  | 0.16  |
| Orchardgrass seed                             | lb         | 1       | 100  | 0.016                            | 0.002 | 0.004 |
| Peppermint for Oil                            | ton        | 2000    | 100  | 4.20                             | 1.80  | 2.80  |
| Peppermint for Oil,<br>Leaves & Stems Removed | ton        | 2000    | 100  | 87.23                            | 36.80 | 57.80 |
| Pumpkins                                      | ton        | 2000    | 100  | 4.00                             | 1.40  | 6.60  |
| Rapeseed                                      | bushels    | 50      | 100  | 1.38                             | 0.30  | 0.30  |
| Red Clover seed                               | cwt        | 100     | 100  | 4.55                             | 1.00  | 2.00  |
| Ryegrass seed                                 | cwt        | 100     | 100  | 1.67                             | 0.27  | 1.42  |
| Ryegrass Seed,<br>Straw Removed               | ton        | 2000    | 100  | 30.00                            | 18.80 | 37.60 |
| Ryegrass, Perennial seed                      | lb         | 1       | 100  | 0.02                             | 0.002 | 0.004 |
| Wheat, Soft White for grain                   | bushels    | 60      | 100  | 1.00                             | 0.24  | 0.21  |
| Wheat, Soft White,<br>Straw Removed           | ton        | 2000    | 100  | 43.40                            | 8.90  | 20.90 |
| Wheat, Hard Red for grain                     | bushels    | 60      | 100  | 1.60                             | 0.37  | 0.31  |
| Wheat, Hard Red,<br>Straw Removed             | ton        | 2000    | 100  | 53.36                            | 10.96 | 23.76 |

## SECTION 3 - UTILIZATION AREA

### HAY AND PASTURE CROPS

|                             | Yield Unit | lb/Unit | % DM | Nutrient Removal (lb/yield unit) |       |       |
|-----------------------------|------------|---------|------|----------------------------------|-------|-------|
|                             |            |         |      | N                                | P     | K     |
| Alfalfa, Hay                | ton        | 2000    | 100  | 54.40                            | 6.83  | 35.70 |
| Alfalfa, Seed               | cwt        | 100     | 100  | 6.12                             | 0.70  | 2.34  |
| Alta Fescue Hay/Pasture     | ton        | 2000    | 100  | 32.98                            | 6.88  | 37.60 |
| Grass Legume Hay/Pasture    | ton        | 2000    | 100  | 33.92                            | 5.30  | 7.56  |
| Meadow Fescue Hay/Pasture   | ton        | 2000    | 100  | 41.56                            | 8.70  | 47.43 |
| Oats Hay/Pasture            | ton        | 2000    | 100  | 26.01                            | 10.20 | 14.79 |
| Orchardgrass Hay/Pasture    | ton        | 2000    | 100  | 53.21                            | 8.58  | 18.62 |
| Perennial Grass Hay/Pasture | ton        | 2000    | 100  | 58.00                            | 8.00  | 40.00 |
| Reed Canary Grass           | ton        | 2000    | 100  | 27.00                            | 3.57  | 41.57 |
| Ryegrass Hay                | ton        | 2000    | 100  | 33.41                            | 5.44  | 28.39 |
| Ryegrass, Perennial Pasture | ton        | 2000    | 100  | 58.00                            | 8.00  | 48.00 |
| Sorghum-Sudan Haylage       | ton        | 2000    | 100  | 54.40                            | 6.40  | 58.00 |
| Tall Fescue Hay/Pasture     | ton        | 2000    | 100  | 39.40                            | 4.00  | 40.00 |
| Vetch Hay                   | ton        | 2000    | 100  | 51.93                            | 7.20  | 44.76 |

### SILAGE AND HAYLAGE CROPS

|                          | Yield Unit | lb/Unit | % DM | Nutrient Removal (lb/yield unit) |      |       |
|--------------------------|------------|---------|------|----------------------------------|------|-------|
|                          |            |         |      | N                                | P    | K     |
| Alfalfa/Grass Haylage    | ton        | 2000    | 100  | 15.60                            | 1.02 | 6.84  |
| Corn for Silage          | ton        | 2000    | 100  | 25.00                            | 4.00 | 20.00 |
| Crimson Clover forage    | ton        | 2000    | 100  | 40.00                            | 4.48 | 33.28 |
| Field Pea, Forage        | ton        | 2000    | 100  | 73.60                            | 8.00 | 18.00 |
| Mustard, White           | ton        | 2000    | 100  | 38.55                            | 0.0  | 0.0   |
| Oat haylage              | ton        | 2000    | 100  | 26.0                             | 10.2 | 14.8  |
| Oats & Peas/ Green Beans | ton        | 2000    | 100  | 32.03                            | 5.58 | 18.65 |
| Perennial Grass Haylage  | ton        | 2000    | 100  | 15.00                            | 2.40 | 12.78 |
| Red Clover forage        | ton        | 2000    | 100  | 40.00                            | 4.41 | 32.98 |
| Ryegrass Haylage         | ton        | 2000    | 100  | 15.00                            | 2.40 | 12.78 |
| Sorghum-Sudan Haylage    | ton        | 2000    | 100  | 16.32                            | 1.92 | 17.40 |
| Triticale Haylage        | ton        | 2000    | 100  | 49.00                            | 6.80 | 11.40 |
| Vetch Haylage            | ton        | 2000    | 100  | 59.67                            | 6.57 | 50.00 |
| Wheat Haylage            | ton        | 2000    | 100  | 41.30                            | 5.00 | 57.30 |
| Wheatgrass Hay/Pasture   | ton        | 2000    | 100  | 49.59                            | 6.21 | 68.76 |

### OTHER CROPS

|                              | Yield Unit | lb/Unit | % DM | Nutrient Removal (lb/yield unit) |      |       |
|------------------------------|------------|---------|------|----------------------------------|------|-------|
|                              |            |         |      | N                                | P    | K     |
| Filberts                     | ton        | 2000    | 100  | 41.70                            | 7.30 | 39.29 |
| Hops, Cones                  | bale       | 200     | 100  | 9.00                             | 0.96 | 5.00  |
| Natural Area (Trees & Grass) | ton        | 2000    | 100  | 10.52                            | 1.56 | 9.20  |
| Nursery Stock                | ton        | 2000    | 100  | 8.33                             | 2.08 | 10.20 |
| Poplars, Pulpwood            | ton        | 2000    | 100  | 0.30                             | 0.09 | 0.12  |
| Hemp/Cannabis                | ton        | 2000    | 100  | 31.09                            | 3.37 | 36.23 |

Note: Nutrient uptake values are taken from the NRCS National Agricultural Waste Management Field Handbook and updated with more current information from the Extension Service when available. When nutrient uptake values are not available from NRCS or Extension references, then nutrient uptake data from the NRCS Plant Database or other approved data sources is used.

# SECTION 3 - UTILIZATION AREA

## Nutrient Applications



# Nutrient Applications Report

3R Cattle LLC  
Ontario

### Hay/Pasture1

| Date                 | Source | Equipment Used | % of Field | Amount Applied | N lbs/ac | P <sub>2</sub> O <sub>5</sub> lbs/ac | K <sub>2</sub> O lbs/ac |
|----------------------|--------|----------------|------------|----------------|----------|--------------------------------------|-------------------------|
| 03/03                | WSL1   | Vacuum Truck   | 100        | 1.4 In/Ac      | 285      | 72                                   | 151                     |
| Hay/Pasture1 Totals: |        |                |            |                | 285      | 72                                   | 151                     |

### Hay/Pasture2

| Date                 | Source | Equipment Used | % of Field | Amount Applied | N lbs/ac | P <sub>2</sub> O <sub>5</sub> lbs/ac | K <sub>2</sub> O lbs/ac |
|----------------------|--------|----------------|------------|----------------|----------|--------------------------------------|-------------------------|
| 03/17                | WSL1   | Vacuum Truck   | 100        | 1.4 In/Ac      | 285      | 72                                   | 151                     |
| Hay/Pasture2 Totals: |        |                |            |                | 285      | 72                                   | 151                     |

### Pivot

| Date          | Source | Equipment Used | % of Field | Amount Applied | N lbs/ac | P <sub>2</sub> O <sub>5</sub> lbs/ac | K <sub>2</sub> O lbs/ac |
|---------------|--------|----------------|------------|----------------|----------|--------------------------------------|-------------------------|
| 11/24         | WSL2   | Center Pivot   | 100        | 0.7 In/Ac      | 143      | 36                                   | 76                      |
| Pivot Totals: |        |                |            |                | 143      | 36                                   | 76                      |

### Wheeline

| Date             | Source | Equipment Used | % of Field | Amount Applied | N lbs/ac | P <sub>2</sub> O <sub>5</sub> lbs/ac | K <sub>2</sub> O lbs/ac |
|------------------|--------|----------------|------------|----------------|----------|--------------------------------------|-------------------------|
| 02/03            | WSL2   | Vacuum Truck   | 100        | 1 In/Ac        | 204      | 52                                   | 108                     |
| Wheeline Totals: |        |                |            |                | 204      | 52                                   | 108                     |

## SECTION 3 - UTILIZATION AREA

### Sampling Guidance

#### Manure and Soil Sampling Frequency

For large concentrated animal feeding operations, sample liquids and solids containing manure during applications in early spring annually and have each sample analyzed for Total Nitrogen (TKN), Ammonium Nitrogen (NH<sub>4</sub>-N), Phosphorus (P<sub>2</sub>O<sub>5</sub>) and Potassium (K<sub>2</sub>O) plus percent moisture. Ask the lab to report results in pounds per ton for the solids containing manure and in pounds per thousand gallons for liquids containing manure. Analyses of solids and liquids containing manure should be performed by a laboratory that meets the requirements and performance standards of the Manure Testing Laboratory Certification Program

(MTLCP), <http://www2.mda.state.mn.us/webapp/lis/manurelabs.jsp>.

For small and medium animal feeding operations, if no samples of liquids and solids containing manure have been taken, take a sample of liquids and solids during applications in early spring once a year for three consecutive years to develop a cumulative manure analysis history as a basis for nutrient allocation to the fields. If there is a sampling history of liquids and solids containing manure, take a sample of liquids and solids during applications in early spring once every 5 years or whenever a significant change in animal numbers or in the manure handling system occurs. Have each sample analyzed for Total Nitrogen (TKN), Ammonium Nitrogen (NH<sub>4</sub>-N), Phosphorus (P<sub>2</sub>O<sub>5</sub>) and Potassium (K<sub>2</sub>O) plus percent moisture. Ask the lab to report results in pounds per ton for the solids containing manure and in pounds per thousand gallons for liquids containing manure. Analyses of solids and liquids containing manure should be performed by a laboratory that meets the requirements and performance standards of the Manure Testing Laboratory Certification Program

Large CAFO's are required to test a minimum of 20 percent of their fields annually which would result in all of the fields being tested once every 5 years. Small and Medium CAFO's are only required to test all of their fields once every 5 years. However, from a management standpoint, more frequent soil testing offers good information on the nutrient status of your soils.

Collect soil samples from 20 percent of the fields receiving solids or liquids containing manure **annually** in the fall after harvest or before rains begin (typically September 15-October 15) in accordance with **Pacific Northwest (PNW) Extension publication 570-E, "Monitoring Soil Nutrients Using a Management Unit Approach"**, <https://catalog.extension.oregonstate.edu/pnw570>. Have the soil samples analyzed for Total Nitrogen (TKN) and Phosphorus (P) and ask the lab to report results in parts per million (ppm). Soil test analyses should be performed by laboratories that meet the requirements and performance standards of the North American Proficiency Testing Program (NAPT) Proficiency Assessment Program (PAP); <http://www.naptprogram.org/pap/>.

#### How to Sample Liquid Manure

Obtain a composite following one of the procedures listed below and thoroughly mix. Using a plunger, an up-and-down action works well for mixing liquid manure in a five-gallon bucket. Fill a one-quart plastic bottle not more than three-quarters full with the composite sample. Store sample in freezer if not delivered to the lab immediately.

**Procedure 1.** Sampling from storage- Agitate storage facility thoroughly before sampling. Collect at least five samples from the storage facility or during loading using a five-gallon bucket. Place a sub sample of the composite sample in a one-quart plastic container. Sampling a liquid manure storage facility without proper agitation (2-4 hrs. minimum) is not recommended due to nutrient stratification, which occurs in liquid systems. If manure is sampled from a lagoon that was not properly agitated, typically the nitrogen and potassium will be more concentrated in the top liquid, while the phosphorus will be more concentrated in the bottom solids.

**Procedure 2.** Sampling during application- Place buckets around field to catch manure from spreader or irrigation equipment. Combine and mix samples into one composite sub sample in a one-quart plastic container.

## **How to Sample Solid Manure**

Collect a composite sample by following one of the procedures listed below. A method for mixing a composite sample is to pile the manure and then shovel from the outside to the inside of the pile until well mixed. Fill a one-gallon plastic heavy-duty zip lock bag approximately one-half full with the composite sample, squeeze out excess air, close and seal. Store sample in freezer if not delivered to the laboratory immediately.

**Procedure 1.** Sampling while loading - Recommended method for sampling from a stack or bedded pack. Take at least ten samples while loading several spreader loads and combine to form one composite sample. Thoroughly mix the composite sample and take an approximately one pound sub sample using a one-gallon plastic bag. Sampling directly from a stack or bedded pack is not recommended.

**Procedure 2.** Sampling during spreading - Spread a tarp in field and catch the manure from one pass. Sample from several locations and create a composite sample. Thoroughly mix the composite sample together and take a one-pound sub sample using a one-gallon plastic bag.

**Procedure 3.** Sampling daily haul - Place a five-gallon bucket under the barn cleaner 4-5 times while loading a spreader. Thoroughly mix the composite sample together and take a one-pound sub sample using a one-gallon plastic bag. Repeat sampling 2-3 times over a period of time and test separately to determine variability.

**Procedure 4.** Sampling poultry in-house - Collect 8-10 samples from throughout the house to the depth the litter will be removed. Samples near feeders and waterers may not be indicative of the entire house and sub samples taken near here should be proportionate to their space occupied in the whole house. Mix the samples well in a five-gallon pail and take a one-pound sub sample, place it in a one-gallon zip lock bag.

**Procedure 5.** Sampling stockpiled litter - Take ten sub samples from different locations around the pile at least 18 inches below the surface. Mix in a five-gallon pail and place a one-pound composite sample in a gallon zip lock bag.

## **Sample Identification and Delivery**

Identify the sample container with information regarding the farm, animal species and date. This information should also be included on the sample information sheet along with application method, which is important in determining first year availability of nitrogen.

Keep all manure samples frozen until shipped or delivered to a laboratory. Ship early in the week (Mon.-Wed.) and avoid holidays and weekends.

## **How to Sample Soils**

Current soil tests must be used in the development and editing of nutrient management plans. A current soil test is one that is no older than 5 years that is used to represent the nutrient status of the entire field. Soil analysis must be performed by laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program-Performance Assessment Program (NAPT-PAP). Results of these analysis will be used to determine application rates for manure, litter, and process wastewater. Guidance for soil sampling can be found in the **Pacific Northwest (PNW) Extension publication 570-E, “Monitoring Soil Nutrients Using a Management Unit Approach”**, <https://catalog.extension.oregonstate.edu/pnw570>. **Oregon State University Extension publication EC1478, “Soil Test Interpretation Guide”**, <https://catalog.extension.oregonstate.edu/ec1478> provides guidance on how to determine soil nutrient concentrations and how to adjust soil pH to improve nutrient availability.

**Field Area.** A composite soil sample should represent a uniform field area. Each area should have similar crop and fertility history. Soil characteristics (color, slope, texture, drainage) should be similar. Exclude small areas within a field that are obviously different. The field area represented by a single composite sample should represent no more than 40 irrigated acres or 100 dry land acres.

**Sampling Depth.** Laboratory tests are calibrated to specific depths. It is vital to collect samples from appropriate depths. Sampling depth for most soils is the rooting depth in 6-inch intervals. In Oregon, as a minimum, soil samples should be collected from the 0-12" depth. The 0-6" surface soil samples are normally used for conventional tests of organic matter, nitrogen, phosphorus, potassium, pH and salt levels. Additionally, subsurface samples from the 6-24" depth are needed to estimate nitrogen availability for crops grown in dry land areas.

**Post Harvest Soil Testing for Evaluating Nutrient Applications.** Refer to **Pacific Northwest (PNW) Extension publication 570-E, "Monitoring Soil Nutrients Using a Management Unit Approach"**, <https://catalog.extension.oregonstate.edu/pnw570>, for guidance on how to evaluate nutrient applications and crop uptake of nutrients.

