Redwood County Environmental Office - PO Box 130, Redwood Falls, MN 56283. Phone: (507) 637-4023

Redwood County
www.co.redwood.mn.us

Animal Confinement Feedlot Conditional Use Permit Application

Permit #. 1-18 Date: 4-20-18

Proposed Location of Feedlot Operation:

Address: [ ] Saratoga Ave (House # / Street Name) City: Morton State: MN Zip: 56270

Parcel #: 65-026-3020 Township: Sherman Section: 26 Twp #: 112 Range: 34

Information about the Operation:

General description of feedlot operation (including type and number of animal units, barns, and manure storage plan):

Proposal is to construct a 122' x 200' total confinement swine barn with under barn, poured in place concrete LMSA for 3300 head of swine 55 - 300 pounds. Total animal units will be 990.

Legal Description of Proposed Feedlot Location:

N 1/2 of the SW 1/4, Section 26, Sherman Township, Redwood Co.

Information about the Land Owner:

First Name: Charles Last Name: Neitzel Phone: 507-829-5478

Address: 41687 300th St City: Morton State: MN Zip: 56270

If the applicant is not the owner of the land, please specify the type of agreement the applicant has with the owner of the land at the proposed site:

Site / Plan Information:

Zoning District: Ag

Soil Type 1: Wadena Loam

Soil Type 2: Normania Loam

Water source for the site: private well If other, please explain:

Drainage System: field tile If other, please explain:

Estimated water use:

Animal 1

Animal Type: swine finishing pigs

1.1 *gallons/day/animal* X 3300 *number of animals on site* X 350 *number of days present*

= 1,270,500 *gallons/yr/site*

Animal 2

Animal Type:

[ ] *gallons/day/animal* X [ ] *number of animals on site* X [ ] *number of days present*

= [ ] *gallons/yr/site*

Animal 3

Animal Type:

[ ] *gallons/day/animal* X [ ] *number of animals on site* X [ ] *number of days present*

= [ ] *gallons/yr/site*

Total Gallons: 1,270,500 0

Proposed Building(s) Information: (Please enter dimensions in feet)

Building 1:	Width: 122'	Length: 200'	Height: 18'	Sidewall Height: 9'	Sidewall Thickness: 8"
Building 2:	Width:	Length:	Height:	Sidewall Height:	Sidewall Thickness:
Building 3:	Width:	Length:	Height:	Sidewall Height:	Sidewall Thickness:
Building 4:	Width:	Length:	Height:	Sidewall Height:	Sidewall Thickness:

Each building will have a minimum setback from every road right-of-way of: 1340 feet

Estimated date for beginning construction: May 2018 Estimated completion date: August 2018

General Contractor:

Name: Redwood Builders City: Redwood Falls State: MN

Feedlot Operator:

Complete this section only if the feedlot operator will be different from the "applicant". If the operator is not a natural person(s), you must also provide documentation of the operator's legal identity.

First Name: Neitzel Last Name: Pork Project Phone: 507-829-5478

Address: 41687 300th St City: Morton State: MN Zip: 56270

Applicant Information:

Note: If the applicant is not one natural person, requested information and signature(s) must be provided for each partner/associate/co-applicant and must include documentation of each co-applicant's legal identity and the legal relationship between them. Each partner/associate/co-applicant must sign or affirm the application before it will be accepted for consideration.

First Name: Charles Last Name: Neitzel

Business: Neitzel Pork Project

Address: 41687 300th Ave City: Morton State: MN Zip: 56270

Home Phone: Cell Phone: 507-829-5478

List any additional applicants:

I affirm that the forgoing information is true and accurate. I understand that if any portion of this information is false or materially misleading, any conditional use permit issued in reliance upon this information is voidable at the election of Redwood County.

Applicant(s) Signature(s): [signature] Date: 3-26-18

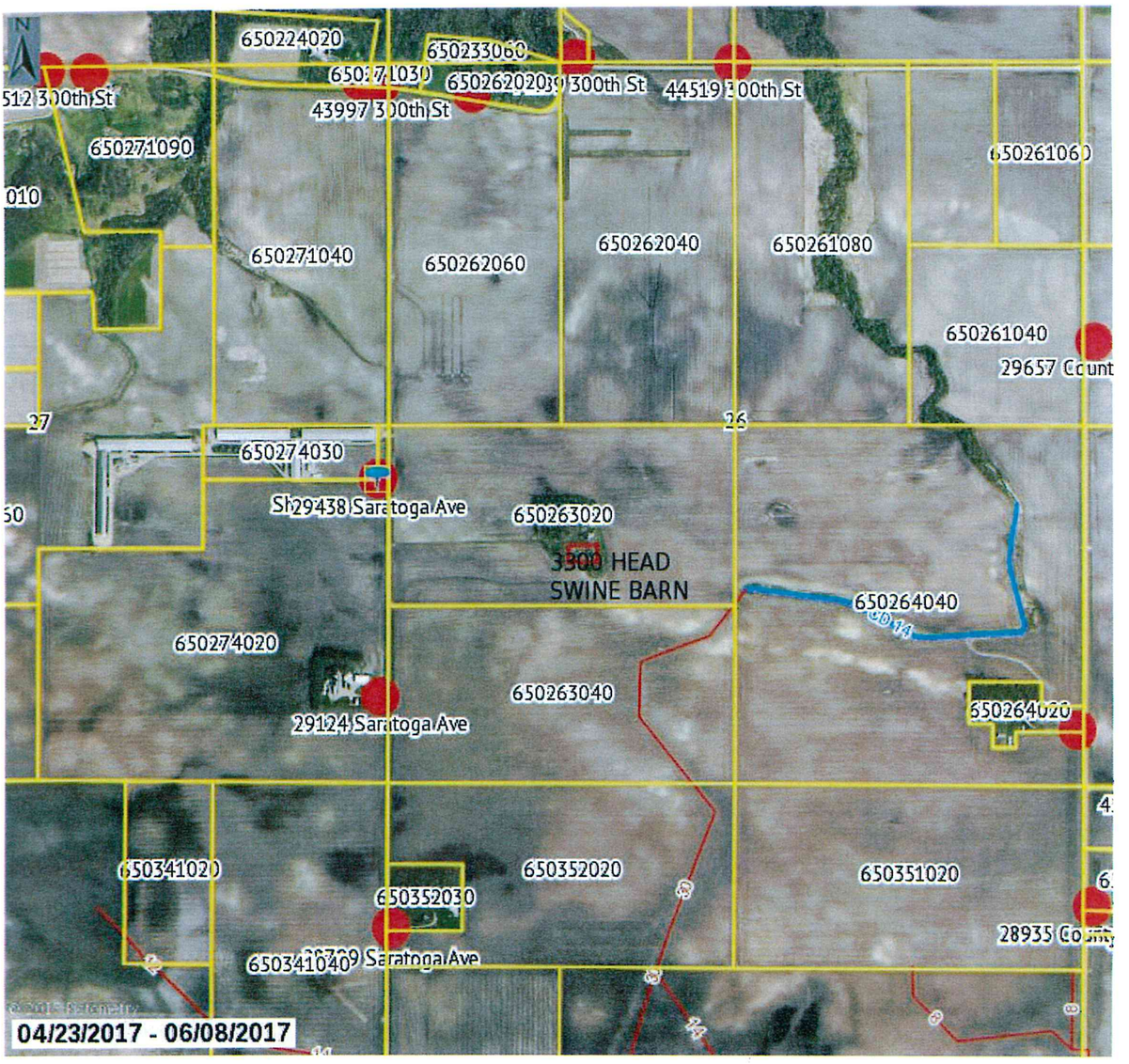
Office Use Only * The section below is to be filled out by the Environmental Office Staff