# SECTION 3 - UTILIZATION AREA

## Manure Tests



## Nutrient Analysis Report

3R Cattle LLC

Ontario

| Sample Date | Storage Name         | Units       | Total N | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | NH <sub>4</sub> -N | NO <sub>3</sub> -N | Org N | Density Lbs/CF |
|-------------|----------------------|-------------|---------|-------------------------------|------------------|--------------------|--------------------|-------|----------------|
| 01/01/2024  | WSL1                 | lbs/1000gal | 7.5     | 1.9                           | 3.98             | 3.5                | 0.0                | 4     | 62.0           |
| 01/01/2024  | WSL2                 | lbs/1000gal | 7.5     | 1.9                           | 3.98             | 3.5                | 0.0                | 4     | 62.0           |
| 05/10/2023  | East Pens            | lbs/Ton     | 7.4     | 10.2                          | 19.8             | 3.5                | 0.0                | 3.9   | 36.0           |
| 05/10/2023  | West Pens            | lbs/Ton     | 7.4     | 10.2                          | 19.8             | 3.5                | 0.0                | 3.9   | 36.0           |
| 01/01/2023  | Compost Storage Area | lbs/Ton     | 7.4     | 10.2                          | 19.8             | 3.5                | 0.0                | 3.9   | 36.0           |

# SECTION 3 - UTILIZATION AREA

## Soil Tests



### Soils Testing Report

3R Cattle LLC

4250 Hopkins Rd, Ontario

#### Soils Testing Report - 3R Cattle LLC

| Test Date | Lab # | Sample ID | Depth | pH | BpH | SS (ppm) | OM % | Ex Carb | Bray P | Olsen P | K (ppm) | Mg | Ca | Na | NO3-N | NH4-N | S (ppm) | B (ppm) | Zn (ppm) | Mn (ppm) | Cu (ppm) | Fe (ppm) | Al (ppm) | Cl (ppm) |
|-----------|-------|-----------|-------|----|-----|----------|------|---------|--------|---------|---------|----|----|----|-------|-------|---------|---------|----------|----------|----------|----------|----------|----------|
|-----------|-------|-----------|-------|----|-----|----------|------|---------|--------|---------|---------|----|----|----|-------|-------|---------|---------|----------|----------|----------|----------|----------|----------|

#### Hay/Pasture1

|           |       |          |      |     |  |     |      |  |  |      |       |         |          |         |          |         |      |      |     |      |     |      |  |  |
|-----------|-------|----------|------|-----|--|-----|------|--|--|------|-------|---------|----------|---------|----------|---------|------|------|-----|------|-----|------|--|--|
| 5/18/2022 | 30351 | WHEELINE | 12.0 | 7.5 |  | 2.8 | 2.57 |  |  | 39.0 | 655.0 | 6.1 meq | 12.4 meq | 0.8 meq | 42.0 ppm | 3.9 ppm | 15.0 | 0.69 | 3.3 | 11.7 | 1.7 | 12.9 |  |  |
|-----------|-------|----------|------|-----|--|-----|------|--|--|------|-------|---------|----------|---------|----------|---------|------|------|-----|------|-----|------|--|--|

#### Hay/Pasture2

|           |       |          |      |     |  |     |      |  |  |      |       |         |          |         |          |         |      |      |     |      |     |      |  |  |
|-----------|-------|----------|------|-----|--|-----|------|--|--|------|-------|---------|----------|---------|----------|---------|------|------|-----|------|-----|------|--|--|
| 5/18/2022 | 30351 | WHEELINE | 12.0 | 7.5 |  | 2.8 | 2.57 |  |  | 39.0 | 655.0 | 6.1 meq | 12.4 meq | 0.8 meq | 42.0 ppm | 3.9 ppm | 15.0 | 0.69 | 3.3 | 11.7 | 1.7 | 12.9 |  |  |
|-----------|-------|----------|------|-----|--|-----|------|--|--|------|-------|---------|----------|---------|----------|---------|------|------|-----|------|-----|------|--|--|

#### Pivot

|           |       |             |      |     |  |     |       |  |  |      |       |         |          |         |          |         |      |      |     |     |     |     |  |  |
|-----------|-------|-------------|------|-----|--|-----|-------|--|--|------|-------|---------|----------|---------|----------|---------|------|------|-----|-----|-----|-----|--|--|
| 4/11/2022 | 26143 | ONTARIO PVT | 12.0 | 7.8 |  | 2.4 | 12.32 |  |  | 39.0 | 603.0 | 5.1 meq | 14.2 meq | 0.9 meq | 45.0 ppm | 4.9 ppm | 21.0 | 1.14 | 3.2 | 7.6 | 1.6 | 8.0 |  |  |
|-----------|-------|-------------|------|-----|--|-----|-------|--|--|------|-------|---------|----------|---------|----------|---------|------|------|-----|-----|-----|-----|--|--|

#### Wheeline

|           |       |          |      |     |  |     |      |  |  |      |       |         |          |          |          |         |      |      |     |      |     |      |  |  |
|-----------|-------|----------|------|-----|--|-----|------|--|--|------|-------|---------|----------|----------|----------|---------|------|------|-----|------|-----|------|--|--|
| 5/18/2022 | 30351 | WHEELINE | 12.0 | 7.5 |  | 2.8 | 2.57 |  |  | 39.0 | 655.0 | 6.1 meq | 12.4 meq | 12.4 meq | 42.0 ppm | 3.9 ppm | 15.0 | 0.69 | 3.3 | 11.7 | 1.7 | 12.9 |  |  |
|-----------|-------|----------|------|-----|--|-----|------|--|--|------|-------|---------|----------|----------|----------|---------|------|------|-----|------|-----|------|--|--|

Soil test analyses should be performed by laboratories that meet the requirements and performance standards of the North American Proficiency Testing Program (NAPT) Proficiency Assessment Program (PAP);

<http://www.naptprogram.org/pap/>

## SECTION 3 - UTILIZATION AREA

### Nutrient Balances



## Nutrient Balances Report

3R Cattle LLC

Ontario

| Field        | Acres | Crop                        | Yield | Nutrient Uptake (lbs/ac) |                               |                  | Nutrient Applied (lbs/ac) |                               |                  | Nutrient Balance (lbs/ac) |                               |                  |
|--------------|-------|-----------------------------|-------|--------------------------|-------------------------------|------------------|---------------------------|-------------------------------|------------------|---------------------------|-------------------------------|------------------|
|              |       |                             |       | N                        | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | N                         | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O | N                         | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O |
| Hay/Pasture1 | 4.2   | Grass Hay/Pasture           | 5 Ton | 290                      | 92                            | 241              | 285                       | 72                            | 151              | (-5)                      | (-19)                         | (-90)            |
| Hay/Pasture2 | 3.9   | Grass Hay/Pasture           | 5 Ton | 290                      | 92                            | 241              | 285                       | 72                            | 151              | (-5)                      | (-19)                         | (-90)            |
| Pivot        | 76.5  | Corn, Silage                | 6 Ton | 150                      | 55                            | 145              | 143                       | 36                            | 76               | (-7)                      | (-19)                         | (-69)            |
| Wheeline     | 46.0  | Wheat, Winter Straw Removed | 4 Ton | 213                      | 100                           | 115              | 204                       | 52                            | 108              | (-10)                     | (-49)                         | (-6)             |

## SECTION 3 - UTILIZATION AREA

### Transferred Nutrients



## Transfers Report

3R Cattle LLC

Ontario

| Exported from        | Date Transferred | Quantity   | Analysis Available | Total N lbs | P <sub>2</sub> O <sub>5</sub> lbs | K <sub>2</sub> O lbs | Exported to       |
|----------------------|------------------|------------|--------------------|-------------|-----------------------------------|----------------------|-------------------|
| Compost Storage Area | 04/07            | 120,433 CF | Yes                | 16,041.68   | 9,651.46                          | 35,620.18            | Livestock Pens    |
| Compost Storage Area | 05/05            | 120,434 CF | Yes                | 16,041.81   | 9,651.54                          | 35,620.48            | Livestock Pens    |
| Compost Storage Area | 09/08            | 120,434 CF | Yes                | 16,041.81   | 9,651.54                          | 35,620.48            | Livestock Pens    |
| Compost Storage Area | 10/06            | 119,559 CF | Yes                | 15,925.26   | 9,581.42                          | 35,361.68            | Livestock Pens    |
| East Pens            | 03/01            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| East Pens            | 05/03            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| East Pens            | 07/01            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| East Pens            | 09/01            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| WSL1                 | 03/20            | 32,492 CF  | Yes                | 1,822.8     | 201.56                            | 802.74               | Surrounding Farms |
| WSL1                 | 04/17            | 32,492 CF  | Yes                | 1,822.8     | 201.56                            | 802.74               | Surrounding Farms |
| WSL1                 | 09/18            | 32,492 CF  | Yes                | 1,822.8     | 201.56                            | 802.74               | Surrounding Farms |
| West Pens            | 04/01            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| West Pens            | 06/01            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| West Pens            | 08/02            | 44,772 CF  | Yes                | 5,963.63    | 3,588.01                          | 13,242.11            | Surrounding Farms |
| West Pens            | 10/01            | 44,775 CF  | Yes                | 5,964.03    | 3,588.25                          | 13,243               | Surrounding Farms |
| Sub Totals:          |                  | 936,515 CF |                    | 117,228.4   | 67,845                            | 250,568.8            |                   |

| Imported from | Date Transferred | Quantity | Analysis Available | Total N lbs | P <sub>2</sub> O <sub>5</sub> lbs | K <sub>2</sub> O lbs | Imported to |
|---------------|------------------|----------|--------------------|-------------|-----------------------------------|----------------------|-------------|
| No Imports.   |                  |          |                    |             |                                   |                      |             |
| Sub Totals:   |                  | CF       |                    | 0           | 0                                 | 0                    |             |

|         |            |         |        |         |
|---------|------------|---------|--------|---------|
| Totals: | 936,515 CF | 117,228 | 67,845 | 250,569 |
|---------|------------|---------|--------|---------|

## SECTION 3 - UTILIZATION AREA

### Cropping History



## Cropping Report

3R Cattle LLC

Ontario

| Planted              | Field        | Acres | Crop                           | Yield  | Nutrient Uptake (lbs/ac) |                               |                  |
|----------------------|--------------|-------|--------------------------------|--------|--------------------------|-------------------------------|------------------|
|                      |              |       |                                |        | N                        | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O |
| 01/01                | Hay/Pasture1 | 4.2   | Grass Hay/Pasture              | 5 Ton  | 58                       | 18                            | 48               |
| Hay/Pasture1 Totals: |              |       |                                |        | 58                       | 18                            | 48               |
| 01/01                | Hay/Pasture2 | 3.9   | Grass Hay/Pasture              | 5 Ton  | 58                       | 18                            | 48               |
| Hay/Pasture2 Totals: |              |       |                                |        | 58                       | 18                            | 48               |
| 01/01                | Pivot        | 76.5  | Corn, Silage                   | 20 Ton | 25                       | 9                             | 24               |
| Pivot Totals:        |              |       |                                |        | 25                       | 9                             | 24               |
| 01/01                | Wheeline     | 46.0  | Wheat, Winter Straw<br>Removed | 4 Ton  | 53                       | 25                            | 29               |
| Wheeline Totals:     |              |       |                                |        | 53                       | 25                            | 29               |

## SECTION 3 - UTILIZATION AREA

### **Irrigation Water Management**

The application of Irrigation Water Management to the irrigated fields as shown on the Field Map will manage soil moisture to promote the desired crop response, optimize the available water supplies, minimize irrigation induced erosion, decrease non-point source pollution of surface and groundwater sources, manage salts in the crop root zone and manage the crop micro climate.

**Permits:** Under Oregon law all water is publicly owned, and anyone planning to store or divert surface or groundwater for the purpose of irrigation must obtain a permit or water right from the Oregon Water Resources Department. These permits or water rights must be obtained prior to the use of the water. It is the responsibility of the Farmer to file for the necessary permits or water rights. More information about Oregon water rights can be found at <http://www.oregon.gov/owrd/Pages/wr/index.aspx>.

The irrigation system used to irrigate crops should be adapted for site conditions (soil, slope, crop grown, climate, water quantity and quality, etc.) and capable of applying water and wastewater to meet the consumptive use of the crop. The following table shows the estimated Available Water Holding Capacity (AWHC) and sprinkler intake rates by soil texture that should be considered in the design of the irrigation system.<sup>1/</sup>

| <u>Symbol</u> | <u>Soil Texture</u>  | <u>AWHC Range (in/in)</u> | <u>Sprinkler Intake Rate Range (in/hour)</u> |
|---------------|----------------------|---------------------------|--|
| COS           | Coarse Sand          | 0.01-0.03                 | 1.0+   |
| S             | Sand                 | 0.01-0.03                 | 0.5+   |
| FS            | Fine Sand            | 0.05-0.07                 | 0.5+   |
| VFS           | Very Fine Sand       | 0.05-0.07                 | 0.5+   |
| LCOS          | Loamy Coarse Sand    | 0.06-0.08                 | 1.0+   |
| LS            | Loamy Sand           | 0.06-0.08                 | 0.4-1.5                                      |
| LFS           | Loamy Fine Sand      | 0.09-0.11                 | 0.4-1.5                                      |
| LVFS          | Loamy Very Fine Sand | 0.10-0.12                 | 0.3-1.25                                     |
| COSL          | Coarse Sandy Loam    | 0.10-0.12                 | 0.3-1.25                                     |
| SL            | Sandy Loam           | 0.11-0.13                 | 0.3-1.25                                     |
| FSL           | Fine Sandy Loam      | 0.13-0.15                 | 0.3-1.0                                      |
| VFSL          | Very Fine Sandy Loam | 0.15-0.17                 | 0.3-1.0                                      |
| L             | Loam                 | 0.16-0.18                 | 0.6-0.7                                      |
| SIL           | Silt Loam            | 0.19-0.21                 | 0.5-0.7                                      |
| SI            | Silt Loam            | 0.16-0.18                 | 0.5-0.7                                      |
| SCL           | Sandy Clay Loam      | 0.14-0.16                 | 0.1-0.5                                      |
| CL            | Clay Loam            | 0.19-0.21                 | 0.1-0.5                                      |
| SICL          | Silty Clay Loam      | 0.19-0.21                 | 0.1-0.4                                      |
| SC            | Sandy Clay           | 0.15-0.17                 | 0.1-0.4                                      |
| SIC           | Silty Clay           | 0.15-0.17                 | 0.1-0.2                                      |
| C             | Clay                 | 0.14-0.16                 | 0.1-0.2                                      |

<sup>1/</sup> Values in this table are taken from the Natural Resources Conservation Service National Engineering Handbook, Part 652, Irrigation Guide and are estimates based on soil texture and should only be used where local data is unavailable.

Irrigation water management requires knowledge, skills, and desire to determine when irrigation water should be applied. The main factors influencing IWM are irrigation interval (time between irrigations), irrigation set time (time water is applied), and application rate (rate at which water is applied). These parameters define the timing and duration of irrigation and the amount of water applied. System design and maintenance are also important factors influencing irrigation water management.

### **SECTION 3 -**

Guidance given in the irrigation water requirements worksheets was developed based on Oregon State University Extension Miscellaneous 8530, Oregon Crop Water Use and Irrigation Requirements publication. For additional information on irrigation water management contact a professional with the required knowledge and skill. The following average monthly evapotranspiration and precipitation graphs can be used to estimate when to irrigate and how much to apply:

# SECTION 3 - UTILIZATION AREA

## Irrigation Water Flows, Volumes, and Relationships

Equation 1 -

$$Q \times T = D \times A$$

where

Q = flow rate (acre-in/hr or cfs)

T = time (hr)

D = gross depth applied (in)

A = area (acres)

Equation 2 -

$$Q = \frac{453 \times A \times D}{F \times H}$$

where

Q = flow rate (acre-in/hr or cfs)

A = area (acres)

D = gross depth applied (in)

F = irrigation period (days)

H = Hours of operation per

### Water Flow

- 1 cubic foot per second (cfs)  
= 448.8 gallons per minute
- 1 cfs for 1 hour = 0.99 acre-inch
- 1 cfs for 24 hr = 1.98 acre-ft
- 1,000 gpm = 2.23 cfs
- 1,000 gpm for 24 hr = 4.42 ac-ft
- 1 gpm/acre = 0.053 ac-in/ac/day
- 1 cfs = 40 miner's inches in OR, No CA
- 1 cfs = 50 miner's inches in ID, WA

- 1 miner's inch = 11.22 gpm in OR
- 1 miner's inch = 9 gpm in ID, WA
- 1 cfs = 28.32 liters/sec
- 1 cubic meter/sec = 35.3 cfs
- 1 liter/sec = 15.85 gpm

**Q x T = D x**      where:

Q = cfs, T = hr, D = inches depth; A =

### Gpm for 5 ft/s velocity in PVC pipe:

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| 6"  | 8"  | 10" | 12" | 14" |
| 480 | 800 | 125 | 175 | 215 |

### Water Volumes & Weights:

- 1 cubic foot = 7.48 gallons  
= 62.4 lbs = 28.3 liters
- 1 acre-foot = 43,560 cubic feet  
(1 acre covered 1 ft deep)
- 12 acre-in = 1 acre-ft = 325,829 gal
- 1 million gallons = 3.07 acre-ft
- 1 acre-ft = 1,234 cubic meters
- 1 cu meter = 1,000 liters = 35.3 cu ft

### Pressure and Pressure Head:

- 1 psi = 2.31 ft of pressure head
- 1 atmosphere (sea level)  
= 14.7 psi = 33.9 ft of head

### Lengths and Areas:

- 1 mile = 5,280 ft = 1.61 km
- 1 meter = 3.28 ft = 39.37 inches
- 1 acre = 43,560 square ft
- 1 hectare = 2.47 acres

### Pump Power Requirement

$$\text{Horsepower} = \frac{\text{Pump Head in ft} \times \text{gpm}}{39.6 \times \% \text{ Pump Efficiency}}$$

### SECTION 3 - UTILIZATION AREA

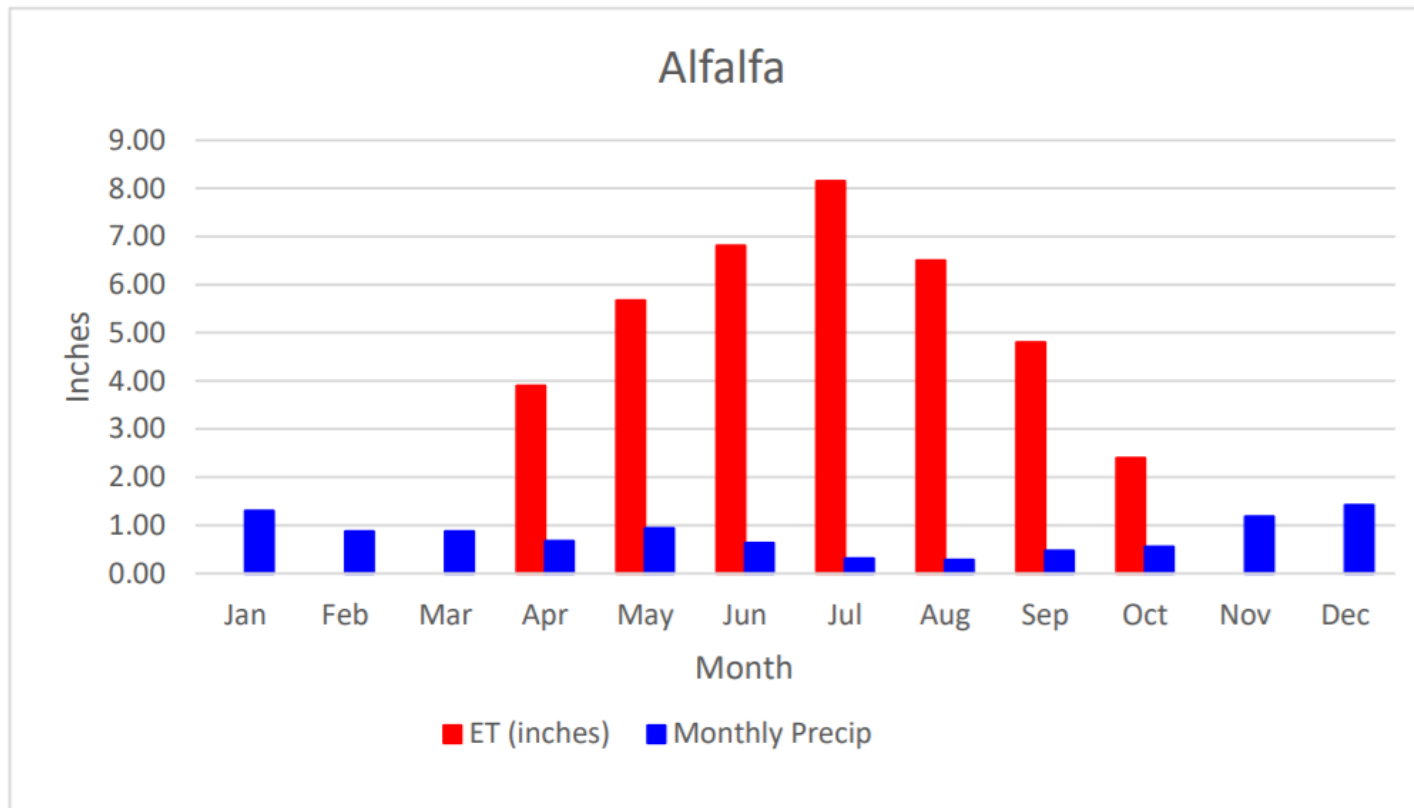
Crop- Alfalfa

Region- Southeast

---

|                                    |                 |
|------------------------------------|-----------------|
| Total Seasonal Evapotranspiration- | 38.23 Inches    |
| Peak Evapotranspiration Rate-      | 0.27 Inches/Day |
| Maximum Allowed Depletion-         | 50 %            |
| Critical Moisture Deficit Period-  | Jul             |

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## SECTION 3 - UTILIZATION AREA

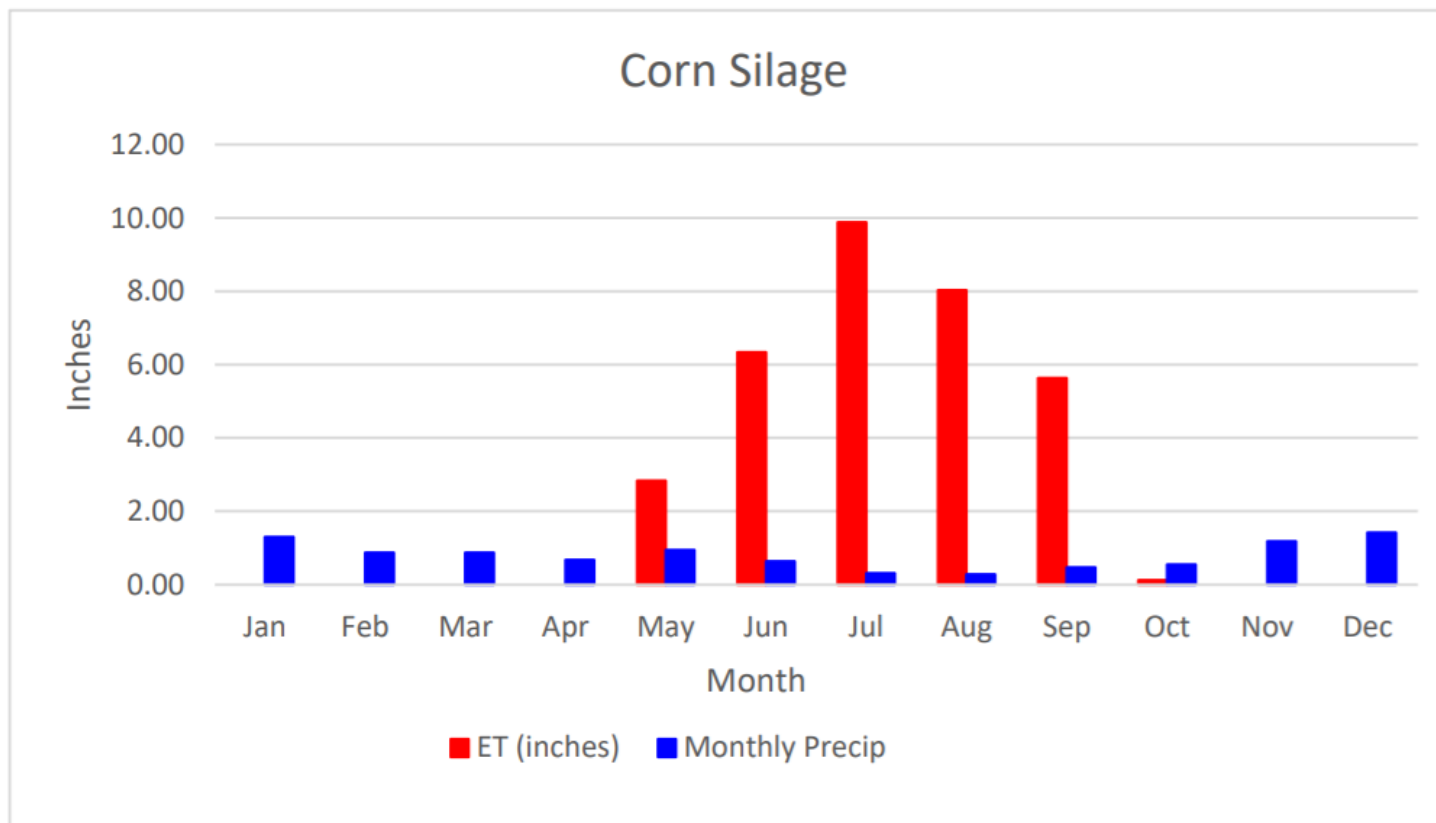
Crop- Corn Silage

Region- Southeast

---

|                                    |                 |
|------------------------------------|-----------------|
| Total Seasonal Evapotranspiration- | 32.83 Inches    |
| Peak Evapotranspiration Rate-      | 0.33 Inches/Day |
| Maximum Allowed Depletion-         | 50 %            |
| Critical Moisture Deficit Period-  | Jul             |

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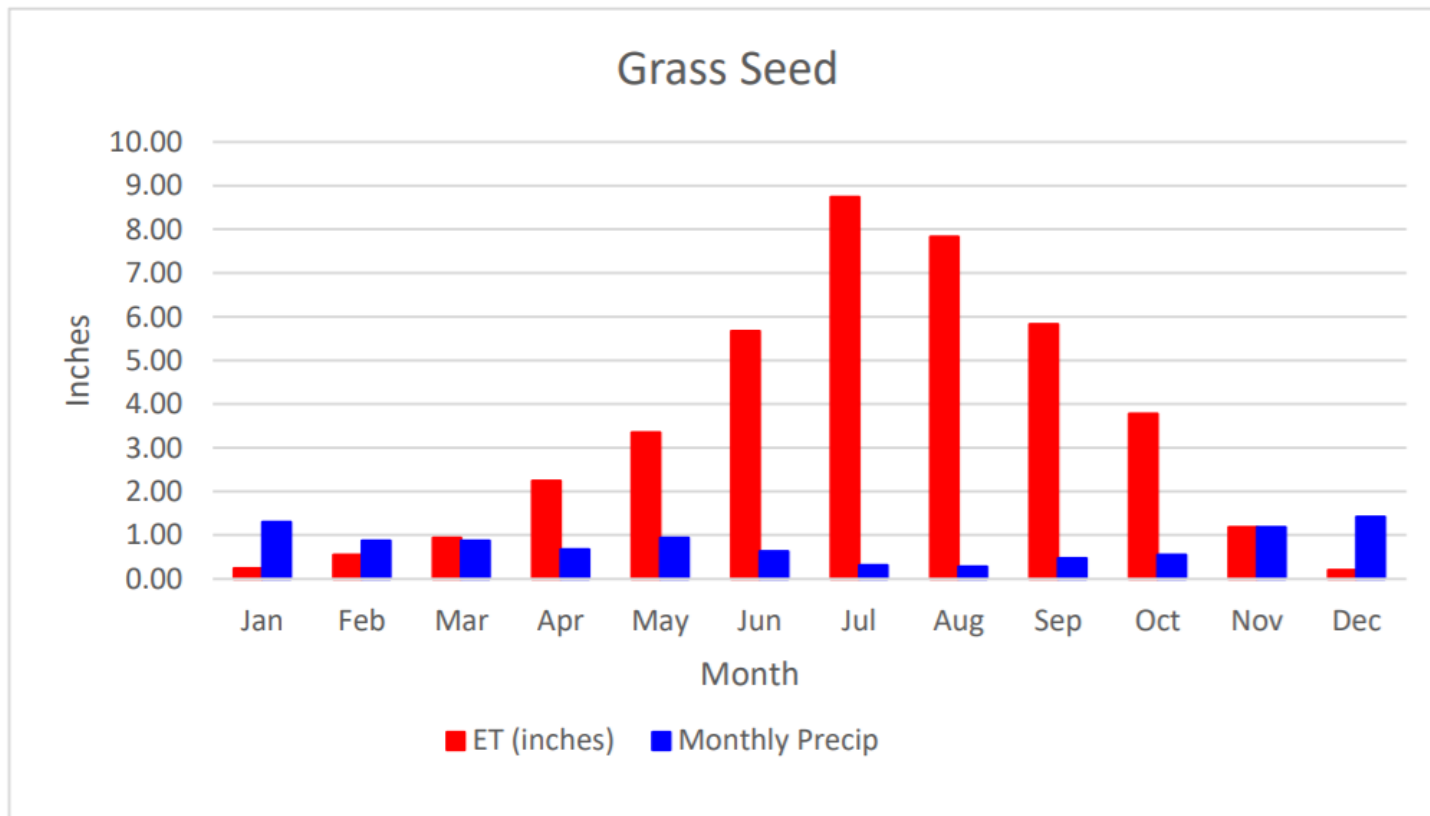
### SECTION 3 - UTILIZATION AREA

Crop- Grass Seed  
Region- Southeast

---

|                                    |                 |
|------------------------------------|-----------------|
| Total Seasonal Evapotranspiration- | 40.55 Inches    |
| Peak Evapotranspiration Rate-      | 0.29 Inches/Day |
| Maximum Allowed Depletion-         | 50 %            |
| Critical Moisture Deficit Period-  | Jul             |

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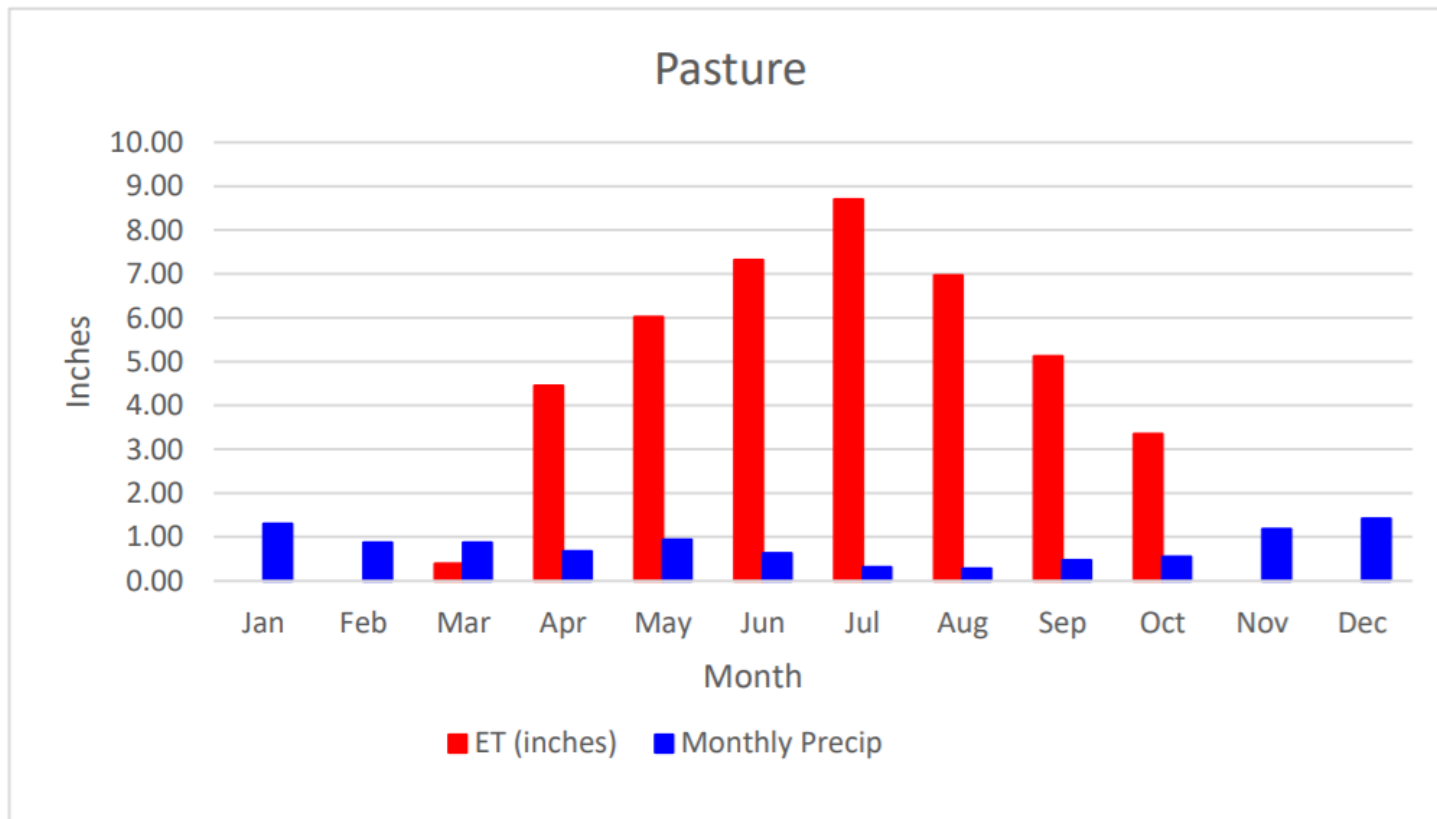
### SECTION 3 - UTILIZATION AREA

Crop- Pasture  
Region- Southeast

---

|                                    |                 |
|------------------------------------|-----------------|
| Total Seasonal Evapotranspiration- | 42.32 Inches    |
| Peak Evapotranspiration Rate-      | 0.29 Inches/Day |
| Maximum Allowed Depletion-         | 50 %            |
| Critical Moisture Deficit Period-  | Jul             |