CUP permit fee: $700 Reciept #: 486911

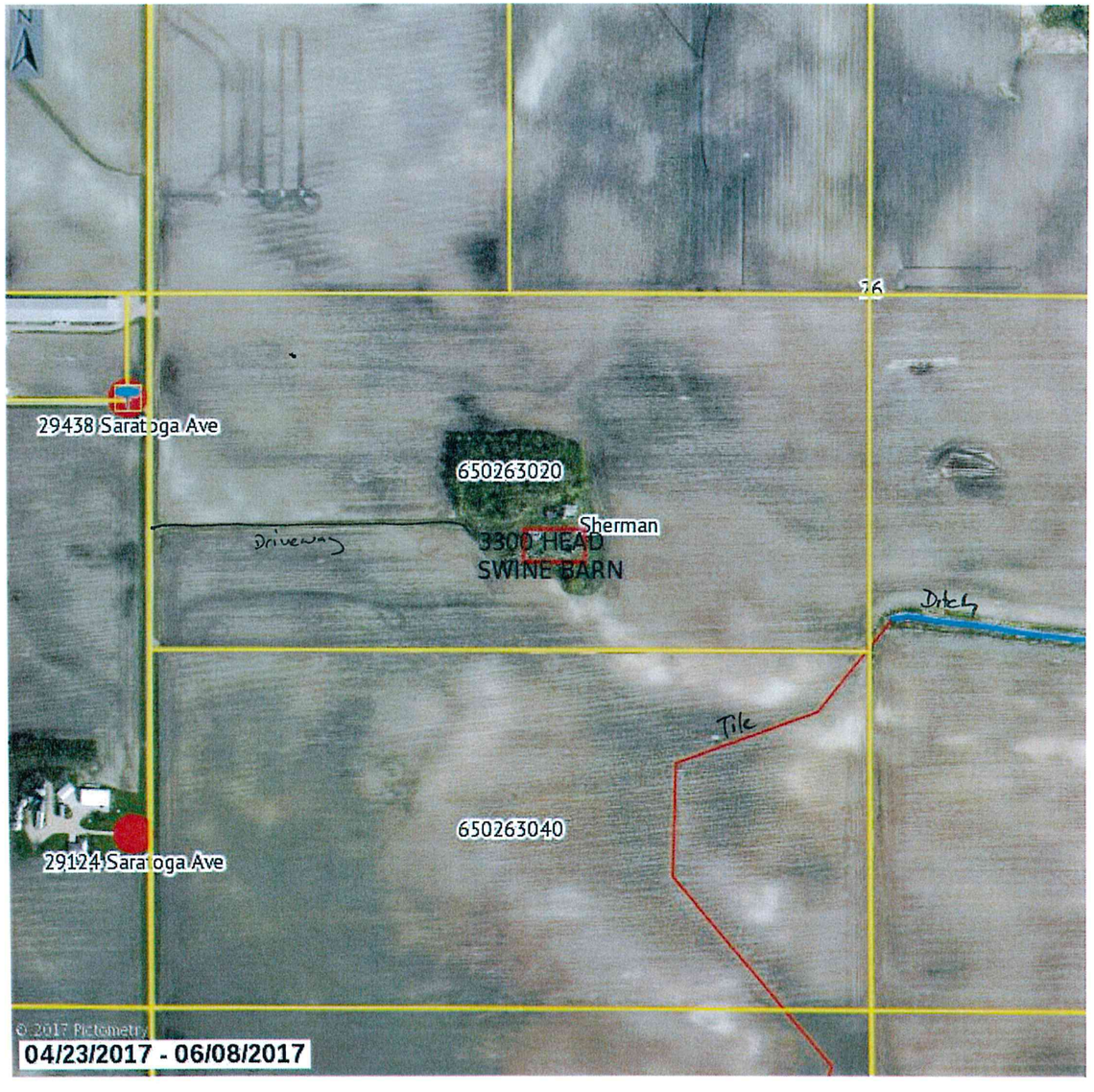
Completed Application Acceptance Date: 4-20-18 Date Approved:

Commission Action:		County Board Action:	
Approved:	Date:	Approved:	Date:
Disapproved:	Date:	Disapproved:	Date:

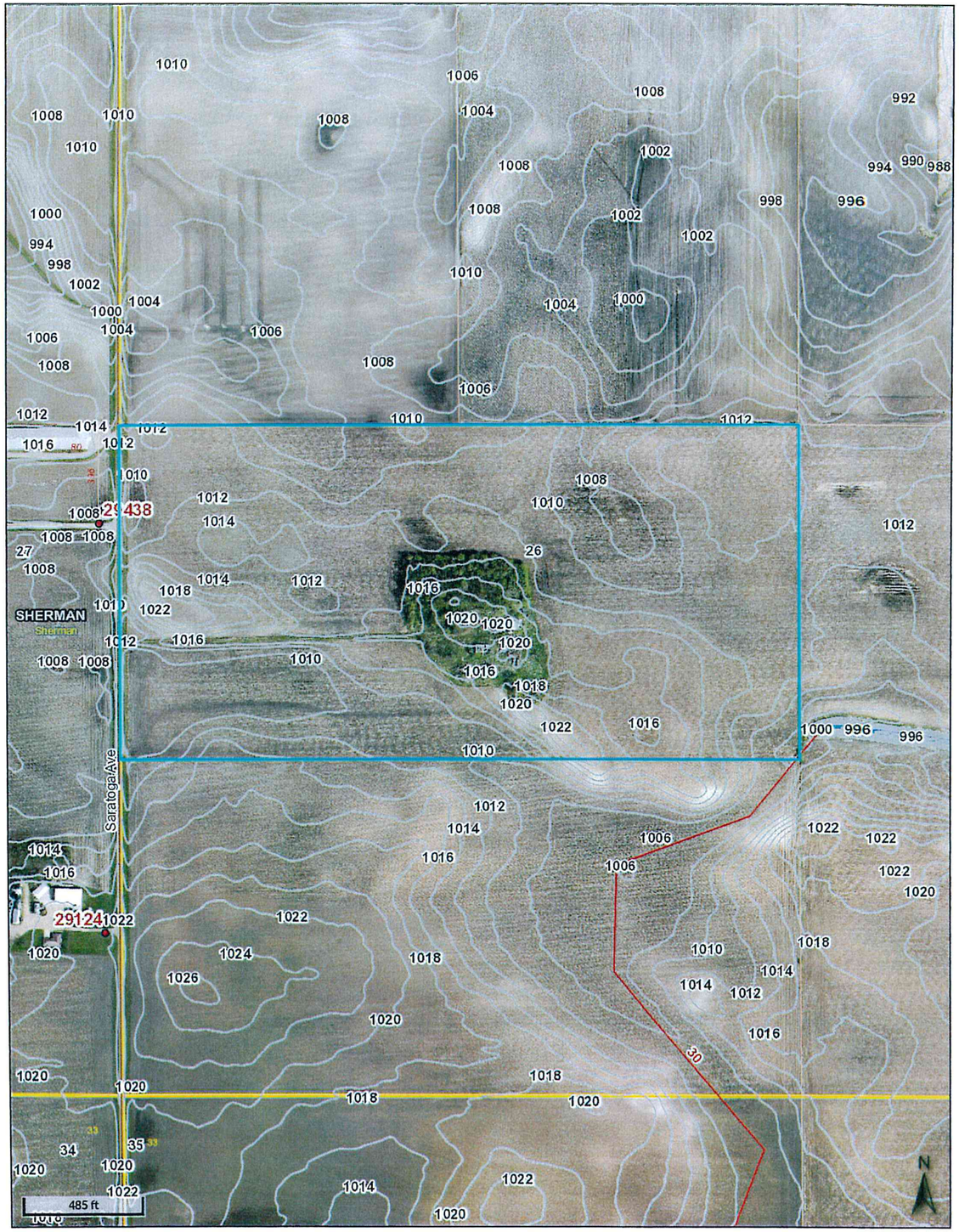
NEITZEL AREA MAP



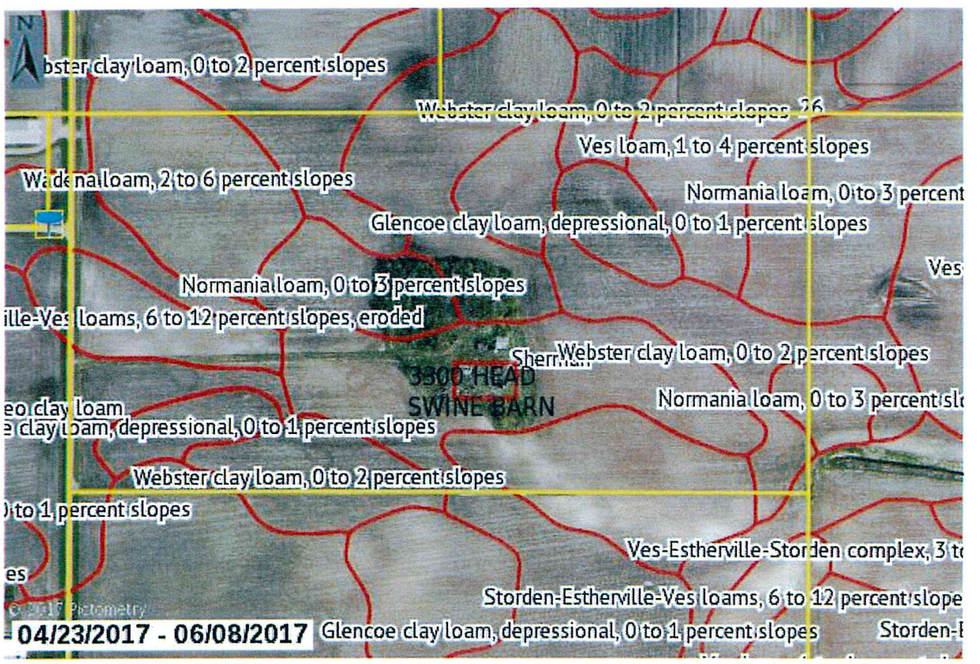
NEITZEL FEEDLOT



WEITZEL ELEVATION MAP



NETZEL SOIL MAP



Conditions for Permit No. 1-18 (Charles "Doug" Neitzel)

1. The permit holder shall comply with all applicable laws, rules, and regulations, including but not limited to Redwood County Ordinance, as hereafter amended from time to time. A copy of all required local, state, and federal permits and/or licenses shall be provided to the Redwood County Environmental Office upon request.

2. The permit holder shall allow the Redwood County Environmental Office to inspect the site for all purposes permitted by law whenever deemed necessary by the Redwood County Environmental Office.

3. The permit holder shall take appropriate and reasonable measures to assure that all surface water runoff satisfies all applicable local, state, and federal discharge standards.

4. The permit holder shall not allow the conditional use to be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted. The permit holder shall not allow the conditional use to impede the normal and orderly development and improvement of surrounding vacant property for uses predominant to the area. Adequate measures shall be taken to prevent or control offensive odor, fumes, dust, and vibration, so that none of the foregoing will constitute a nuisance now or in the future.

5. Adequate utilities, access roads, drainage, and other necessary facilities will be provided and continue to be provided by the permit holder now and in the future.

6. The manner in which manure is stored and disposed of shall comply with all applicable local, state, and federal laws, rules, and regulations. If manure is applied to land, it shall be applied to land at agronomic rates. When applied to land, manure will be injected or incorporated within 24 hours. The permit holder shall retain a record of all locations where manure is applied to land. Such records shall be maintained for a period of no less than five (5) years, measured from the date the manure is applied to land. Such records shall be submitted to the Redwood County Environmental Office upon request.

7. The permit holder shall report any changes in spread agreements or spread areas to the Redwood County Environmental Office within thirty (30) days subsequent to any such change.

8. The County Board of Commissioners may at any time impose additional conditions as necessary and appropriate including but not limited to: the planting of trees and shrubs for use as a windbreak for the feedlot operation; the furnishing and placing in a dedicated account, to be administered by the County, an annual payment for reclamation purposes based upon the number of Animal Units involved; and restrictions on the days on which a manure storage structure may be disturbed or manure may be transferred, applied, incorporated, or injected.

9. Dead livestock shall be stored and rendered in such a manner as to not create a nuisance. Disposal of dead livestock by burial is strictly prohibited. Dead hogs may be composted according to the Redwood County Swine Composting Protocol.

10. The permit holder shall construct the manure storage structure/concrete pit(s) to meet or exceed the minimum requirements set forth in the plans and specifications prepared by Nathan A. Pesta and signed by him on April 19, 2018, attached to the permit holder's application.

11. A perimeter tile line shall be installed around the outside of the base of the pit(s) walls and an inspection manhole shall be provided where the perimeter tile branches out into the local drain tile system.

12. The permit holder shall install a warning sign at all entrances to the concrete pits. These signs shall warn the reader of the dangers of entering the pits.

13. The Redwood County Environmental Office shall be contacted for two on-site inspections during the construction of the pits: once when the floor is ready to be poured, and once when the walls are ready to be poured.

14. No construction on the pit shall be done between October 15th and April 15th, except by approval of the Zoning Administrator.

15. The Redwood County Planning Commission shall review the conditional use permit and shall be authorized to take any and all necessary action(s), including but not limited to revoking the conditional use permit and/or requiring the permit holder to reapply for a conditional use permit, if: 1) The Redwood County Environmental Office acquires information previously unavailable that indicates the terms and conditions of the permit do not accurately represent the actual circumstances of the permitted facility or the conditional use; 2) It is discovered subsequent to the issuance of the permit the permit holder failed to disclose all facts relevant to the issuance of the permit or submitted false or misleading information to the Redwood County Environmental Office, the Redwood County Planning Commission, or the Redwood County Board of Commissioners; 3) The Redwood County Environmental Office determines the permitted facility or conditional use endangers human health or the environment; and/or (4) The permit holder violates any of the herein described conditions, the Redwood County Ordinances, State statutes, or Federal laws.