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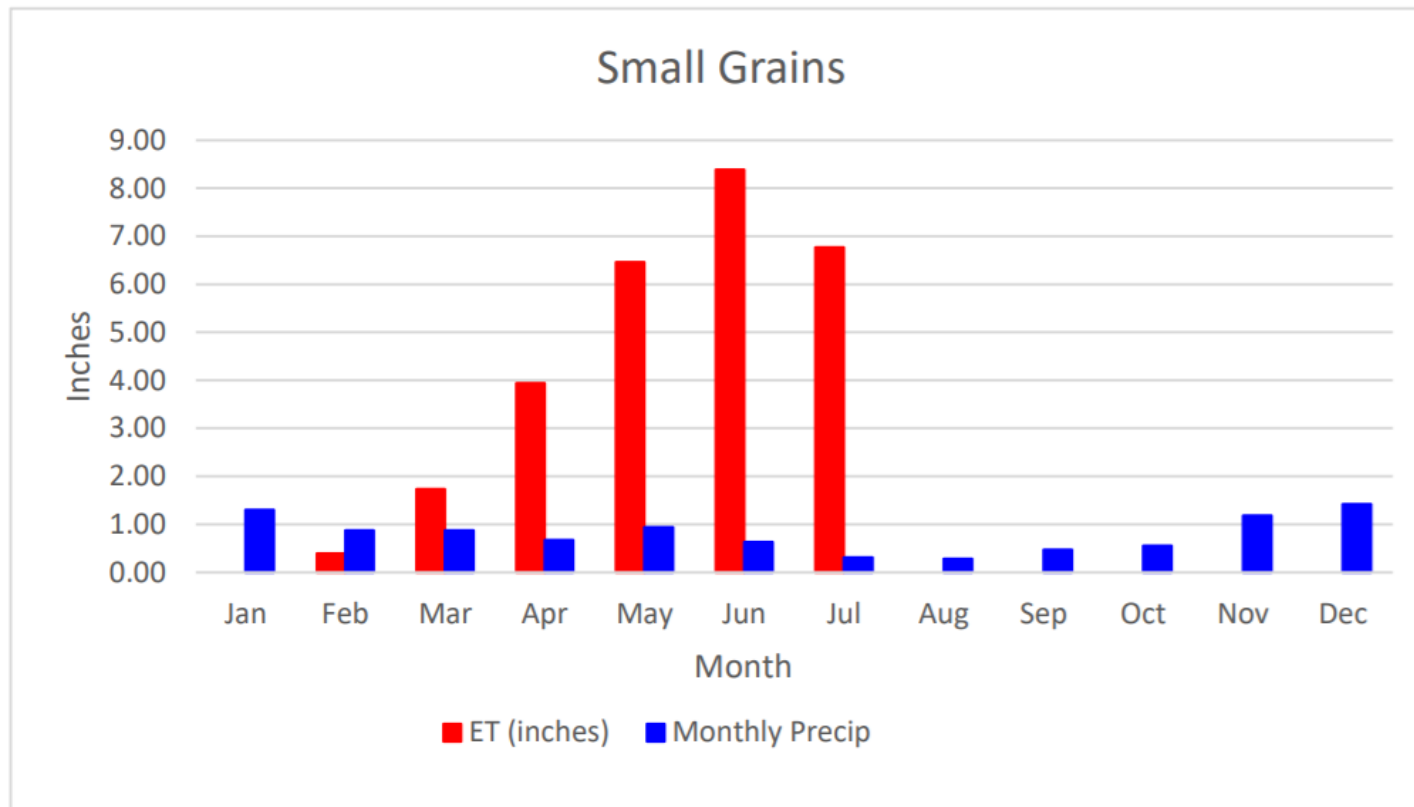
### SECTION 3 - UTILIZATION AREA

Crop- Small Grains  
Region- Southeast

---

|                                    |                 |
|------------------------------------|-----------------|
| Total Seasonal Evapotranspiration- | 27.68 Inches    |
| Peak Evapotranspiration Rate-      | 0.28 Inches/Day |
| Maximum Allowed Depletion-         | 50 %            |
| Critical Moisture Deficit Period-  | Jun             |

---

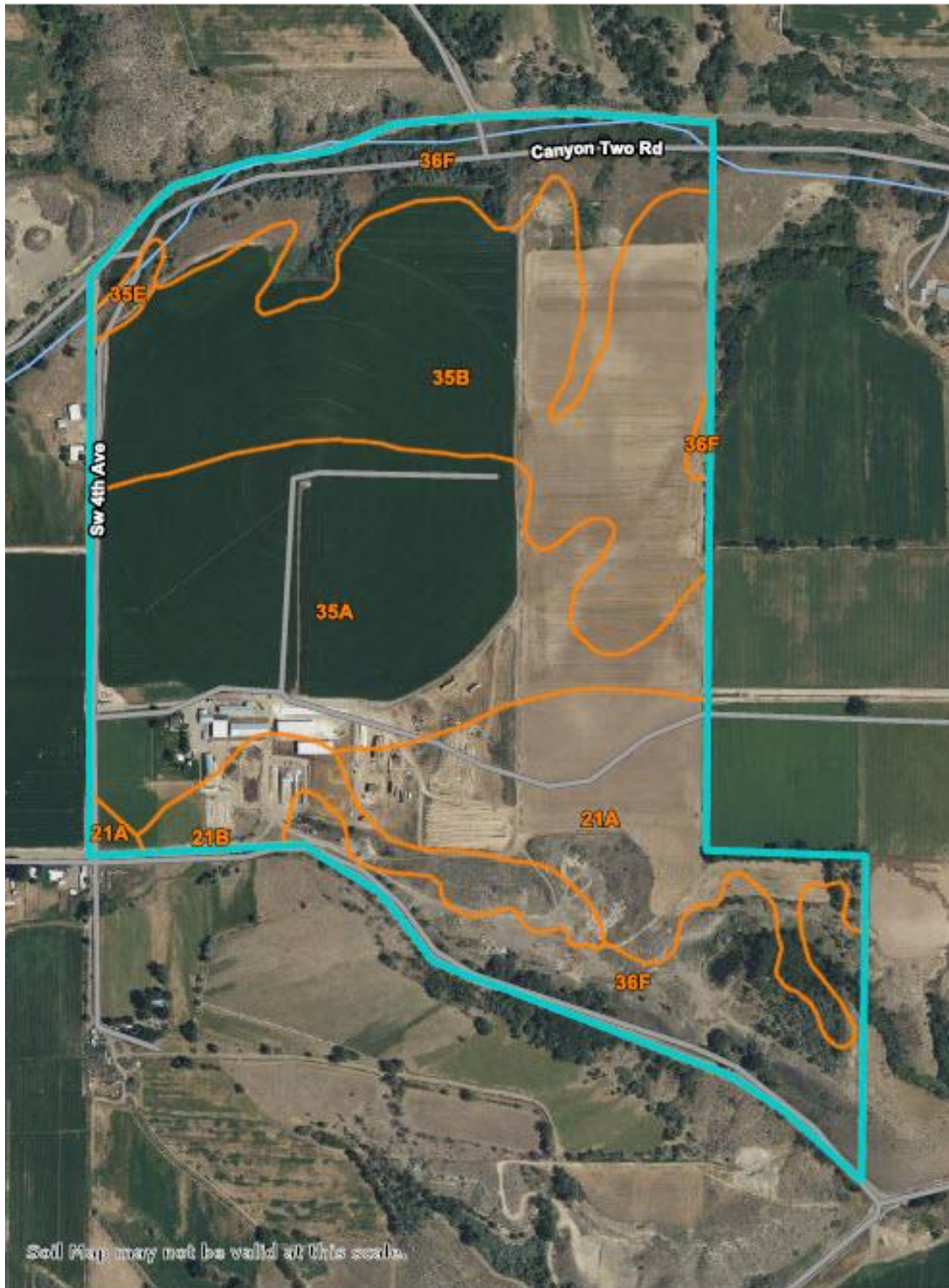


# SECTION 4 - SOIL AND RISK ASSESSMENT

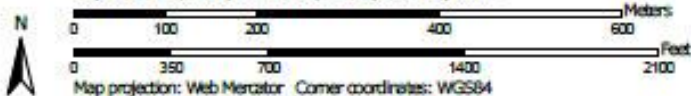
## Soil Maps for 3R Cattle LLC

### Soils Map #1

Soil Map—Malheur County, Oregon, Northeastern Part  
(3R Cattle LLC)



Map Scale: 1:8,090 if printed on A portrait (8.5" x 11") sheet.



# **SECTION 4 - SOIL AND RISK ASSESSMENT**

## **Soil Reports**

### **Map Unit Description**

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a soil series. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

## **SECTION 4 - SOIL AND RISK ASSESSMENT**

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

### **Report—Map Unit Description Malheur County, Oregon, Northeastern Part**

#### **21A—Nyssa silt loam, 0 to 2 percent slopes**

Map Unit Setting

National map unit symbol: 23c0

Elevation: 2,100 to 2,600 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 150 to 170 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Nyssa and similar soils:59 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nyssa

Setting

Landform:Terraces

Landform position (three-dimensional):Tread

Down-slope shape:Linear

Across-slope shape:Linear

Parent material:Lacustrine deposits

Typical profile

## **SECTION 4 - SOIL AND RISK ASSESSMENT**

H1 - 0 to 13 inches: silt loam

H2 - 13 to 25 inches: silt loam

H3 - 25 to 31 inches: cemented material

H4 - 31 to 60 inches: stratified silt loam to fine sandy loam to loam

Properties and qualities

Slope:0 to 2 percent

Depth to restrictive feature:20 to 40 inches to duripan

Drainage class:Well drained

Capacity of the most limiting layer to transmit water (Ksat):Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table:More than 80 inches

Frequency of flooding:None

Frequency of ponding:None

Calcium carbonate, maximum content:10 percent

Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: R011XY012OR - Silty 8-11 PZ

Hydric soil rating: No

### **21B—Nyssa silt loam, 2 to 5 percent slopes**

Map Unit Setting

National map unit symbol: 23c1

Elevation: 2,100 to 2,600 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 50 to 54 degrees F

Frost-free period: 150 to 170 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Nyssa and similar soils:68 percent

Minor components:1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nyssa

Setting

Landform:Terraces

Landform position (three-dimensional):Tread

Down-slope shape:Linear

Across-slope shape:Linear

Parent material:Lacustrine deposits

Typical profile

H1 - 0 to 13 inches: silt loam

H2 - 13 to 25 inches: silt loam

H3 - 25 to 31 inches: cemented material

H4 - 31 to 60 inches: stratified silt loam to fine sandy loam to loam

Properties and qualities

Slope:2 to 5 percent

Depth to restrictive feature:20 to 40 inches to duripan

Drainage class:Well drained

Capacity of the most limiting layer to transmit water (Ksat):Very low to moderately low (0.00 to 0.06 in/hr)

## **SECTION 4 - SOIL AND RISK ASSESSMENT**

Depth to water table:More than 80 inches  
Frequency of flooding:None  
Frequency of ponding:None  
Calcium carbonate, maximum content:10 percent  
Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
Available water supply, 0 to 60 inches: Low (about 4.9 inches)  
Interpretive groups  
Land capability classification (irrigated): 3e  
Land capability classification (nonirrigated): 6e  
Hydrologic Soil Group: C  
Ecological site: R011XY012OR - Silty 8-11 PZ  
Hydric soil rating: No  
Minor Components  
Aquepts, poorly drained  
Percent of map unit:1 percent  
Landform:Flood plains  
Hydric soil rating: Yes

### **35A—Virtue silt loam, 0 to 2 percent slopes**

Map Unit Setting  
National map unit symbol: 23d6  
Elevation: 2,300 to 2,600 feet  
Mean annual precipitation: 9 to 11 inches  
Mean annual air temperature: 48 to 52 degrees F  
Frost-free period: 110 to 170 days  
Farmland classification: Prime farmland if irrigated  
Map Unit Composition  
Virtue and similar soils:83 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.  
Description of Virtue  
Setting  
Landform:Terraces  
Landform position (three-dimensional):Tread  
Down-slope shape:Linear  
Across-slope shape:Linear  
Parent material:Alluvium  
Typical profile  
H1 - 0 to 14 inches: silt loam  
H2 - 14 to 26 inches: silty clay loam  
H3 - 26 to 40 inches: cemented material  
H4 - 40 to 60 inches: very gravelly loam  
Properties and qualities  
Slope:0 to 2 percent  
Depth to restrictive feature:20 to 40 inches to duripan  
Drainage class:Well drained  
Capacity of the most limiting layer to transmit water (Ksat):Very low to moderately low (0.00 to 0.06 in/hr)  
Depth to water table:More than 80 inches  
Frequency of flooding:None  
Frequency of ponding:None  
Calcium carbonate, maximum content:15 percent  
Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

## **SECTION 4 - SOIL AND RISK ASSESSMENT**

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Ecological site: R011XY012OR - Silty 8-11 PZ

Hydric soil rating: No

### **35B—Virtue silt loam, 2 to 5 percent slopes**

Map Unit Setting

National map unit symbol: 23d7

Elevation: 2,300 to 2,600 feet

Mean annual precipitation: 9 to 11 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 110 to 170 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Virtue and similar soils:83 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Virtue

Setting

Landform:Terraces

Landform position (three-dimensional):Tread

Down-slope shape:Linear

Across-slope shape:Linear

Parent material:Alluvium

Typical profile

H1 - 0 to 14 inches: silt loam

H2 - 14 to 26 inches: silty clay loam

H3 - 26 to 40 inches: cemented material

H4 - 40 to 60 inches: very gravelly loam

Properties and qualities

Slope:2 to 5 percent

Depth to restrictive feature:20 to 40 inches to duripan

Drainage class:Well drained

Capacity of the most limiting layer to transmit water (Ksat):Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table:More than 80 inches

Frequency of flooding:None

Frequency of ponding:None

Calcium carbonate, maximum content:15 percent

Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: R011XY012OR - Silty 8-11 PZ

Hydric soil rating: No

### **35E—Virtue silt loam, 12 to 20 percent slopes**

Map Unit Setting

National map unit symbol: 23db

## **SECTION 4 - SOIL AND RISK ASSESSMENT**

Elevation: 2,300 to 2,600 feet  
Mean annual precipitation: 9 to 11 inches  
Mean annual air temperature: 48 to 52 degrees F  
Frost-free period: 110 to 170 days  
Farmland classification: Farmland of statewide importance  
Map Unit Composition  
Virtue and similar soils:83 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.  
Description of Virtue  
Setting  
Landform:Terraces  
Landform position (three-dimensional):Riser  
Down-slope shape:Linear  
Across-slope shape:Linear  
Parent material:Alluvium  
Typical profile  
H1 - 0 to 14 inches: silt loam  
H2 - 14 to 26 inches: silty clay loam  
H3 - 26 to 40 inches: cemented material  
H4 - 40 to 60 inches: very gravelly loam  
Properties and qualities  
Slope:12 to 20 percent  
Depth to restrictive feature:20 to 40 inches to duripan  
Drainage class:Well drained  
Capacity of the most limiting layer to transmit water (Ksat):Very low to moderately low (0.00 to 0.06 in/hr)  
Depth to water table:More than 80 inches  
Frequency of flooding:None  
Frequency of ponding:None  
Calcium carbonate, maximum content:15 percent  
Maximum salinity:Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
Available water supply, 0 to 60 inches: Low (about 5.2 inches)  
Interpretive groups  
Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 6e  
Hydrologic Soil Group: C  
Ecological site: R011XY020OR - SOUTH SLOPES 8-11 PZ  
Hydric soil rating: No

### **36F—Xeric Torriorthents, very steep**

Map Unit Setting  
National map unit symbol: 23dd  
Elevation: 2,100 to 2,690 feet  
Mean annual precipitation: 9 to 11 inches  
Mean annual air temperature: 50 to 52 degrees F  
Frost-free period: 155 to 165 days  
Farmland classification: Not prime farmland  
Map Unit Composition  
Xeric torriorthents and similar soils:100 percent  
Estimates are based on observations, descriptions, and transects of the mapunit.  
Description of Xeric Torriorthents  
Setting  
Landform:Terraces

## **SECTION 4 - SOIL AND RISK ASSESSMENT**

Landform position (three-dimensional):Riser  
Down-slope shape:Linear  
Across-slope shape:Linear  
Parent material:Lacustrine deposits  
Typical profile  
H1 - 0 to 60 inches: variable  
Properties and qualities  
Slope:20 to 60 percent  
Depth to restrictive feature:More than 80 inches  
Drainage class:Well drained  
Depth to water table:More than 80 inches  
Frequency of flooding:None  
Frequency of ponding:None  
Interpretive groups  
Land capability classification (irrigated): None specified  
Land capability classification (nonirrigated): 7e  
Ecological site: R011XY022ID - Shallow Escarpment Complex 8-11 PZ  
Hydric soil rating: No

### **Data Source Information**

Soil Survey Area: Malheur County, Oregon, Northeastern Part  
Survey Area Data: Version 18, Sep 14, 2022

## SECTION 4 - SOIL AND RISK ASSESSMENT



### Phosphorus Index Report

3R Cattle LLC -  
Ontario

Phosphorus Index is included for advisement puposes and is not (yet) currently a regulary tool.