Redwood County Swine Composting Protocol:

I. Purpose and scope: To allow hog producers to compost their dead livestock (carcasses) in lieu of rendering. These guidelines are based upon Minnesota Rules 1719 (Board of Animal Health), which are incorporated herein by reference. In any instance where these guidelines diverge from Minnesota Rules 1719, the stricter rule shall control.

II. Site selection – must take into account:
   a. Prevailing winds – reasonable attempts must be made to avoid sites where the prevailing winds will carry odors onto neighboring land uses (excepting agricultural fields and feedlots).
   b. Public view – the compost facility must be shielded from public view, so that the composting material is not visible from public roadways or neighboring land uses.

III. Facility – requirements for construction:
   a. Overall design: Compost facility must consist of at least three (3) compost bays each with 20 cubic feet of area for every one (1) pound daily normal mortality. Each bay must have poured concrete walls on three sides and be gated on the front so that wild and domestic animals cannot access the compost. The entire structure must sit on a concrete pad and have a roof to deflect rainwater from the compost.
   b. Floor: Floor must be constructed of 5" thick impervious concrete. Floor must be sloped toward the rear of the facility to keep liquid from running out of the composting area onto the ground.
   c. Walls: Walls must be constructed of 6" thick impervious concrete. Cement walls must be no more than 5' high. If lower than 5', the walls must include fencing up to 5' to prevent wild or domestic animals from accessing the compost. Cement walls must be high enough to contain the compost material.
   d. Roof: Roof must be supported by treated wood or metal supports and rafters. Roof must completely cover the composting bays so as to deflect rainwater.

IV. Process – the following practices must be observed:
   a. Dead pigs must be added within 24 hours of death.
   b. Each composting bay shall begin with a 1' layer of litter. Thereafter, carcasses shall be stacked up to 1' and covered by 1' of litter. Add additional layers as needed.
   c. Litter can be finely chopped vegetable matter (such as corn stalks), sawdust, or finished compost. The carbon to nitrogen ratio must in the range of 15:1 to 35:1.
   d. Carcasses must be kept at least 6" from the edge of the compost bay.
   e. The 3 compost bays allow for a three stage composting process. When the first bay is full, start a new pile in the second bay. When the second bay is full, start a new pile in the third bay. When the third bay is full, empty the first bay and start over. Turn each bay every 7 to 10 days. Add water as necessary to keep up the heat.
   f. Temperature:
      i. Must be taken and recorded in each bay daily.
      ii. Must be at least 130 degrees Fahrenheit.
      iii. Temperature records must be kept on hand for 2 years.

V. Protocol:
   a. Must keep a written composting protocol describing the composting steps on-site.
   b. Must instruct all employees on-site about the protocol.

VI. Pests, such as flies and rodents, must be controlled

VII. Transportation of Carcasses on public roads:
   a. An owner who transports the owner's own carcasses does not need a permit to do so.
   b. Carcasses transported on public roads must be in leak-proof, covered containers.

VIII. Finished compost:
   a. Must contain no visible soft tissue pieces.
   b. May be handled and stored according to PCA and Dept. of Agriculture rules.

REDWOOD COUNTY ENVIRONMENTAL OFFICE

Planning & Zoning ● Parks & Trails ● GIS
Aquatic Invasive Species ● Septic Inspector
Drainage Inspector ● Agricultural Inspector

PO BOX 130
REDWOOD FALLS
MINNESOTA 56283
PH: 507-637-4023

REDWOOD COUNTY PLANNING COMMISSION
Charles "Doug" Neitzel
Conditional Use Permit Application #1-18
May 21st, 2018

FINDINGS OF FACT

ORDINANCE CRITERIA – The Planning Commission may recommend the granting of a Conditional Use Permit in any district provided the proposed use is listed as a conditional use for the district and upon a showing that the standards and criteria stated in this Ordinance will be satisfied and that the use is in harmony with the general purposes and intent of this Ordinance and the Comprehensive Plan.

In determining whether the proposed use is in harmony with the general purposes and intent of the Ordinance and the Comprehensive Plan, the Planning Commission shall consider and make findings on the following questions:

1) Will the conditional use be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, or substantially diminish and impair property values within the immediate vicinity?

Yes _____ No _____

Why?:_____
_____
_____
_____

2) Will the establishment of the conditional use impede on the normal and orderly development and improvement of surrounding vacant property for uses predominant to the area?

Yes _____ No _____

Why?:_____
_____
_____
_____

3) Are there, or will there be provided, adequate utilities, access roads, drainage, and other necessary facilities?

Yes _____ No _____

Why?:_____
_____
_____
_____

4) Have adequate measures been taken, or will adequate measures be taken, to provide sufficient off-street parking and loading space to serve the proposed use of the property?

Yes _____ No _____

Why?:_____
_____
_____
_____

5) Have adequate measures been taken, or will adequate measures be taken, to prevent or control offensive odor, fumes, dust, noise and vibration, so that none of these will constitute a nuisance, and to control lighted signs and other lights in such a manner that no disturbance to neighboring properties will result?

Yes _____ No _____

Why?:_____
_____
_____
_____

6) Will the proposed use have an impact (adverse) on the health, safety, and general welfare of the residents in the surrounding neighborhood?

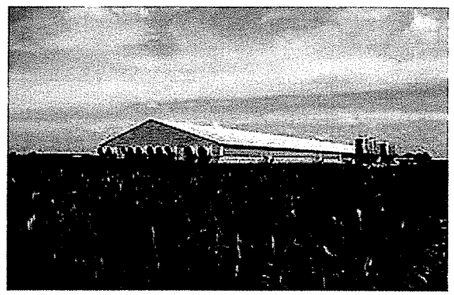
Yes _____ No _____

Why?:_____
_____
_____
_____

NAME: _____ DATE: _____

Construction Short Form Permit Application for

Neitzel Pork Project – Site 2
Saratoga Ave
Morton, MN 56270



Prepared by:
Anez Consulting Inc

1700 Technology Dr. NE, Suite 130, Willmar, MN 56201 320.235.1970 Fax 320.235-1986
www.AnezConsulting.com

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Animal feedlot or manure storage area permit application

CSF and Interim Permit Program

Doc Type: Permit Application

Applicability: Use this form to obtain, modify, or extend the term of a construction short form (CSF) or interim permit.
Keep a copy of this application form and all submittals for your records.

After completing and signing this form, submit it and any required enclosures as instructed below:

For facilities located in a delegated county, send the signed form and any enclosures to the County Feedlot Officer (CFO).
All other facilities must submit this form and any enclosures to the Minnesota Pollution Control Agency (MPCA) as follows:

- Scan and email the signed form and any enclosures to FeedlotSubmittal.pca@state.mn.us.
- If submission via email is not possible, you can mail the signed form and any enclosures to:

  Attn: Feedlot Master File Staff
  Minnesota Pollution Control Agency
  18 Wood Lake Drive SE
  Rochester, MN 55904

I. Permit type and reason for application

Feedlot Registration Number: _____

Please indicate which type of feedlot permit you are applying for *(choose only one):*

☒ Construction Short Form ☐ Interim (correcting a pollution hazard)

Please indicate the reason for the permit application *(choose only one):*

☒ New Permit
(No existing CSF or interim permit)
☐ Permit Modification
(Changes to sites with an existing CSF or interim permit)
☐ Permit Extension - Current CSF or Interim Permit number: _____
(Work not completed prior to permit expiration)

Indicate below the reason(s) the work may not be completed prior to permit expiration

Estimated amount of time required to complete the work: _____ ☐ days ☐ months
Note: The length of the extension is limited to 24 months for CSF permits and 90 days for interim permits

A permit extension request only requires completion of pages 1 and 6 of this application form (the remaining pages can be left blank).

Note: When the notice to neighbors and property owners is applicable (page 6) the content of the notice must include the date the original permit was issued and the new proposed completion date as well as the normally required information.

II. Owner's name(s) and address(es) - (All partners of a Limited Liability Partnership (LLP) must be listed.)

Primary owner – Will be used as the mailing address

Name: Neitzel Pork Project
Address: 41687 300th St
City: Morton State: MN
Phone: _____ Zip: 56270
Email: _____

Additional owner – attach additional sheets as necessary

Name: _____
Address: _____
City: _____ State: _____
Phone: _____ Zip: _____
Email: _____

Note: *The term owner includes all persons having possession, control, or title to an animal feedlot or manure storage area (including lessees or renters). All owners must be listed. Attach to this application the names, addresses, and phone numbers of all additional owners.*

III. Facility name and site address

Site Name: Neitzel Pork Project - Site 2
☐ Facility is a MN Ag Water Quality Certified Farm (MAWQCP)
Complete if facility address is different than the primary owner address:
Street: Sartatoga Ave
City: Morton State: MN
Phone: _____ Zip: 56270

Contact person for day-to-day activities

Name: Doug Neitzel
Street: 41687 300th St
City: Morton State: MN
Phone: _____ Zip: 56270
Cell phone: 507-829-5478
Email: _____
(General letters/notices may be sent by email where one is indicated.)

IV. Facility location

County: Redwood Township name: Sherman

Township (26 – 71 or 101 – 168)	Range (1 – 51)	Section (1 – 36)	¼ Section (160 acre) (NW, NE, SW, SE)	¼ of ¼ Section (40 acre) (NW, NE, SW, SE)
T 112 N	R 34 W	26	SW	N1/2

V. Sensitive features

1. Is any part of the facility within 1,000 feet of any type of surface waters or tile intake? ☒ Yes ☐ No

   If Yes, select all types below

   ☐ Lake ☐ River ☐ Stream (Perennial or Intermittent) ☒ Tile Intake
   ☐ Pond ☐ Creek ☐ Ditch ☐ Wetland ☐ Calcareous Fen ☐ Unknown

2. Is any part of the facility located within 300 feet of a river/stream? ☐ Yes ☒ No
3. Is any part of the facility located within a delineated flood plain *(100 year flood)*? ☐ Yes ☒ No
4. Is any part of the facility located within designated shoreland? ☐ Yes ☒ No
5. Is any part of the facility located within 1,000 feet of a karst feature? ☐ Yes ☒ No
   (sinkholes, caves, disappearing springs, resurgent springs, karst windows, dry valleys, or blind valleys)

   If Yes, complete a. and b. below:

   a. Are there 4 or more sinkholes within 1,000 feet? ☐ Yes ☐ No
   b. Is any part of the facility within 300 feet of a known sinkhole? ☐ Yes ☐ No

6. Is any part of the facility located within 1,000 feet of the following types of wells: ☐ Yes ☒ No

   If Yes, select the applicable well type below:

   ☐ a community water supply well
   ☐ a well serving a public school as defined under Minn. Stat. § 120A.05
   ☐ a well serving a private school excluding home school sites
   ☐ a well serving a licensed child care center where the well is vulnerable (Minn. R. 4720.5550, subp. 2)

VI. Environmental Review (complete when construction or expansion is proposed)

Mandatory environmental review is required when the addition of 1,000 or more animal units (AU) is proposed as part of the construction/expansion at any facility. The threshold when environmental review is mandatory is reduced to 500 AU when any part of the facility is located within a "sensitive area". The facility is within a sensitive area when any of the following apply.

- Any part of the facility is within a delineated floodplain (yes to question 3 above)
- Any part of the facility is within designated shoreland (yes to question 4 above)
- Any part of the facility is within 1,000 feet of a karst feature (yes to question 5 above)
- Any part of the facility is within a vulnerable drinking water supply management area
- Any part of the facility is within a federal, state, or local wild and scenic river district
- Any part of the facility is located within the Minnesota River Project Riverbend area or the Mississippi headwaters area

Additionally mandatory environmental review is required for "Phased actions". Phased actions are defined under Minnesota law (Minn. R. ch. 4410) as two or more projects located in the same geographic area and constructed sequentially within three years of each other by the same proposer. When this is the case, the animal units from all projects are combined to determine if environmental review is required. The following will assist the MPCA to evaluate if your project qualifies as a "phased action".

Do you have ownership interest in another livestock operation that was constructed/expanded within the past three years or are you substantially certain you will be constructing/expanding another livestock operation within the next three years?

☐ Yes ☒ No

If Yes, how far away *(straight-line distance)* is it located from the project proposed in this application? _____ miles

There are also rule provisions to require completion of the environmental review process in the event of a citizen petition or upon the discretion of the MPCA. Please see the MPCA fact sheet entitled "When is Environmental Review Required for Feedlots" (available on the MPCA website at https://www.pca.state.mn.us/quick-links/environmental-review and/or Minn. R. 4410 for further details.

VII. Animal numbers and animal unit (AU) calculation

Complete the table below to identify the **maximum** number of animals housed at that facility. All animal numbers and animal sizes used to complete this table should reflect the animal holding **capacity** of the facility even if the facility does not currently house or propose to house that number of animals. At no time is the number of animals at the facility allowed to exceed the capacity provided below without first obtaining a permit or permit modification.

Current Capacity - List the current head count **capacity** for each animal type in column 3 below. For sites with a permit, this should match the currently permitted number of animals. Next, multiply the AU Factor in column 2 by the number of animals listed in column 3 to get the *Current AU Capacity* for each animal type (column 4). Finally, add together all AU's in column 4 to get a total at the bottom of the chart. *If this application is for a brand-new feedlot site leave columns 3 and 4 blank. (ie. bare piece of ground)*

Final Capacity - List the final head count **capacity** for each animal type in column 5 below. This number should include current animals plus or minus any expansion or reduction in each animal type. This should reflect the maximum AU capacity requested with this permit application. Next, multiply the AU Factor in column 2 by the number of animals listed in column 5 to get the *Final AU Capacity* for each animal type (column 6). Finally, add together all AU's in column 6 to get a total at the bottom of the chart.