| Field        | Acres | Soil        | Soil Test Date | Bray P (ppm) | Olsen (ppm) | K (ppm) | pH  | TFS  | SFS   | Score | Rating |
|--------------|-------|-------------|----------------|--------------|-------------|---------|-----|------|-------|-------|--------|
| Hay/Pasture2 | 3.9   | 21A, Nyssa  | 05/18/2022     |              | 39.0        | 655.0   | 7.5 | 4.25 | 11.34 | 48.21 | Low    |
| Wheeline     | 46.0  | 35B, Virtue | 05/18/2022     |              | 39.0        | 655.0   | 7.5 | 4.25 | 10.93 | 46.46 | Low    |
| Hay/Pasture1 | 4.2   | 35A, Virtue | 05/18/2022     |              | 39.0        | 655.0   | 7.5 | 4.25 | 11.34 | 48.21 | Low    |
| Pivot        | 76.5  | 35A, Virtue | 04/11/2022     |              | 39.0        | 603.0   | 7.8 | 4.25 | 10.62 | 45.14 | Low    |

# SECTION 4 - SOIL AND RISK ASSESSMENT

## PI Interpretations

| <u>P-Index Rating</u>  | <u>Interpretation for Oregon</u>  | <u>Recommended Nutrient Limitation</u> |
|--|---|--|
| West PI Score <=25<br>or<br>East PI Score <=100              | The site has a LOW potential for P movement from the site. If farming practices are maintained at current levels, the probability of an adverse impact to surface water resources from P losses from this site are low. Phosphorus can be applied at rates greater than crop requirement  | Nitrogen                               |
| West PI Score 25.1 to 50<br>or<br>East PI Score 100.1 to 400 | The site has a MEDIUM potential for P movement from the site. The probability for an adverse impact to surface water resources is greater than that from a LOW vulnerability rated site. Some remedial action should be taken to lessen the probability of P movement. Phosphorus can be applied not to exceed the crop requirement rate for phosphorus.  | Phosphorus                             |
| West PI Score 50.1 to 75<br>or<br>East PI Score 400.1 to 600 | The site has a HIGH potential for P movement from the site. There is a high probability for an adverse impact to surface water resources unless action is taken to reduce the risk of P movement and probable water quality degradation. Phosphorus can be applied not to exceed the crop removal rate of phosphorus if the following requirements are met:<br>A soil phosphorus drawdown strategy has been implemented, and a site assessment for nutrients and soil loss has been conducted to determine if mitigation practices are required to protect water quality. | Phosphorus                             |
| West PI Score >75<br>or<br>East PI Score >600                | ZERO OUT- The environmental threshold above which the risk of P loss from a field is too great to warrant the application of phosphorus for plant production.   | No Manure                              |

# ***SECTION 5 - SUPPLEMENTAL DOCUMENTS***

## **Supplemental Documents**

CAFO NPDES General Permit #01-2016  
Issuance Date: March 31, 2016  
Effective Date: April 20, 2016  
Expiration Date: February 28, 2021

OREGON CONFINED ANIMAL FEEDING OPERATION  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
GENERAL PERMIT NUMBER 01-2016



**Oregon**  
Department  
of Agriculture

State of Oregon  
Department of Agriculture  
Confined Animal Feeding Operation Program  
and  
Department of Environmental Quality  
Water Quality Division



State of Oregon  
Department of  
Environmental  
Quality

In compliance with the provisions of Oregon Revised Statutes (ORS) Chapter 468B,  
Oregon Administrative Rules (OAR) Chapter 340, Divisions 40, 45 and 51 and Chapter 603, Division 74,  
the Federal Water Pollution Control Act as amended (The Clean Water Act),  
Title 33 United States Code, Section 1251 et seq., and  
the National Pollutant Discharge Elimination System (NPDES) program.

Until this permit expires or is modified or revoked, permit registrants who have properly obtained coverage under this permit are authorized to discharge to waters of the state in accordance with the special and general conditions that follow.

Ray Jandl, Director  
Natural Resources and Pesticides  
Oregon Department of Agriculture

Lydia Emer  
Operations Division Administrator  
Oregon Department of Environmental Quality

**RECEIVED**

**APR 04 2016**

**NATURAL RESOURCES**

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## SPECIAL CONDITIONS

### DEFINITIONS

1. "25-year, 24-hour rainfall event" means an event with a probable recurrence interval of once in twenty-five years as defined by the National Weather Service in Technical Paper Number 40, "Rainfall Frequency Atlas of the United States," May 1961, or equivalent regional or state rainfall probability information developed from this source.
2. "40 CFR" means Title 40 of the Code of Federal Regulations (2014).
3. "Agency" means Oregon Department of Environmental Quality or Oregon Department of Agriculture.
4. "Agricultural stormwater" is defined at 40 CFR § 122.23(e).
5. "Animal waste management plan" or "AWMP" or "waste management plan" means a written document containing the minimum elements necessary to manage manure, litter, and process wastewater from operations covered by this permit in accordance with the terms and conditions of this permit.
6. "Agronomic application rate" means the rate or amount of nutrients applied to the soil for utilization by growing or planned crops such that the crops remove the same or greater amount of nutrients provided by the agronomic application.
7. "Bedding" means any absorbent material that is used to provide animal cleanliness and comfort in a confinement system. Bedding materials include but are not limited to: straw; sawdust; wood shavings; grass seed cleanings; recycled, composted, or dried manure solids; and recycled paper products. Bedding that comes into contact with animals, manure, litter, or process wastewater is determined to be manure, litter, or process wastewater for purposes of this permit.
8. "Confined animal feeding operation" or "CAFO" as defined in OAR 603-074-0010(3) and OAR 340-051-0010(2) means:
  - (a) The concentrated confined feeding or holding of animals or poultry, including but not limited to horse, cattle, sheep, or swine feeding areas, dairy confinement areas, slaughterhouse or shipping terminal holding pens, poultry and egg production facilities and fur farms:
    - (i) In buildings or in pens or lots where the surface has been prepared with concrete, rock or fibrous material to support animals in wet weather; or
    - (ii) That have wastewater treatment works; or
    - (iii) That discharge any wastes into waters of the state; or
  - (b) An animal feeding operation that is subject to regulation as a concentrated animal feeding operation pursuant to 40 CFR § 122.23.
9. "Director" means the director of the State of Oregon Department of Environmental Quality or director of the State of Oregon Department of Agriculture or their authorized designee(s).
10. "Discharge" when used without qualification means the "discharge of a pollutant." "Discharge of a pollutant" is defined at 40 CFR § 122.2.
11. "Dry waste" means any solid manure, litter, bedding, or waste feed that cannot be transferred or applied with a pump or pipe system. Precipitation that comes into contact with dry waste does not change dry waste into wet waste. Dry waste may contain urine, manure, leachate or incidental process wastewater that has been absorbed into the feces, and used bedding materials in amounts that allow the waste to retain the dry characteristic so that the material cannot be transferred or applied with a pump or through a pipe.
12. "Dry waste treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes as a dry, solid substance. Dry waste treatment works for purposes of this permit do not utilize pumps or pipes to transfer or apply dry waste and typically do not need any added water or liquid to transfer or apply dry waste. Dry waste treatment works include but are not limited to manure piles and covered dry manure stack storage facilities.
13. "Dry-weather discharge" means a discharge of manure, litter or process wastewater from a land application area that is not defined as Agricultural Stormwater (40 CFR 122.23(e)) and where the land application of manure, litter, or process wastewater has not met all the site-specific nutrient management practices contained in the department-approved Animal Waste Management Plan and specified in 40 CFR 122.42(e)(1)(vi)-(xi). Dry weather discharges include but are not limited to: discharges through tile drains, discharges combined with irrigation water, infiltration of nutrients below the crop root zone, discharges due to failure of manure application or irrigation equipment.
14. "Frozen soil" means soil that has a soil temperature of 32° F (or 0° C) or less in any three (3) continuous inches of the top 12 inches of soil.

15. "Groundwater" means water in a saturated zone or stratum beneath the surface of land or below a surface water body.
16. "Manure" means solids or liquids excreted from an animal or other material (for example, bedding, compost, litter, feed waste, silage leachate, raw materials such as feed or silage) that comes into contact with solid or liquid excreted from an animal .
17. "OAR" means Oregon Administrative Rule.
18. "ORS" means Oregon Revised Statute.
19. "Overflow" means the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or stormwater can be contained by the structure.
20. "Person" is defined at 40 CFR § 122.2.
21. "Point source" is defined at 40 CFR § 122.2.
22. "Pollutant" is defined at 40 CFR § 122.2.
23. "Pollution" or "water pollution" is defined at ORS 468B.005(5).
24. "Process wastewater" or "process wastes" means water directly or indirectly used in the operation of the CAFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning or flushing pens, barns, manure pits, or other CAFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater or process wastes also includes any water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs, or bedding. OAR 340-051-0010(5) and OAR 603-074-0010(17)
25. "Production area" means that part of a CAFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment areas include but are not limited to settling basins, and areas within berms and diversions that separate uncontaminated stormwater. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of animal mortalities. OAR 340-051-0010(6) and OAR 603-074-0010(18)
26. Quantitation Limits (QLs) – The QL is the minimum level, concentration or quantity of a target analyte that can be reported with a specified degree of confidence. It is the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration for the analyte. It is normally equivalent to the concentration of the lowest calibration standard adjusted for sample weights, volumes, preparation and cleanup procedures employed. The QL as reported by a laboratory is also sometimes referred to as the Method Reporting Limit (MRL) or Limit of Quantitation (LOQ).
27. "Saturated soil" means soil with all available pore space filled that has reached its maximum retentive capacity as defined in "Qualitative Description of Soil Wetness" (Brady, N. and Weil, R., p. 201, 2007).
28. "Setback" as defined at 40 CFR §412.4(b)(1) means a specified distance from surface water or potential conduits to surface water where manure, litter, and process wastewater may not be land applied. Examples of conduits to surface water include but are not limited to: Open tile line intake structures, sinkholes, and agricultural well heads.
29. "Treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wastes. ORS 468B.005(8)

30. "Vegetative buffer" as defined at 40 CFR §412.4(b)(2) means a narrow, permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface water.
31. "Waste storage facilities" means the physical system used for the isolation and retention of process wastes on the confined animal feeding operation until their ultimate utilization.
32. "Wastes" is defined at ORS 468B.005(9).
33. "Water" or "waters of the state" is defined at ORS 468B.005(10).
34. "Waters of the U.S." is defined at 40 CFR § 122.2.
35. "Wet waste" means any liquid manure, contaminated stormwater, process wastewater, liquid feed waste and silage or manure leachate. Wet waste may include solid material particles that are suspended or dissolved in the liquid.
36. "Wet waste treatment works" means any plant or other works used for the purpose of treating, stabilizing or holding wet wastes. .Wet waste treatment works for purposes of this permit include, but are not limited to: tanks or lagoons to store wet waste; pumps, pipes, curbs, gutters, and collection sumps to direct, collect, transfer, or apply wet wastes; and any system that separates dry waste from wet waste.

**S1. PERMIT COVERAGE**

**S1.A. When is a permit required and which CAFOs are covered by this permit?**

1. Any person who owns or operates a confined animal feeding operation (CAFO) that discharges to surface water of the state is required to obtain NPDES permit coverage. NPDES General Permit #01 provides coverage for the types of CAFOs listed in Table 1 below that discharge to surface water of the state. This includes concentrated animal feeding operations defined at 40 CFR § 122.23 that discharge to waters of the U.S.
2. Any person not wishing to be covered by this permit may apply for an NPDES individual permit in accordance with OAR 340-045-0030. In addition, the director may require coverage under an NPDES individual permit pursuant to the provisions in OAR 340-045-0033 and OAR 603-074-0012.

**S1.B. Can I elect coverage under this permit even if my CAFO does not discharge to surface water?**

Any person who owns or operates a CAFO that does not discharge to surface water of the state may voluntarily elect to be covered under this permit. Any person making such an election is subject to all applicable requirements of this permit.

**Table 1: Classification of CAFOs that require coverage by NPDES General Permit #01**

| Type of CAFO discharging to surface water of the state         | Small                   | Medium                  | Large                   |
|--|-------------------------|-------------------------|-------------------------|
| mature dairy cows <sup>1</sup>                                 | <200                    | 200-699                 | ≥700                    |
| veal calves  | <300                    | 300-999                 | ≥1,000                  |
| cattle <sup>2</sup>  | <300                    | 300-999                 | ≥1,000                  |
| swine ≥ 55 lbs   | <750                    | 750-2,499               | ≥2,500                  |
| swine < 55 lbs   | <3,000                  | 3,000-9,999             | ≥10,000                 |
| horses   | <150                    | 150-499                 | ≥500                    |
| sheep or lambs   | <3,000                  | 3,000-9,999             | ≥10,000                 |
| turkeys  | <16,500                 | 16,500-54,999           | ≥55,000                 |
| chickens, including laying hens or broilers w/wet waste system | <9,000                  | 9,000-29,999            | ≥30,000                 |
| laying hens w/dry waste system                                 | <25,000                 | 25,000-81,999           | ≥82,000                 |
| broiler chickens w/dry waste system                            | <37,500                 | 37,500-124,999          | ≥125,000                |
| ducks w/other than wet waste system                            | <10,000                 | 10,000-29,999           | ≥30,000                 |
| ducks w/wet waste system                                       | <1,500                  | 1,500-4,999             | ≥5,000                  |
| other animal type <sup>3</sup>                                 | Designated by director. | Designated by director. | Designated by director. |

<sup>1</sup> Whether milked or dry.

<sup>2</sup> Other than mature dairy cows or veal calves; cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs.

<sup>3</sup> To determine the number of animals that require permit coverage, ODA will compare the operation to the most similar animal type in the table.

**S1.C. How do I apply for permit coverage?**

1. New Application

To obtain permit coverage for the first time, a person must submit to ODA an ODA *Application to Register (ATR)*, Land Use Compatibility Statement (LUCS), Animal Waste Management Plan (AWMP), and application fee. The application, LUCS, AWMP, and fee must be submitted to ODA at least 180 days prior to the time permit coverage is needed or as specified by ODA in writing. For information on AWMP requirements, see S3, p. 13.

2. Renewal of Permit Coverage

To renew permit coverage, the permit registrant must submit an ODA renewal application at least 180 days before the expiration date of this permit or as specified by ODA in the renewal notice but no later than the expiration date of this permit. Applicants must certify on their renewal application whether an AWMP is new, updated or current and on file. New and updated animal waste management plans must be submitted with the application.

3. Notification of Permit Coverage

ODA will review the application and notify the applicant in writing when permit coverage is approved or denied. Permit coverage does not begin until written notice is issued by ODA to the applicant. Written notification will include a *Notice of Registration* that will include the following information:

- (a) The owner and operator's legal name;
- (b) Facility name and location;
- (c) Contact information, including mailing address and telephone number;
- (d) Effective date of permit coverage;
- (e) Maximum number of animals allowed at the facility; and
- (f) Regulatory status of the operation. ODA will use the following classifications for regulatory status:
  - (i) *Large concentrated animal feeding operation* as defined in 40 CFR § 122.23(b)(4);
  - (ii) *Medium concentrated animal feeding operation* as defined in 40 CFR § 122.23(b)(6);
  - (iii) *Small concentrated animal feeding operation* as defined in 40 CFR § 122.23(b)(9) and designated by the director pursuant to OAR 603-074-0012;
  - (iv) *Elective large, medium, or small CAFO* sized according to Table 1, p. 6.

**S1.D. How do I transfer permit coverage to a new owner or operator?**

The permit registrant must complete an ODA transfer form and submit it to ODA for approval at least 30 days before transfer of the CAFO is scheduled to occur or as specified by ODA. The form must be signed by the previous owner or operator as well as the new owner or operator. ODA will respond to the request for transfer by conducting a site inspection and a review of the permit file. ODA will notify the permit registrant and transferee in writing of transfer of coverage under this permit or deny the request with an explanation of why the request was denied.

**S1.E. What activities are covered by this permit?**

1. This permit covers the discharge of pollutants resulting from processes, wastes, and operations that are properly identified by the registrant through its AWMP approved by ODA.
2. This permit does not cover disposal of human wastes or treatment works that mix human and animal wastes. Any person owning or operating such a system must apply to DEQ for coverage under an individual or general permit issued pursuant to ORS 468B.050. This general permit may be used in addition to an individual or general permit issued by DEQ pursuant to ORS 468B.050 that covers some other type of wastewater at this same facility, for example, septic system wastewater.
3. Pursuant to 40 CFR § 122.23(e), precipitation-related discharges that qualify as agricultural stormwater discharges from land application areas are not subject to NPDES permit requirements. For discharges from the land application area to meet the definition of agricultural stormwater, manure and wastewater must be applied in accordance with site specific practices listed in the ODA-approved AWMP that ensure appropriate agricultural utilization of nutrients.

**S1.F. How do I cancel permit coverage?**

1. ODA will cancel coverage under this permit upon issuance of an appropriate individual permit by ODA and DEQ or coverage under WPCF General Permit #01 is granted by ODA.