1. Animal type	2. Animal unit factor	*Current* facility capacity: 3. Head count	*Current* facility capacity: 4. Animal units = column 2 x column 3	*Final* facility capacity (Current +/- Changes): 5. Head count	*Final* facility capacity (Current +/- Changes): 6. Animal units = column 2 x column 5
A. Dairy cattle					
Mature cow (milked or dry) over 1,000 lbs.	1.4				
Mature cow (milked or dry) under 1,000 lbs.	1.0				
Heifer	0.7				
Calf	0.2				
B. Veal					
Veal	0.2				
C. Beef cattle					
Slaughter steer/heifer, stock cow, or bull	1.0				
Feeder cattle (stocker or backgrounding), heifer	0.7				
Cow and calf pair	1.2				
Calf (weaned)	0.2				
D. Swine					
Over 300 lbs.	0.4				
Between 55 and 300 lbs.	0.3			3300	990
Under 55 lbs.	0.05				
E. Horses					
Horse	1.0				
F. Sheep					
Sheep or Lamb	0.1				
G. Chickens with a *liquid* manure system					
Layer Hens or Broilers	0.033				
H. Chickens with a *dry* manure system					
Broilers over 5 lbs.	0.005				
Broilers under 5 lbs.	0.003				
Layer Hens over 5 lbs.	0.005				
Layer Hens under 5 lbs.	0.003				
I. Turkeys					
Over 5 lbs.	0.018				
Under 5 lbs.	0.005				
J. Ducks					
Duck (with a liquid manure handling system)	0.01				
Duck (with a dry manure handling system)	0.01				
K. Animals not listed in A to J (AU factor in column 2 = average weight of the animal type divided by 1,000 lbs.)					
Animal type:					
Total animal unit capacity Add all numbers in column 4 for Current AU total Add all numbers in column 6 for Final AU total			**Current AU capacity**		**Final AU capacity** 990

VIII. Animal holding areas

Complete the table below for all your animal holding areas.
If you have more than six animal holding areas on your site, continue your list on an additional copy of this page.

Animal holding area ID	***List each animal holding area in a separate column***					
Facility Site Sketch ID (i.e., #1, A, Barn 1)	1					
Status: (check one box only) *Proposed* - not permitted previously *Approved* - permitted but not yet operational *Existing* - current operational component *Modifying* - change to a permitted component	☒Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating
Distance to nearest well (ft.)	>100'					
Pasture Access	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

Type of animal holding areas (indicate dimensions and floor type)	***Write approximate dimensions in feet in the space below*** *(width x length or area with units for irregular shapes)*					
Total confinement barn (slatted floor)	122' x 200'					
Total confinement barn (solid floor)						
Partial confinement barn						
Open lot with runoff controls						
Open lot without runoff controls						
Animal Holding Area Floor Type (check all that apply)	☒Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other

Animal numbers	***Indicate the maximum capacity (number of animals) of each animal holding area*** *The total number of all animals listed should match the final animal numbers listed on page 3.*					
Mature dairy cows (over 1,000 lbs.)						
Mature dairy cows (under 1,000 lbs.)						
Dairy heifers						
Dairy calves						
Veal						
Slaughter steer/heifer, stock cow or bull						
Feeder cattle-stocker/background/heifer						
Cow and calf pair						
Beef calves (weaned)						
Swine over 300 lbs.						
Swine between 55 and 300 lbs.	3300					
Swine under 55 lbs.						
Horses						
Sheep or lamb						
All chickens with liquid manure system						
Broiler chickens over 5 lbs. - dry system						
Broiler chickens under 5 lbs. - dry system						
Laying hens over 5 lbs. - dry system						
Laying hens under 5 lbs. - dry system						
Turkeys - over 5 lbs.						
Turkeys - under 5 lbs.						
Ducks						
Other:						

IX. Manure handling, feed storage, and dead animal areas

Complete the table below for your manure storage, feed/silage storage areas and dead animal disposal areas on your site. If you have more than six manure storage, feed/silage storage, and dead animal management areas on your site, continue your list on an additional copy of this page.

Manure, feed, or dead animal areas	***List each manure handling, feed storage, and dead animal area in a separate column***					
Facility Site Sketch ID (i.e., #1, A, Basin 1)	1	2	3			
Status: (check one box only) *Proposed* - not permitted previously *Approved* - permitted but not yet operational *Existing* - current operational component *Modifying* - change to a permitted component	☒Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☒Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☒Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating	☐Proposed ☐Approved ☐Existing ☐Modifying ☐Eliminating
Distance to nearest well (ft.)						
Type of liquid manure or process wastewater storage/treatment areas (indicate dimensions)	***Write approximate top dimensions in feet in the space below*** *(width x length x depth or volume with units for irregular shapes)*					
Earthen or GCL lined basin						
Below barn concrete tank	122'x200'x8'					
In-ground concrete tank/basin (outdoor)						
Above-ground concrete tank						
Synthetic lined (HDPE, EPDM, etc.) basin						
Steel tank (i.e., slurry-store)						
Composite lined (2 liner types) basin/tank						
Vegetated Infiltration Area						
Other (describe):						
Type of solid manure, feed storage, and dead animal areas (indicate dimensions and floor type)	***Write approximate dimensions in feet in the space below*** *(width x length or area with units for irregular shapes)*					
Permanent Stockpile						
Dead Animal Management Area			8 'x 8'			
Covered Feed Storage Area		Steel bins				
Uncovered Feed Storage Area						
Sweet Corn Silage Storage Storage Pad Area						
Tonnage on site at any one time						
Other (describe):						
Stockpile, Feed Storage, or Mortality Area Floor/Liner Type (check all that apply)	☐Concrete ☐Asphalt ☐Soil ☐Other	☒Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☒Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other	☐Concrete ☐Asphalt ☐Soil ☐Other

X. Changes to groundwater monitoring plan (complete only if applicable)

If groundwater monitoring is required at the facility, this application can request changes to the MPCA-approved groundwater monitoring plan. In order to request changes to the groundwater monitoring plan, please indicate the type of change requested.

☐ Elimination of monitoring ☐ Change to sampling frequency

☐ Change to sample testing protocol ☐ Other

When a change is requested, please include with this permit application documentation from a qualified professional that provides a technical analysis and justification for the requested changes.

XI. Non-delegated county public meeting minutes (complete only if applicable)

A county which has not accepted delegation of the feedlot program must hold a public meeting prior to issuance of a feedlot permit by the MPCA for an animal feedlot with a capacity of 300 or more animal units.

Date meeting has occurred or is scheduled to occur: TBD

Verification of public meeting.

A copy of the meeting minutes must be provided to the MPCA for verification of completion prior to permit issuance.

XII. 500 or more AU: Notice to residents and property owners within 5,000 feet

When required. A notice is required in ***either*** of the following situations:

- ***Construction of a new*** feedlot, or manure storage area, which will have a capacity of 500 AU or more.
- ***Expansion of an existing*** feedlot, or manure storage area, which currently has, or will have upon completion of the expansion, a capacity of 500 AU or more.

Notice methods. The owner shall not less than 20 business days before the anticipated issuance date of the permit, provide notice to each resident and each owner of real property within 5,000 feet of the perimeter of the proposed facility. This notice *must* include, at a minimum, the information provided in Minn. R. 7020.2000, subp.4.

An example notice can be found in the factsheet *Permit Notification Requirements – Feedlots with more than 500 Animal Units* available on the MPCA website https://www.pca.state.mn.us/sites/default/files/wq-f3-09.pdf.

Verification of notice. The MPCA must verify that this notice has been completed prior to permit issuance. Documentation that this notice has been completed can be provided with the permit application (preferred) or submitted at a later date, prior to permit issuance.

When the notice has been completed prior to this application

Please include with this application one of the following to provide verification that the required notice has been completed:

- An affidavit of publication from a newspaper of general circulation used to provide this notification.
- A list of all parties, with their location, that were notified by certified mail and copies of all signed mail return receipts.
- A list of all parties, with their location, that were personally visited with a date and signature from each party and certification signed by a notary public indicating in detail what was discussed.

When the notice has not been completed prior to this application

Please include with this permit application both of the following:

- A copy of the content of the notification
- Date notification is scheduled to occur: TBD

Note: The permit cannot be issued prior to receiving verification that the notice has actually taken place. This verification must be one of the three items listed above.

XIII. Certifications and signature

Notification to local officials

The Applicant certifies that, if the application includes construction of a new facility or expansion of an existing facility, all local zoning authorities have been notified in accordance with Minn. R. 7020.2000 subp. 5.

Construction Stormwater (CSW) Requirements

The Applicant certifies that, if construction will disturb 5 or more acres, they have made a separate application for a CSW permit. For construction activities that disturb at least 1 acre but less than 5 acres, the Applicant certifies to comply with the requirements of the current CSW NPDES general permit (Minn. R. 7090.2020 provides permit coverage even though no application has been made).

Need for NPDES or SDS permit

If the MPCA determines that a NPDES or SDS permit is required, the Applicant certifies that this application will serve as an application for a NPDES or SDS permit, as appropriate. The Applicant agrees to submit additional information, as requested by the MPCA, in order to complete the NPDES or SDS permit application process including payment of the applicable permit application fee.

Applicant Signature

I hereby certify that the design, construction, and operation of the facility will be in accordance with this application and plans, specifications, reports, and related communications approved by the MPCA, and in accordance with applicable permit conditions or regulations/standards of the MPCA. I also certify under penalty of law that this document and all attachments were prepared under my direction or supervision and 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 fine and imprisonment for knowing violations.

The person that signs this application must be one of the following:

A. For a corporation, a principal executive officer of at least the level of vice president
B. For a partnership, a general partner
C. For a sole proprietorship, the proprietor

Print name: Charles Douglas Neitzel Print official title: Owner

Office phone: Cell phone: 507-829-5478

Signature: Date: 3-22-18

To sign up for electronic communications including the MPCA feedlot newsletters, please go to the MPCA website at https://public.govdelivery.com/accounts/MNPCA/subscriber/new.

Required enclosures (Permit applications submitted without all required enclosures are incomplete.)

All forms are available on the *CSF & Interim permits* page of the MPCA feedlot program website at:
https://www.pca.state.mn.us/feedlots

☐ A. A site sketch/aerial photograph indicating the location of the existing and proposed facility components.

☐ B. A Manure/Nutrient Management Plan (MMP) – The following are optional forms to assist with MMP development:

When **all** manure is transferred to another entity for utilization, complete a MMP using the form:

MMP requirements when ownership of manure is transferred.

When **any** portion of manure is applied to land owned, rented, or leased by the applicant(s), or applied to other land where nutrient application decisions are made by the applicant(s), complete a MMP using the spreadsheet form:

MPCA Manure Management Planner.

Notes: The MMP requirements when ownership of manure is transferred form is incorporated into the spreadsheet to account for instances when only some of the manure is transferred.

A hand-entry version of the MPCA Manure Management Planner.

☐ C. Plans and Specifications for construction, modification, or expansion of any liquid manure storage area.

☐ D. **Conditional** - Environmental Assessment Worksheet (EAW) Fee

When the project requires environmental review **and** is located in a county that has not accepted delegation of the county feedlot program, there is a fee of $4,650 for processing of an Environmental Assessment Worksheet (EAW) that must be included with this permit application. (**Check payable to:** Minnesota Pollution Control Agency)

☐ E. **Optional** – Verification of the notifications required in part XII of this application. If not submitted with the application, the MPCA must receive the verification prior to permit issuance. It is strongly recommended that the applicable verifications be included with the permit application.

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Emergency Response Plan

NPDES and SDS Permit Program
Feedlot Program

Doc Type: Permit Application

Applicability: This *Emergency Response Plan* is to be used in case of an emergency spill, leak, or failure at the production facility or land application area and to assist with response to catastrophic animal mortality events (barn fires, tornadoes, etc.). You must submit this form as part of an application for National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) feedlot permit coverage.

Facility name: Neitzel Pork Project - Site 2 Feedlot registration no.: _____

Owner/Operator name: Doug Neitzel Feedlot permit no.: _____

List of critical phone numbers and contacts

	Contact person (or Company)	Phone number	
Emergency contacts			
• Fire/Ambulance	----------	**911**	
• County Sheriff	Redwood County	507-637-4036	
Agency contacts			
• **Minnesota Duty Officer**	----------	**1-800-422-0798**	**Provide the Minnesota Duty Officer:** • Your contact information • Incident location, date, and time • For spills - spill type - spill amount - surface water or field tile impacted • Progress made in response to the spill or catastrophic mortality event
• Minnesota Pollution Control Agency (MPCA) Field Office	Marshall	507-537-7146	
• County Feedlot Officer (CFO)	MPCA	507-537-7146	
• Board of Animal Health Contact	Mike Fier	651-270-7230	
Other contacts			
• Insurance company			
• Gopher State One Call	----------	**1-800-252-1166**	
• Anez Consulting, Inc	Jeff	320-235-1970	
Local vendors for spill and/or catastrophic mortality response assistance			
• Manure pumper	Circle R Waste Hauling	507-427-2749	
• Manure loading equipment	Circle R Waste Hauling	507-427-2749	
• Earth moving equipment	TNT Construction	507-249-3182	
• Tiling equipment	TNT Construction	507-249-3182	
• Containment/Absorption materials (hay, straw, cornstalks, sawdust)	TNT Construction	507-249-3182	
•			

Manure Spill Emergency Response Procedures*

1. Immediately stop the source of a liquid manure leak or spill:
   - Turn off pumps or valves
   - Clamp hoses or park tractor on hoses
2. Contain spilled manure:
   - Use skid loader or tractor with blade to make berms
   - Install bale checks and block downstream culverts
   - Insert sleeves around tile intakes (or plug/cap)
   - Use tillage equipment to work ground ahead of spill
   - Use absorptive materials
3. Make necessary phone calls as listed in the chart above:
   - Notify Minnesota Duty Officer at 1-800-422-0798
   - Notify sheriff's office if spilled on public roads or right-of-ways
4. Cleanup:
   - Clean up spill immediately from road and roadside
   - Clean up all material, including the contaminated soil, as soon as possible by scraping, or by other means
   - Land apply manure at agronomic rates or place manure back in the manure storage area/ solid manure stockpile
   - Follow recommendations of MPCA staff and/or CFO
   - Restore site to its original conditions
   - If rain is expected prior to completion of cleanup; actions need to be taken to contain manure contaminated runoff from solid manure spills
5. Document your actions:
   - Keep records of all actions related to the spill and follow up activities

**A detailed site map should be displayed on site to assist employees identify sensitive receptors near the facility (surface water, wells, tile intakes, etc.).*

Catastrophic Animal Mortality Response

1. Make necessary phone calls as listed in the chart above:
   - Notify Minnesota Duty Officer at 1-800-422-0798
   - Notify Minnesota Board of Animal Health
   - Notify MPCA and CFO
2. Cleanup
   - Dispose of mortalities according to recommendations of MN Board of Animal Health Representative
   - Locate disposal area for mortalities to prevent impacts to surface and/or groundwater (consult MPCA/CFO)
3. Document your actions
   - Keep records of all actions related to the animal mortality disposal activities

If burial of animal mortalities is necessary, the burial site must meet the following:
- Located 1000 feet from lakes and 300 feet from rivers and streams
- Mortalities are not buried within 5 feet of the seasonal water table
- Mortalities are not buried within 10 feet of karst susceptible bedrock
- Soils are not sandy or gravelly

Describe approximate location(s) of potential burial site(s) below:

Sec 26, T112, R34

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Operation and Maintenance Plan

NPDES/SDS Permit Program
Feedlot Program

Doc Type: Permit Application

This *Operation and Maintenance Plan* is incorporated into the National Pollutant Discharge Elimination System (NPDES) Permit and made an enforceable part of the permit and submitted to the Minnesota Pollution Control Agency (MCPA).