2. Any permit registrant may request in writing to ODA that coverage under this permit be cancelled if any one of the following applies:
  - (a) Conditions or standards have changed so that the CAFO no longer qualifies for or is required to have coverage under this permit.
  - (b) The permit registrant no longer has animals on site and all waste storage and control facilities have been cleaned and re-purposed or decommissioned in accordance with the following requirements:
    - (i) Cleaning/Re-purposing Requirements
      - (1) All liquid and solid manure, litter and process wastewater must be removed from the structure(s) and either land applied according to the ODA-approved AWMP or exported according to S2.K, p. 12.
      - (2) All liquid storage facilities that could fill with rain water must be flushed with clean water, the flush water land applied or exported according to S2.K, p. 12 and the remaining liquid in the structure tested to confirm the *E. coli* level is at or below the water quality standard of 406 Colony Forming Units/100ml of sample.
      - (3) All liquid transfer systems are cleaned and modified so that they are not a conduit for any pollutant to enter surface water or groundwater.
    - (ii) Decommissioning Requirements
      - (1) All liquid and solid manure, litter and process wastewater must be removed from the structure(s) and either land applied according to the approved AWMP or exported according to S2.K, p. 12.
      - (2) If the structure has a synthetic liner, the liner must be removed and disposed or recycled in a lawful manner.
      - (3) After completion of [(ii)(1)] above, any earthen structure must be filled with soil and returned to the grade matching the surrounding area. All soil fill and remaining exposed soil must be seeded to site-appropriate grass or ground cover to prevent erosion.
3. The permit registrant must also certify that it will not commence operation of a regulated CAFO at the same location until the appropriate NPDES or WPCF permit coverage has been obtained.
4. ODA will respond to the request for cancellation by conducting a site inspection and a review of the permit file. ODA will notify the permit registrant in writing of termination of coverage under this permit or deny the request with an explanation of why the request was denied.

**S1.G. Will my information be kept confidential?**

Information, including the name and address of an NPDES permit applicant or permit registrant, NPDES permit applications (for example, ODA ATRs) and their attachments (for example, AWMPs), NPDES permits, and NPDES permit discharge data cannot be kept confidential pursuant to 40 CFR § 122.7(b) and (c), ORS 468.095(1), and ORS 192.410 to 192.505. The applicant or permittee may request that director classify other records as confidential upon a proper showing that the record is a trade secret pursuant to ORS 468.095(2).

**S1.H. What are the public notice and participation requirements of this permit?**

1. Prior to approving new permit coverage, renewing permit coverage, or approving proposed substantial changes to an AWMP, ODA will provide public notice and participation as detailed in Table 2, p. 9.
2. ODA may batch multiple notices as regionally appropriate.
3. Application and permit documents (for example, Application to Register, renewal application, AWMP, Land Use Compatibility Statement) will be available for public review at ODA headquarters and appropriate field offices. If available, electronic copies of documents will be provided upon request.
4. ODA will schedule public hearings if written requests for public hearing are received during the comment period from at least 10 persons or from an organization or organizations representing at least ten persons. If a hearing is scheduled, ODA will provide at least 30 days notice before the hearing is held. The public comment period will remain open for additional comments for at least seven (7) days after the public hearing.

**S1.I. Table 2: NPDES Public Notice Requirements**

|                                     | <b>New Application</b>   | <b>Renewal Application</b>   | <b>AWMP Changes</b>  |
|-------------------------------------|--|--|--|
| <b>Permit Action</b>                | (a) Receipt of ODA <i>ATR (Application to Register)</i> for existing operation not currently under an NPDES permit or new proposed operation   | (b) Receipt of renewal application   | (c) Receipt of proposed substantial change to CAFO's AWMP (See S3.D, p. 14)  |
| <b>Public Participation Process</b> | (i) Public notice of a comment period of at least 35 days provided as follows: <ul style="list-style-type: none"> <li>• Published in regional newspaper;</li> <li>• Posted on ODA and DEQ websites; and</li> <li>• Emailed to interested persons list maintained by ODA.</li> </ul> (ii) Opportunity for public hearing. See S1.H.4.<br>(iii) A written response to relevant comments will be developed by ODA and made available to interested persons. | (i) Public notice of a comment period of at least 35 days provided as follows: <ul style="list-style-type: none"> <li>• Posted on ODA and DEQ websites; and</li> <li>• Emailed to interested persons list maintained by ODA.</li> </ul> (ii) Opportunity for public hearing. See S1.H.4.<br>(iii) A written response to relevant comments will be developed by ODA and made available to interested persons. | (i) Public notice of a comment period of at least 35 days provided as follows: <ul style="list-style-type: none"> <li>• Posted on ODA and DEQ websites; and</li> <li>• Emailed to interested persons list maintained by ODA.</li> </ul> (ii) Opportunity for public hearing. See S1.H.4.<br>(iii) A written response to relevant comments will be developed by ODA and made available to interested persons. |
| <b>Contents of Public Notice</b>    | <ul style="list-style-type: none"> <li>• Name of operation</li> <li>• Name of operator or owner if different than operator, mailing address, and telephone number</li> <li>• Physical address of operation</li> <li>• Type of operation</li> <li>• Number of animals proposed</li> <li>• Land Use Compatibility Statement (LUCS)</li> <li>• Summary of AWMP</li> </ul>   | <ul style="list-style-type: none"> <li>• Name of operation</li> <li>• City, county, and zip code</li> <li>• Permit registration number</li> <li>• Type of operation</li> </ul>   | <ul style="list-style-type: none"> <li>• Name of operation</li> <li>• City, county, and zip code</li> <li>• Permit registration number</li> <li>• Type of operation</li> <li>• Overview of proposed substantial change</li> </ul>  |

## S2. DISCHARGE LIMITATIONS AND OPERATING REQUIREMENTS

### S2.A. Prohibitions and Discharge Limitations

1. The permit registrant must not discharge manure, litter, or process wastewater to surface water and groundwater of the state except as allowed in S2.B and S2.C and provided these surface water discharges do not exceed the following effluent limits.
  - (a) *E. coli* must not exceed zero organisms/100 mL or quantitation limit of 2 Colony Forming Units/100 mL or 0.0 most probable number/100 mL;
  - (b) Nitrate plus Nitrite Nitrogen (NO<sub>3</sub>+NO<sub>2</sub>) must not exceed zero mg/L or quantitation limit of 0.1 mg/L;
  - (c) Total Phosphorus (P) must not exceed zero mg/L or quantitation limit of 0.1 mg/L.

Types of discharge that are prohibited include but are not limited to: contaminated runoff from confinement or waste accumulation areas; overflow or discharges from waste storage facilities; discharges due to improper land application activities from seepage below the root zone, surface drainages or field tile outlets; dry-weather discharges, discharges due to equipment failure; leakage or seepage from facilities in the production area in excess of approved designs; and discharges to underground injection control (UIC) systems.

2. Compliance with the effluent limits above must be determined by laboratory test results of a representative grab sample of the discharge taken at the time of occurrence. If a grab sample is not taken, then the permit registrant is in violation of the effluent limits.

### S2.B. Production Area Limitations

1. For all CAFOs (except swine, poultry, and veal *large* CAFOs, the construction of which commenced after April 14, 2003):  
The permit registrant must not discharge manure, litter, or process wastewater to surface water of the state from the production area, except when:
  - (a) Rainfall events cause an overflow of waste management and storage facilities designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater, including the runoff and direct precipitation, from a 25-year, 24-hour rainfall event; and
  - (b) The production area is operated in accordance with the applicable inspection, maintenance, recordkeeping, and reporting requirements of this permit.
2. For swine, poultry, and veal *large* CAFOs the construction of which commenced after April 14, 2003:  
The permit registrant must not discharge manure, litter, or process wastewater from the production area to surface water of the state.
3. The permit registrant must properly land apply manure, litter, and wastewater from the production area in a manner consistent with S2.C. All other authorized discharges from the production area must be managed to minimize impacts on surface water and groundwater of the state and meet the effluent limits in S2.A above.
4. The permit registrant must not exceed the seepage design rates approved by ODA for waste storage or animal confinement facilities in the production area and seepage to groundwater from these facilities must not violate state groundwater quality protection standards.
5. ODA will inform a permit registrant if any additional limits or controls are necessary to be consistent with the wasteload allocations in an EPA-approved or issued Total Maximum Daily Load for NPDES permit coverage or if coverage to an individual NPDES is necessary.

### S2.C. Land Application Limitations

1. To prevent discharges to waters of the state, the permit registrant must apply manure, litter, or process wastewater to land application areas at agronomic rates in accordance with the permit registrant's ODA-approved AWMP. Land application areas include land under the control of the permit registrant, to which manure, litter, or process wastewater from the production area is or may be applied.
2. The permit registrant's discharges to groundwater due to seepage below the root zone of the crop or by other means must not violate state groundwater quality protection standards.

3. The permit registrant is allowed to apply manure, litter, or process wastewater to frozen soil provided:
  - (a) The AWMP addresses such applications [see S3.C.2(k), p. 14];
  - (b) The application does not result in a discharge to surface water or groundwater, except as allowed in S2.B and S2.C; and
  - (c) Land applications do not cause or contribute to a violation of state water quality standards.
4. The permit registrant must not apply manure, litter, or process wastewater to saturated soils immediately before or during rainfall events that are expected to result in surface runoff. If the permit registrant makes such an application because it is a desired alternative to allowing waste storage or treatment works to overflow (for example, land application to saturated soils to pond wastewater onsite provides for greater protection of surface water than a direct overflow of a waste storage tank to surface water), the application will be considered a violation of this permit.
5. ODA will inform a permit registrant if any additional limits or controls are necessary to be consistent with the wasteload allocations in an EPA-approved or issued Total Maximum Daily Load for NPDES permit coverage or if coverage to an individual NPDES is necessary.

**S2.D. Direct Access by Animals to Surface Water of the State in the Production Area Prohibited**

The permit registrant must prevent direct animal contact with surface water of the state in the production area of its CAFO. Direct animal contact means any situation where animals in the production area have free access and are allowed to loiter or drop waste in surface water. Direct contact with surface water of the state by animals on pasture or rangeland is not, by itself, a violation of this permit.

**S2.E. Waste Storage Facilities**

1. The permit registrant must provide adequate storage capacity for solid and liquid wastes at all times so that land application occurs only during periods when soil and weather conditions allow for agronomic application and are in compliance with the Land Application Limitations in S2.C, p. 10 of this permit.
2. The permit registrant must site, design, construct, operate, and maintain all waste storage facilities to contain all manure, litter, process wastewater, and stormwater runoff and direct precipitation from a 25-year, 24-hour rainfall event for the storage period established in the ODA-approved AWMP. New and modified construction of waste facilities must be approved in advance and prior to construction by ODA in conformance with ORS 468B.055 and OARs 340-051 and 603-074.
3. Permit registrants with a *large* CAFO must also have depth markers in all surface liquid impoundments (for example, lagoons, ponds, tanks) designed to clearly indicate the:
  - (a) Maximum design volume,
  - (b) Minimum capacity necessary to contain the 25-year, 24-hour rainfall event, including additional freeboard requirements, and
  - (c) Depth of manure and process wastewater.

**S2.F. Prevention of System Overloading**

1. The permit registrant may not increase the number of animals over 10% or 25 animals, whichever is greater, of the maximum number assigned by ODA in the *Notice of Registration and General Permit Summary* until an updated plan is approved in writing by ODA (see S3.B AWMP Submittal, p. 13, and S3.D Requirements for AWMP Updates and Changes, p. 14).
2. The permit registrant must ensure that animal numbers do not exceed the capacity of the waste storage facilities described in the ODA-approved AWMP.

**S2.G. Handling of Animal Mortalities**

The permit registrant must not dispose of animal mortalities in liquid manure or treatment works. Animal mortality composting is allowed and must be described in the Animal Waste Management Plan. The permit registrant must handle animal mortalities in such a way as to prevent discharge of pollutants to waters of the state (surface water and groundwater).

**S2.H. Proper Operation and Maintenance**

The permit registrant must at all times properly operate and maintain all facilities and systems used for process wastewater collection, storage and utilization, and correct any deficiencies found as soon as possible.

**S2.I. Maintaining Compliance if System Fails**

The permit registrant must control all applications and discharges upon reduction, loss, or failure of the waste storage or utilization facilities until the facilities are restored or an alternative method of storage or utilization is provided. This requirement also applies when the primary source of power is reduced, lost, or fails.

**S2.J. Setback Requirement**

The permit registrant must develop and maintain setbacks or vegetated buffers when manure, litter, or process wastewater application occur adjacent to any surface water, open tile intake structures, sinkholes, well heads, or other conduits to surface water or groundwater. The permit registrant must also include descriptions of setbacks, vegetated buffers, and/or equivalent measures in its AWMP. Compliant setbacks, vegetated buffers, or equivalent measures include the following:

1. 100 ft. setbacks (non-vegetated, non-managed buffers).
2. 35 ft. vegetated, managed buffers.
3. If approved by ODA, variable-width, seasonal setbacks determined by the type of manure, litter or process wastewater and application method used.
4. If approved by ODA, a demonstration that a setback or vegetated buffer is not necessary or may be reduced in size because implementation of alternative conservation practices or field-specific conditions will provide equivalent or better environmental protection than [1., 2. and 3.] above.

**S2.K. Manure, Litter, or Process Wastewater Transfers**

1. The permit registrant retains responsibility of the manure, litter, or process wastewater until the transfer or export is completed with the required documentation.
2. The permit registrant must maintain manure, litter, or process wastewater transfer or export records as required by S4.C.2(d), p. 19.
3. Prior to transferring manure, litter, or process wastewater to other persons, the permit registrant with a *large* CAFO must provide the recipient of manure, litter, or process wastewater with a manure nutrient analysis conducted within the previous 12 months.

**S2.L. Proper Disposal of Other Wastes**

The permit registrant must dispose of any chemicals or other wastes in accordance with applicable state regulation. The permit registrant must manage chemicals and wastes to prevent their disposal in any manure, litter, process wastewater, or stormwater storage or treatment system unless specifically designed to treat these wastes and the wastes and treatment systems are identified in the AWMP. The permit registrant must not dispose of chemicals or other wastes to any system used for the control of uncontaminated stormwater.

### S3. ANIMAL WASTE MANAGEMENT PLAN

#### S3.A. Animal Waste Management Plan (AWMP) Implementation and Compliance

1. Upon registration to this permit, the permit registrant must implement its current ODA-approved AWMP developed for its CAFO.
2. The permit registrant's ODA-approved AWMP is incorporated into this permit by reference. The permit registrant must comply with all terms and conditions of its ODA-approved AWMP. Failure to comply with the ODA-approved AWMP constitutes a violation of the terms and conditions of this permit.

#### S3.B. AWMP Submittal and Public Notice

1. The applicant applying for permit coverage for the first time must submit its AWMP with the ATR to ODA for review and approval according to the schedule provided in S1.C, p. 7.
2. The existing permit registrant with coverage under NPDES General Permit #01 or another permit may submit its AWMP previously approved by ODA with the *Application to Register or Renewal Application* for review and approval according to the requirements in S1.C, p.7
3. AWMPs are subject to public notice requirements detailed in S1.H, p. 8.

#### S3.C. AWMP Elements

1. The permit registrant must ensure that its AWMP is adequate for the proposed or existing population of animals, reflective of the proposed or existing facility operation, and prepared in accordance with the terms and conditions of this permit, OAR 340-051, and OAR 603-074.
2. The AWMP must to the extent applicable include the following:
  - (a) Procedures to ensure collection, handling, and storage of contaminated stormwater runoff from the production area, manure, litter, and process wastewater in compliance with the requirements of S2. Discharge Limitation and Operating Requirements. Calculations used to determine that storage capacity exists must be provided, including a demonstration that facilities are at least designed and constructed to contain all manure, litter, process wastewater, and stormwater runoff and direct precipitation from a 25-year, 24-hour rainfall event.
  - (b) Procedures to ensure proper operation and maintenance of the storage facilities.
  - (c) Procedures for proper management of animal mortalities. The procedures must ensure that animal mortalities are disposed of legally and are not disposed of in any storage or treatment system that is not specifically designed to treat animal mortalities.
  - (d) Procedures to ensure that clean water is diverted, as appropriate, from the production area.
  - (e) Procedures to prevent direct contact of confined animals with surface water.
  - (f) Identification of appropriate site-specific conservation practices to be implemented, including buffers, setback areas, or equivalent practices, to control runoff of pollutants to surface water and groundwater.
  - (g) Protocols to land apply manure, litter, or process wastewater in accordance with site-specific nutrient management practices that ensure: 1) appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater, and 2) application of nutrient at rates not to exceed the maximum agronomic application rate included in the ODA-approved AWMP. The protocols must include the following:
    - (i) The NRCS Phosphorous Index, USDA/NRCS Oregon Agronomy Technical Note #26, revised October 2008 or equivalent calculation must be completed for all fields or management units that receive manure, litter or process wastewater to determine if nitrogen or phosphorous is the most limiting nutrient. The maximum nutrient application rate must be calculated for the most limiting nutrient and must account for all other nitrogen and phosphorus sources.
    - (ii) Expected crop yields.
    - (iii) Calculations showing the total nitrogen and phosphorus to be applied annually to each field from manure, litter, process wastewater, and other sources.
    - (iv) Annual manure application rates and an explanation of the basis for determining these rates. For *large* CAFOs, these rates must be based on actual test data. For other operations, data or "book values" from established reference sources (for example, Oregon Animal Waste Management program) may be used instead of actual testing.
    - (v) Method(s) used to apply manure, litter, or process wastewater

- (vi) Timing of manure, litter, and process wastewater applications.
- (h) For all operations, protocols for soil testing. For *large* CAFOs, protocols for testing of manure, litter, and process wastewater. For other operations that are not required to test manure, litter, or process wastewater, test protocols are not required but the references that are used to characterize manure, litter, or process wastewater must be included.
- (i) If applicable, an Agricultural Compost Management Plan must be included as required by OAR 340-096 for composting activities.
- (j) If applicable, a Solid Waste Conversion Technology Plan must be included as required by OAR 340-096.
- (k) Frozen soil application procedures if applications of manure, litter, or process wastewater will be made to frozen soil. At a minimum, the following must be included:
  - (i) Description of the potential receiving field(s), estimates of waste amounts and types, and estimated timing of applications.
  - (ii) Aerial photo(s) identifying all areas and surface water bodies within 1,000 ft. of the boundaries of the receiving field(s).
  - (iii) Soil map(s) identifying soil types for receiving field(s).
  - (iv) Topographic map(s) for receiving field(s).
  - (v) Description of the structural practices in place to ensure that no discharges to surface water occur during application and after the soil thaws.
  - (vi) Description of the method used to determine when soil is frozen and management practices to be followed when planning an application and during and after an application to frozen soil.
  - (vii) Description of monitoring and reporting requirements to ensure that the permit registrant is in compliance with frozen soil application procedures.
  - (viii) Procedures for transfer or export of manure, litter, or process wastewater.
  - (ix) Identification of specific records that will be maintained to document the implementation and management of the minimum elements described above.

**S3.D. Requirements for AWMP Updates and Changes**

(See Table 3, p.16, for an overview of the following requirements.)

1. Requirements for *small or medium* CAFOs electing permit coverage (see Table 3, p. 16, for an overview)
  - (a) *Substantial changes.* The permit registrant must submit any proposal to make substantial changes to its AWMP to ODA for approval at least 45 days in advance of implementation of the proposed changes. ODA will public notice the proposal as described in S1.H, p. 8. ODA will notify the permit registrant of its final decision concerning the proposed changes after the public notice period ends. The permit registrant must not implement a proposed change until ODA has approved it. The following types of changes to an AWMP are considered substantial:
    - (i) A change in the type of manure system including but not limited to switching from a dry to a liquid manure system, switching from a liquid to a dry manure system, or changing the manure system to accommodate an animal species or type of operation not included in the scope of the current AWMP.
    - (ii) An increase in maximum allowed animal numbers such that the operation becomes defined as a *large* CAFO.
  - (b) *Non-substantial changes.* Public notice of non-substantial changes (described below) to an AWMP is not required; however, the permit registrant must submit its proposal to make such a change to ODA for approval at least 45 days in advance of implementation of the proposed change unless a different timeframe is allowed by ODA. ODA will notify the permit registrant of its final decision concerning the proposed change after reviewing the proposal. The permit registrant must not implement a proposed change until ODA has approved it. The following changes to an AWMP are considered non-substantial provided they do not result in a substantial modification listed in paragraph (a) above:
    - (i) An increase in animal numbers greater than 10% of the registrant's maximum allowed animal numbers provided the increase does not change the operation into a *large* CAFO.
    - (ii) When facility expansions, production increases, or process modifications will result in new or increased generation of waste, litter, or process wastewater beyond the scope of the current AWMP.

2. Requirements for all other CAFOs (see Table 3, p. 16, for an overview)
- (a) *Substantial changes.* The permit registrant must submit any proposal to make substantial changes to its AWMP to ODA for approval at least 60 days in advance of the proposed changes. ODA will provide public notice on the proposal as described in S1.H, p. 8. ODA will notify the permit registrant of its final decision concerning the proposed changes after the public notice period ends. The permit registrant must not implement a proposed change until ODA has approved it. The following types of changes to an AWMP are considered substantial:
- (i) Addition of new land application areas not previously included in the AWMP, unless the land application area is covered by an existing AWMP that has already been incorporated into an existing NPDES permit and the application of manure, litter, or process wastewater on the newly added land application area is in accordance with that existing NPDES permit.
  - (ii) Any changes to the field-specific maximum annual rates for land application.
  - (iii) Any changes to the maximum amounts of nitrogen and phosphorus derived from all sources for each crop.
  - (iv) Addition of any crop or other uses not included in the AWMP and corresponding field-specific rates of application.
  - (v) A change in the type of manure system including but not limited to switching from a dry to a liquid manure system, switching from a liquid to a dry manure system, or changing the manure system to accommodate an animal species or type of operation not included in the scope of the current AWMP.
  - (vi) Any changes that are likely to increase the risk of pollutant transport to surface water or groundwater.
- (b) *Non-substantial changes.* The permit registrant must submit any proposal to make non-substantial changes to its AWMP to ODA for approval at least 60 days in advance of the proposed changes unless a different timeframe is allowed by ODA. A proposal for a non-substantial change is not subject to public notice. ODA will notify the permit registrant of its final decision concerning the proposed changes after reviewing the proposal. The permit registrant must not implement a proposed change until ODA has approved it. The following types of changes to an AWMP are considered non-substantial provided they do not result in a substantial modification listed in paragraph (a) above:
- (i) An increase in animal numbers greater than 10% of the registrant's maximum allowed animal numbers.
  - (ii) When facility expansions, production increases, or process modifications will result in new or increased generation of waste, litter, or process wastewater beyond the scope of the current AWMP.

**Table 3: Overview of Requirements for Proposed Changes to AWMPs**

|   | Small or Medium CAFO Electing Coverage  |  | All Other CAFOs  |  |
|---|---|--|--|--|
|   | <i>Substantial Change</i>   | <i>Non-Substantial Change</i>  | <i>Substantial Change</i>  | <i>Non-Substantial Change</i>  |
| <b>Description of proposed change</b>     | <ol style="list-style-type: none"> <li>1. A change in the type of manure system including but not limited to switching from a dry to a liquid manure system, switching from a liquid to a dry manure system, or changing the manure system to accommodate an animal species or type of operation not included in the scope of the current AWMP.</li> <li>2. An increase in maximum allowed animal numbers such that the operation becomes defined as a large CAFO.</li> </ol> | <p>The following are considered non-substantial provided they do not result in a substantial change:</p> <ol style="list-style-type: none"> <li>1. An increase in animal numbers greater than 10% of the registrant's maximum allowed animal numbers.</li> <li>2. When facility expansions, production increases, or process modifications will result in new or increased generation of waste, litter, or process wastewater beyond the scope of the current AWMP.</li> </ol> | <ol style="list-style-type: none"> <li>1. Addition of new land application areas not previously included in the AWMP, unless the land application area is covered by an existing AWMP that has already been incorporated into an existing NPDES permit and the application of manure, litter, or process wastewater on the newly added land application area is in accordance with that existing NPDES permit.</li> <li>2. Any changes to the field-specific maximum annual rates for land application.</li> <li>3. Any changes to the maximum amounts of nitrogen and phosphorus derived from all sources for each crop.</li> <li>4. Addition of any crop or other uses not included in the AWMP and corresponding field-specific rates of application.</li> <li>5. A change in the type of manure system including but not limited to switching from a dry to a liquid manure system, switching from a liquid to a dry manure system, or changing the manure system to accommodate an animal species or type of operation not included in the scope of the current AWMP.</li> <li>6. Any changes that are likely to increase the risk of nitrogen and phosphorus transport to surface water or groundwater.</li> </ol> | <p>The following are considered non-substantial provided they do not result in a substantial change:</p> <ol style="list-style-type: none"> <li>1. An increase in animal numbers greater than 10% of the registrant's maximum allowed animal numbers.</li> <li>2. When facility expansions, production increases, or process modifications will result in new or increased generation of waste, litter, or process wastewater beyond the scope of the current AWMP.</li> </ol> |
| <b>Timeline to submit proposal to ODA</b> | Submit at least 45 days in advance of proposed change(s).   | Submit at least 45 days in advance of proposed change(s) unless a different timeframe allowed by ODA.  | Submit at least 60 days in advance of proposed change(s).  | Submit at least 60 days in advance of proposed change(s) unless a different timeframe is allowed by ODA.   |
| <b>Public notice process</b>              | ODA will public notice as described in S1.H, p. 8.  | Not required.  | ODA will public notice as described in S1.H, p. 8.   | Not required.  |
| <b>ODA approval</b>                       | ODA will notify the permit registrant of its final decision concerning the proposed change(s) after the public notice period ends.  | ODA will notify the permit registrant of its final decision concerning the proposed change(s) after reviewing the proposal.  | ODA will notify the permit registrant of its final decision concerning the proposed change(s) after the public notice period ends.   | ODA will notify the permit registrant of its final decision concerning the proposed change(s) after reviewing the proposal.  |

## S4. MONITORING, INSPECTION, RECORDKEEPING, AND REPORTING REQUIREMENTS

### S4.A. Monitoring Requirements

#### 1. Prohibited Discharges

If a prohibited discharge to surface water or groundwater that is not allowed by S2.B or S2.C, p. 10 occurs, the permit registrant must record the following information and notify ODA within 24 hours (see S4.D, p. 19 for written reporting requirements):

- (a) A description and cause of the discharge;
- (b) The period of discharge including exact date(s), time(s), and duration of discharge;
- (c) An estimate of discharge volume;
- (d) Name or location of receiving water;
- (e) If a grab sample was taken of the discharge;
- (f) Corrective steps taken, if appropriate, to reduce, eliminate, or prevent reoccurrence of the discharge;
- (g) For any unauthorized discharge that may have come in contact with a drinking water intake, confirmation that Oregon Emergency Response System (OERS) was notified.

#### 2. Soil, Manure, Litter, and Process Wastewater Monitoring for Large CAFOs

The permit registrant with a *large* CAFO must conduct the following sampling and analysis:

| Sample Type  | Analytical Parameter   | Minimum Frequency  | Sample Method  |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>• Liquid manure</li> <li>• Process wastewater (if handled separately from liquid manure)</li> <li>• Solid manure</li> </ul> | Total nitrogen<br>Total phosphorus   | Annually   | Sample according to guidance contained in PNW 0533 and PNW 505.                                  |
| Exported manure, litter, and process wastewater  | Total nitrogen<br>Total phosphorus   | Annually   | Sample according to guidance contained in PNW 0533 and PNW 505.                                  |
| Soil from land application area(s)   | Total nitrogen<br>Total phosphorus<br>Nitrate-nitrogen   | Annually on a minimum of 20% of the fields or management units that receive manure, litter or process wastewater applications each year. All fields or management units must be sampled at least once every 5 years. | Sample according to guidance contained in PNW 570-E, EM 8832-E for post-harvest nitrate-nitrogen |
| Grab sample of effluent discharge from production or land application area   | <i>E. coli</i> ,<br>Nitrate plus Nitrite Nitrogen (NO <sub>3</sub> +NO <sub>2</sub> ),<br>Total Phosphorus (P) | Upon occurrence see S2.A.2, p.10.  | Grab sample analyzed using test methods in 40 CFR Part 136                                       |

#### 3. Soil, Manure, Litter, and Process Wastewater Monitoring for all Other Operations

The permit registrant must conduct the following sampling and analysis:

| Sample Type                        | Analytical Parameter               | Minimum Frequency   | Sample Method   |
|------------------------------------|------------------------------------|---|---|
| Soil from land application area(s) | Total nitrogen<br>Total phosphorus | Once every 5 years from all fields or management units where manure, litter, or | Sample according to guidance contained in PNW 570-E, EM |

|  |  |                                   |  |
|--|--|-----------------------------------|--|
|  |  | process wastewater is applied.    | 8832-E.  |
| Grab sample of effluent discharge from production or land application area | <i>E. coli</i> , Nitrate plus Nitrite Nitrogen (NO <sub>3</sub> +NO <sub>2</sub> ), Total Phosphorus (P) | Upon occurrence see S2.A.2, p.10. | Grab Sample analyzed using test methods in 40 CFR Part 136 |

**S4.B. Inspection Requirements**

1. The permit registrant must conduct the following inspections:

| Item   | Large CAFO   | All Other Operations                                    |
|--|--|---|
| (a) Stormwater diversion devices, runoff diversion structures, animal waste storage structures, and devices channeling contaminated stormwater to wastewater and manure storage and containment structures | Weekly and record results  | At least once every six months                          |
| (b) Water lines, including drinking water or cooling water lines   | Daily and record results   | At least once every six months                          |
| (c) Equipment used for land application of manure, litter, or process wastewater   | Daily when equipment is in use and record results  | At least once every six months when equipment is in use |
| (d) Liquid impoundments for manure and process wastewater  | Weekly and record depth of manure and process wastewater according to depth marker required by S2.E.3, p. 11 | At least once every six months                          |

2. The permit registrant must correct any deficiencies found as a result of these inspections as soon as possible. The permit registrant with a *large CAFO* must record any actions taken to correct these deficiencies and, if deficiencies are not corrected within 30 days, provide an explanation of the factors preventing immediate correction.

**S4.C. Recordkeeping and Availability Requirements**

1. The permit registrant must maintain all information required by this permit at the facility for at least five (5) years and make this information available to ODA upon request.
2. Upon obtaining permit coverage, the permit registrant must record the following information:

| Item or Parameter   | Large CAFO | All Other Operations |
|---|------------|----------------------|
| (a) Date, amount, and nutrient loading of manure, litter, or process wastewater applied to each field.  | Required   | Required             |
| (b) Weather conditions at the time of application and 24 hours before and after application.  | Required   | Not required         |
| (c) Total amount of nitrogen and phosphorus actually applied annually to each field, including documentation of calculations of the total amount applied. | Required   | Required             |

| Item or Parameter   | Large CAFO   | All Other Operations |
|---|--|----------------------|
| (d) Total amount of manure or wastewater transferred or exported to other persons.      | Required. Also include:<br>(i) Date and amount of each transfer or export<br>(ii) Name and address of each recipient<br>(iii) Copy of the manure nutrient analysis conducted provided to the recipient (See S2.K.3, p. 12) | Required             |
| (e) Description of actions taken to correct deficiencies discovered during inspections. | Required (See S4.B.2, p. 18)   | Not required         |

**S4.D. Reporting Requirements**

1. Reporting to ODA and Oregon Emergency Response System (OERS)
  - (a) If a discharge to surface water or groundwater occurs that is not allowed by S2.B and S2.C, p. 10, the permit registrant must notify ODA within 24 hours of the discharge. The permit registrant must submit a written report within five (5) days to ODA. The information to be submitted is listed in the monitoring requirements (See S4.A, p. 17) of this permit.
  - (b) The permit registrant must notify ODA within 24 hours of becoming aware of any significant physical failure at any time of treatment works required under this permit.
  - (c) The permit registrant must notify ODA within 24 hours of any permit noncompliance that may endanger health or the environment as described in G13.6, p. 23.
  - (d) In addition to complying with [1.(c)] above, the permit registrant must notify Oregon Emergency Response System (OERS) of any unauthorized discharge that may come in contact with a surface water or groundwater drinking water system intake within 24 hours. Notification must be made by calling OERS at 1-800-452-0311
  
2. Reporting of Monitoring Results of a prohibited effluent discharge
  - (a) The permit registrant must submit monitoring information for an effluent grab sample no later than one month from the date the sample was taken unless a different schedule is established by an administrative order as described in S4.E, p. 20.
  - (b) Reporting of monitoring information must include:
    - (i) The date, exact place, and time of sampling or measurements;
    - (ii) The individual(s) who performed the sampling or measurements;
    - (iii) The date(s) analyses were performed;
    - (iv) The individual(s) who performed the analyses;
    - (v) The analytical techniques or methods used; and
    - (vi) The results of such analyses that includes the sample result and quantitation limit of the analysis.
  
3. Annual Report
  - (a) The permit registrant must submit an annual report to ODA by March 15 of each year. The annual report must include the following for the previous calendar year :
    - (i) Maximum number and type of animals approved by ODA in the permittee's *Notice of Registration*, whether in open confinement or housed under roof (for example, beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, ducks, turkeys, other).
    - (ii) Actual number of animals by type averaged over the year.
    - (iii) Estimated amount of total manure, bedding, litter, process wastewater, and other material that comes in contact with manure generated (tons, gallons, cubic feet, or cubic yards).
    - (iv) Estimated amount of total manure, bedding, litter, process wastewater, and other material that comes in contact with manure transferred to other persons by the permittee (tons, gallons, cubic feet, or cubic yards).
    - (v) Estimated amount of manure, bedding, litter, process wastewater, and other material that comes in contact with manure applied to land by the permittee (tons, gallons, cubic feet, or cubic yards).
    - (vi) Total number of acres for land application covered by the AWMP developed in accordance with

the terms of this permit.

- (vii) Total number of acres under control of the permittee that were used for land application of manure, litter, and process wastewater in the previous 12 months.
  - (viii) Summary of all manure, litter, and process wastewater discharges from the production area that have occurred, including date, time and approximate volume.
  - (ix) A statement indicating whether the AWMP was developed or approved by a certified waste management planner.
  - (x) Any Concentrated Animal Feeding Operation that discharges to surface waters must also report the following items (xi) through (xvi). (40 CFR 122.42(e)(4)(viii))
  - (xi) Actual crop(s) planted and actual yield(s) for each field.
  - (xii) Actual nitrogen and phosphorus content of the manure, litter, and process wastewater.
  - (xiii) Data used and results of calculations based on protocol in the ODA-approved AWMP.
  - (xiv) Amount of manure, litter, and process wastewater applied to each field during the previous 12 months.
  - (xv) Results of soil testing for nitrogen and phosphorus if testing was performed.
  - (xvi) Amount of any supplemental fertilizer applied.
- (b) The annual report must be signed and certified by the permittee or permittee's authorized representative with the following statement: "I certify, under penalty of law, that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

**S4.E. Additional Monitoring**

1. ODA may establish specific monitoring requirements in addition to those contained in this permit by administrative order. An administrative order is an agency action expressed in writing directed to a named person or named persons (ORS 183.310).
2. If a permittee experiences two or more discharges within a 24-month period that are not associated with a 25-year, 24-hour or greater rainfall event, ODA may require surface water and/or groundwater quality monitoring or transfer the permittee to an individual permit. Monitoring for the following parameters may be required: bacteria, total suspended solids, total kjeldahl nitrogen, biochemical oxygen demand, and other nutrient indicators. If ODA waives the additional monitoring requirements because such monitoring would be impracticable or not likely to produce useful information, ODA will set out the basis for the decision in writing and make the decision available to interested persons.

## GENERAL CONDITIONS

The general conditions in this schedule apply only to the extent they do not conflict with the requirements contained in special conditions S1 through S4. If the permit requirements in special conditions S1 through S4 conflict with these general conditions, the permit requirements in special conditions S1 through S4 will control.

### G1. Compliance with other laws and statutes

Nothing in the permit will be construed as excusing the permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

### G2. Duty to comply [40 CFR § 122.41(a)]

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

1. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
2. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Clean Water Act provides that any person who *negligently* violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who *knowingly* violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
3. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

### G3. Duty to reapply [40 CFR § 122.41(b)]

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

### G4. Need to halt or reduce activity not a defense [40 CFR § 122.41(c)]

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**G5. Duty to mitigate [40 CFR § 122.41(d)]**

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**G6. Proper operation and maintenance [40 CFR § 122.41(e)]**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

**G7. Permit actions**

1. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR § 122.41(f)]
2. After notice, registration under this permit may be modified or revoked as it applies to any person for cause as follows:
  - (a) Violation of any terms or conditions of the permit,
  - (b) Failure of the permittee to disclose fully all relevant facts, or misrepresentations of any relevant facts by the permittee during the permit issuance process and during the life of the permit;
  - (c) Failure to pay permit fees required by Oregon Administrative Rule when due;
  - (d) Information indicating that the permitted operation poses a threat to human health or welfare;
  - (e) A change in ownership or control of the operation, or
  - (f) Other causes listed in 40 CFR § 122.62 and 122.63.
3. Modification or revocation of coverage under this permit as it applies to any person may be initiated by ODA.
4. Issuance of coverage under an individual permit may be initiated by ODA in accordance with S1.A.2.

**G8. Property rights [40 CFR § 122.41(g)]**

This permit does not convey any property rights of any sort, or any exclusive privilege.

**G9. Duty to provide information [40 CFR § 122.41(h)]**

The permittee shall furnish to the director, within a reasonable time, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the director, upon request, copies of records required to be kept by this permit.

**G10. Inspection and entry [40 CFR § 122.41(i)]**

The permittee shall allow the director or an agency authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or state law, any substances or parameters at any location.

**G11. Monitoring and records [40 CFR § 122.41(j)]**

1. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
2. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which must be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a

period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the director at any time.

3. Records of monitoring information must include:
  - (a) The date, exact place, and time of sampling or measurements;
  - (b) The individual(s) who performed the sampling or measurements;
  - (c) The date(s) analyses were performed;
  - (d) The individual(s) who performed the analyses;
  - (e) The analytical techniques or methods used; and
  - (f) The results of such analyses.
4. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 unless another method is required under 40 CFR subchapters N or O.
5. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

**G12. Signatory requirement [40 CFR § 122.21(k)]**

1. All applications, reports, or information submitted to the director shall be signed and certified. (See § 122.22)
2. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

**G13. Additional reporting requirements [40 CFR § 122.41(l)]**

1. *Planned changes.* The permittee shall give notice to the director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - (a) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in § 122.29(b); or
  - (b) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under § 122.42(a)(1).
  - (c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
2. *Anticipated noncompliance.* The permittee shall give advance notice to the director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.
3. *Transfers.* This permit is not transferable to any person except after notice to the director. The director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See § 122.61; in some cases, modification or revocation and reissuance is mandatory.)
4. *Monitoring reports.* Monitoring results must be reported at the intervals specified elsewhere in this permit.
  - (a) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the director for reporting results of monitoring of sludge use or disposal practices.
  - (b) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the director.
  - (c) Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean unless otherwise specified by the director in the permit.
5. *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.
6. *Twenty-four hour reporting.*
  - (a) The permittee shall report any noncompliance that may endanger health or the environment. Any information must be provided orally within 24 hours from the time the permittee becomes aware of the

- circumstances. A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- (b) The following must be included as information that must be reported within 24 hours under this paragraph.
    - (i) Any unanticipated bypass that exceeds any effluent limitation in the permit. (See § 122.41(g) or G14, p. 24.)
    - (ii) Any upset which exceeds any effluent limitation in the permit. (See § 122.41(n) or G15, p. 24.)
    - (iii) Violation of a maximum daily discharge limitation for any of the pollutants listed by the director in the permit to be reported within 24 hours. (See § 122.44(g).)
  - (c) The director may waive the written report on a case-by-case basis for reports under G13.6(b) of this section if the oral report has been received within 24 hours.
7. *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under G13.4, 5, and 6 of this section, at the time monitoring reports are submitted. The reports must contain the information listed in G13.6 of this section.
8. *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the director, it shall promptly submit such facts or information.

**G14. Bypass [40 CFR § 122.41(m)]**

- 1. *Definitions.*
  - (a) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.
  - (b) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- 2. *Bypass not exceeding limitations.* The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of G14.3 and 4 of this section.
- 3. *Notice*
  - (a) *Anticipated bypass.* If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
  - (b) *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass as required in G13.6 of this section (24-hour notice).
- 4. *Prohibition of bypass.*
  - (a) Bypass is prohibited, and the director may take enforcement action against a permittee for bypass, unless:
    - (i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
    - (ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
    - (iii) The permittee submitted notices as required under G14.3 of this section.
  - (b) The director may approve an anticipated bypass, after considering its adverse effects, if the director determines that it will meet the three conditions listed above in G14.4(a) of this section.

**G15. Upset [40 CFR § 122.41(n)]**

- 1. *Definition.* *Upset* means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- 2. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of G15.3 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

3. *Conditions necessary for a demonstration of upset.* A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (a) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - (b) The permitted facility was at the time being properly operated; and
  - (c) The permittee submitted notice of the upset as required in G13.6(b)(ii) of this section (24 hour notice).
  - (d) The permittee complied with any remedial measures required under G5 of this section.
4. *Burden of proof.* In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.



**OREGON  
DEPARTMENT OF  
AGRICULTURE**

*Protect. Promote. Prosper.*

**Confined Animal Feeding Operations Program**  
635 Capitol St, NE, Salem, OR 97301-2532  
503.986.4699 | [Oregon.gov/ODA](http://Oregon.gov/ODA)

July 25, 2023

Rocky Mouw (via electronic mail)  
3R Cattle, LLC  
5655 South Black Cat Rd  
Meridian, ID 83642  
[bcdairy@yahoo.com](mailto:bcdairy@yahoo.com)

RE: Animal Waste Management Plan (AWMP) review of animal modification / MA# 1000319.

Dear Rocky,

On May 10, 2023, the Oregon Department of Agriculture (department) received a draft AWMP for your dairy heifer replacement facility located at 4250 Hopkins Rd., in Ontario, Oregon. Review of your AWMP resulted in additional activities on the following dates:

- May 21, 2023, May 22, 2023, and May 23, 2023, reviewed information provided in the AWMP.

We have completed our review of your AWMP, and our conclusions follow.

**AWMP Status: Conditionally Approved.**

The AWMP you provided was logged into our files as #23012. The AWMP has been reviewed and is hereby conditionally approved with the following conditions:

- The land application fields that receive liquid manure and process wastewater or solid manure/compost must be soil sampled once every 3 years with 1/3 of all fields tested yearly according to the following schedule. Soil samples are to comply with CAFO Permit Special Condition S4.A.2.
- Sample and analyse liquid manure annually from each separate manure storage facility to comply with CAFO Permit Special Condition S4.A.2.

Please find enclosed the AWMP Review Memo.

**Construction Status: None Proposed at This Time.**

All construction of substantial manure system structures requires department approval prior to construction. Please apply to the department for construction approval if you plan to build manure storage facilities.

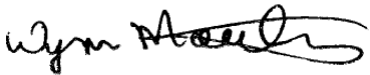
**Permit Status: Active.**

Your heifer replacement facility, 3R Cattle, LLC, located at 4250 Hopkins Rd., was previously permitted for a total of 700 cattle with a herd composition of 372 dairy replacement heifers and 328 calves. Upon approval of AWMP #23012, this facility will be permitted for a total of 909 cattle with a herd composition of 600 dairy replacement heifers and 309 calves. Your

operation remains designated as a Medium Concentrated CAFO facility with an Annual Compliance Fee of \$250.00.

The department appreciates your efforts to complete your AWMP. If you have any questions, please contact Hilary Collinsworth, your area Livestock Water Quality Specialist (LWQS), at (541) 881-6020 or the CAFO Program at (503) 986-4699.

Sincerely,



Wym Matthews, Manager  
CAFO and Fertilizer Programs  
(503) 986-4792 office | (503) 986-4730 fax  
[Wym.Matthews@oda.oregon.gov](mailto:Wym.Matthews@oda.oregon.gov)

Enclosure: AWMP Review Memo, AWMP Highlights

cc: Hilary Collinsworth, Area VI, LWQS Inspector  
Wym Matthews, CAFO Program Manager  
Bruce Wilson, Plan Engineer with H&R Engineering, LLC

WM/hc/ms





**OREGON  
DEPARTMENT OF  
AGRICULTURE**

**CONFINED ANIMAL FEEDING OPERATION  
MODIFICATION OF ANIMAL NUMBERS  
NATIONAL POLLUTION DISCHARGE  
ELIMINATION SYSTEM (NPDES PERMIT)**

**Statutory Authority**

Oregon Revised Statutes (ORS) 468B.050 When permit required  
ORS 468B.210 Maximum numbers of animals based on ability to contain, treat, hold and dispose of wastes as necessary to comply with all conditions of the permit.

**A. General Information**

**Master Address #AG-P1000319CAFG**

Name or Business Name – 3R Cattle LLC

Facility Location Address – 4250 Hopkins Road

City – Ontario, OR

Zip Code - 97914

County - Malheur

**B. Livestock Type: Circle the item that best represents your operation.**

1. Beef Feedlot (Fattening)    2. Beef Cattle (Cow/calf)    3. Hogs    4. Sheep and Goats  
 5. Dairy Farm, Heifer Replacement Farm    6. Poultry/Broiler    7. Poultry/Eggs  
 7. Mink/Rabbits    8. Horses and Other Equine    9. Other \_\_\_\_\_

**C. Current Permitted Animal Numbers: In the space below please describe your number of animals by herd composition or class.**

The dairy is currently permitted for 909 livestock consisting of 600 dairy replacements and 309 calves.

**D. Current Permitted CAFO Designation: Circle one. See reverse side for table.**

Large Concentrated Tier1    Large Concentrated Tier2    Medium Concentrated    Medium Confined  
 Small Confined    Small Concentrated

**E. Proposed change in permitted animal numbers: In the space below please describe your proposed animal numbers by herd composition or class.**

The dairy is requesting to be permitted for a total of 1,534 livestock consisting of 550 milk cows, 85 dry cows, 599 heifers and 300 calves.

**F. New CAFO Designation based on increase / decrease in animal numbers. Circle one. See reverse side for table.**

Large Concentrated Tier1    Large Concentrated Tier2    Medium Concentrated    Medium Confined  
 Small Confined    Small Concentrated

**G. Certification:**

I understand that an approved animal waste management plan is required prior to permit increase. I agree to prepare and implement an animal waste management plan in accordance with the requirements and timelines specified in the permit.

Rocky Mow  
Signature (operator or owner)

2-29-24  
Date

Rocky Mow  
Print Name

\_\_\_\_\_  
Signature (operator or owner)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name

| Definition of Legally Authorized Representative:<br>See 40 CFR 122.22 for more detail. Please also provide the information requested in brackets [ ] |  |
|--|--|
| ◆  | <b>Corporation</b> — President, secretary, treasurer, vice-president, or any person who performs principal business functions; or a manager of one or more facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million that is authorized in accordance to corporate procedure to sign such documents |
| ◆  | <b>Partnership</b> — General partner [list of general partners, their addresses, and telephone numbers]  |
| ◆  | <b>Sole Proprietorship</b> — Owner(s) [each owner must sign the application]   |
| ◆  | <b>City, County, State, Federal, or other Public Facility</b> — Principal executive officer or ranking elected official  |
| ◆  | <b>Limited Liability Company</b> — Member [articles of organization]   |
| ◆  | <b>Trusts</b> — Acting trustee [list of trustees, their addresses, and telephone numbers]  |

**SEND THIS FORM TO:** Oregon Department of Agriculture  
 Natural Resources Division  
 635 Capitol Street NE  
 Salem, Oregon 97301-2532

**ANIMAL MODIFICATION REQUEST INSTRUCTIONS**

- A. GENERAL INFORMATION:**
1. Enter the legal name.
  2. Enter the common name of the facility or operation, if different than the legal name.
  3. Enter the facility's physical address (physical location), including city, state, zip code and telephone number.
- B. CIRCLE THE APPROPRIATE LIVESTOCK TYPE OF YOUR OPERATION.**
- C. Self-explanatory  
 D. Self-explanatory  
 E. Describe your proposed animal increase by herd composition or class  
 F. Self-explanatory  
 G. Signature

**CAFO Designation by Size Threshold (used for items D and F)**

| Animal sector  | Confined  |   | Concentrated  |  |   |                           |
|--|---|---|---|--|---|---------------------------|
|  | Confines more than one animal for more than 4 months on prepared surface                |   | Stabled or confined and fed or maintained for total of 45 days or more in any 12-month period<br>Crops, vegetation, forage growth, or post-harvest residues not sustained in normal growing season in lot or facility |  |   |                           |
|  | <i>Small Confined</i><br>Waste water control facility or disposal system for wet wastes | <i>Medium Confined</i><br>Waste water control facility or disposal system for wet or dry wastes | <i>Small Concentrated</i><br>Significant contributor of pollutants to waters of the U.S.<br>Designated by director [40CFR §122.23(b)(9)]  | <i>Medium Concentrated</i><br>Discharging pollutants to waters of the U.S.<br>[40 CFR §122.23(b)(6)] | <i>Large Concentrated</i><br>[40 CFR §122.23(b)(4)] |                           |
|  | Small Confined  | Medium Confined   | Small Concentrated  | Medium Concentrated  | Large Concentrated Tier 1                           | Large Concentrated Tier 2 |
| Mature dairy cows <sup>1</sup>   | <200  | 200-699   | <200  | 200-699  | 700 to 2,499  | ≥2,500                    |
| Veal calves  | <300  | 300-999   | <300  | 300-999  | 1,000-3,499   | ≥3,500                    |
| Cattle <sup>2</sup>  | <300  | 300-999   | <300  | 300-999  | 1,000-3,499   | ≥3,500                    |
| Swine > 55 lbs   | <750  | 750-2,499   | <750  | 750-2,499  | 2,500-7,999   | ≥8,000                    |
| Swine < 55 lbs   | <3,000  | 3,000-9,999   | <3,000  | 3,000-9,999  | 10,000-29,999                                       | ≥30,000                   |
| Horses   | <150  | 150-499   | <150  | 150-499  | 500-1,499   | ≥1,500                    |
| Sheep or lambs   | <3,000  | 3,000-9,999   | <3,000  | 3,000-9,999  | 10,000-39,999                                       | ≥40,000                   |
| Turkeys  | <16,500   | 16,500-54,999   | <16,500   | 16,500-54,999  | 55,000-199,999                                      | ≥200,000                  |
| Chickens, including laying hens or broilers w/wet waste system manure handling system) | <9,000  | 9,000-29,999  | <9,000  | 9,000-29,999   | 30,000-124,999                                      | ≥125,000                  |
| Laying hens w/dry waste system   | NA  | 25,000-81,999   | <25,000   | 25,000-81,999  | 82,000-299,999                                      | ≥300,000                  |
| Broiler chickens w/dry waste system  | NA  | 37,500-124,999  | <37,500   | 37,500-124,999   | 125,000-349,999                                     | ≥350,000                  |
| Ducks w/other than wet waste system  | <10,000   | 10,000-29,999   | <10,000   | 10,000-29,999  | 30,000-124,999                                      | ≥125,000                  |
| Ducks w/wet waste system   | <1,500  | 1,500-4,999   | <1,500  | 1,500-4,999  | 5,000-19,999  | ≥20,000                   |
| Other animal type  | As determined by ODA. <sup>3</sup>  |   | Designated by director.   | NA   | NA  | NA                        |

1 Whether milked or dry.

2 Other than mature dairy cows or veal calves; cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs.

3 To determine the number of animals that require permit coverage, ODA will compare the operation to the most similar animal type in the table.