Facility name: Neitzel Pork Project - Site 2 Feedlot registration no.: _____

Owner/Operator name: _____ Feedlot permit no.: _____

Liquid Manure Storage Area(s) and Manure Contaminated Runoff Containment Structure(s)

In addition to the Operation and Maintenance procedures outlined in the plans and specifications developed for the Liquid Manure Storage Area(s) (LMSA) and/or Manure Contaminated Runoff Containment Structure(s) (MCRCS), the practices identified in the following chart will be employed.

LMSA(s) and/or MCRCS(s) at the facility (list site sketch ID number(s) below) (Group structures with similar O&M practices)	**Storage capacity**	**Design freeboard***	**Required O&M** (from list below)	**Additional O&M practices** (choose from list below) (numbers 17 - 24)
☒ Underfloor LMSA (Deep Pit)	(months/days)	(feet)	(required by permit)	(no specific requirements)
List Sketch ID #(s):	365	1	1 – 16	20
List Sketch ID #(s):			1 – 16	
☐ Outdoor LMSA (basin, tank, etc.)	(months/days)	(feet)	(required by permit)	(no specific requirements)
List Sketch ID #(s):			1 – 16	
List Sketch ID #(s):			1 – 16	
List Sketch ID #(s):			1 – 16	
☐ Runoff Containment Structure	(months/storm event)	(feet)	(required by permit)	(no specific requirements)
List Sketch ID #(s):			1 – 16	
List Sketch ID #(s):			1 – 16	

*Freeboard is the volume of a basin only available for use in emergency situations (typically the top 1 foot of depth). If the depth listed here does not coincide with the design plans and specifications, the correct freeboard will be that which is listed in the design plans and specifications.

Activities required by permit conditions (for those items/structures present at or applicable to the facility)

1. Perform weekly visual inspection of stormwater diversion devices
2. Perform weekly visual inspections of runoff control structures
3. Perform weekly visual inspections of devices channeling manure-contaminated runoff to the storage area
4. Perform weekly visual inspections of all LMSAs/MCRCSs
5. Perform weekly reading of depth marker level for all LMSAs/MCRCSs collecting precipitation
6. Maintain design freeboard and operating levels in LMSAs/MCRCSs
7. Perform monthly examination of the monitoring port or drain tile outlet for water flow and signs of discoloration or odor
8. Maintain volume in LMSAs/MCRCSs to avoid the need for winter application of manure and be consistent with the MMP
9. Repair sloughing or settling of earthen embankments (most repairs to liner material need plans and specs from a P.E.)
10. Repair of damage to concrete, lumber, steel, or other construction material used
11. Divert surface water flow away from and prevent pooling near liquid manure storage areas
12. Inspect manure handling equipment including hoses and couplings for pump-out periodically for leaks
13. Routine maintenance of equipment such as valves and pumps
14. Use automatic shut-off devices on continuous pumping equipment
15. Do not allow the LMSAs/MCRCSs to discharge (unless allowed/exempt by permit conditions)
16. Maintain a fence around at grade or near-grade LMSAs

Additional facility design, maintenance, and operational practices
(no specific items are required in this section, unless incorporated into the design plans and specifications for the structure)

17. Use access pads for pump-out equipment to prevent erosion
18. Use anti-scour practices at pipe outlets to prevent liner damage
19. Removal of built-up solids from separation screens
20. Control vegetation around LMSAs by frequent mowing or other practices
21. Maintain appropriate design volume in LMSAs by controlling sludge build-up.
22. Cleaning out of transfer pipes to prevent sludge build up
23. Other: _____
24. Other: _____

Solid Manure Storage Areas

In addition to the Operation and Maintenance procedures outlined in the plans and specifications developed for the Solid Manure Storage Area(s) the practices identified in the following chart will be employed.

Solid manure storage areas at the facility (list site sketch ID number(s) below) (Group structures with similar O&M practices)	**Storage capacity**	**Quantity stored**	**Required O&M** (from list below)	**Additional O&M practices** (choose from list below) (numbers 10 - 13)
☐ Stockpile (on-site)	(months/days)	(tons)	(required by permit)	(no specific requirements)
List Sketch ID #(s):			1 – 8	
List Sketch ID #(s):			1 – 8	
☐ Manure pack or litter	(months/days)	(tons)	(required by permit)	(no specific requirements)
List Sketch ID #(s): 1			1 – 8	
List Sketch ID #(s):			1 – 8	
☐ Underfloor Storage	(months/days)	(tons)	(required by permit)	(no specific requirements)
List Sketch ID #(s):			1 – 8	
List Sketch ID #(s):			1 – 8	
☐ Manure Compost	(months/days)	(tons)	(required by permit)	(no specific requirements)
List Sketch ID #(s):			1 – 9	

Activities required by permit conditions (for those items/structures present at or applicable to the facility)

1. Perform weekly visual inspection of stormwater diversion devices
2. Perform weekly visual inspections of runoff control structure
3. Perform weekly visual inspections of devices channeling manure-contaminated runoff to the manure storage or containment structure
4. Inspect manure hauling equipment periodically for leaks
5. Divert surface water flow away from and prevent pooling near solid manure storage areas
6. Repair of damage to permanent stockpile/storage pad (if a permanent stockpile/storage pad is required)
7. Repair of damage to concrete, lumber, steel, or other construction material used
8. Removal of all manure temporarily placed outside of barn/lot during cleanout process within ten days (no more than six times per year)
9. Operate the compost site in accordance with Minn. R. 7020.2150 (manure compost sites **only)**

Additional facility design, maintenance, and operational practices
(no specific items are required in this section, unless incorporated into the design plans and specifications for the structure)

10. Routine maintenance of manure handling equipment
11. Removal of built-up solids from separation screens
12. Other: _____
13. Other: _____

General Facility Operations

Initial here: DN,

by initialing here I indicate that I have read, understand, and agree to the requirements/procedures outlined below. (initial is required for all facilities using this form)

- A daily inspection of all water lines, including drinking water or cooling water lines (an equivalent method that incorporates the use of water meters, pressure gages or other monitoring devices is also acceptable)
- Disposal of solid and hazardous waste will be done in accordance with applicable Minnesota Rules
- Animals shall not be allowed to come into contact with waters of the state (except animals on pasture)
- Records of operation and maintenance activities will be kept in accordance with the facility's NPDES/SDS permit
- Manure storage areas shall be managed and subsequent land application of manure shall be performed in accordance with the approved manure management plan (MMP) for the facility.
- For those sites that are required by the MPCA to perform groundwater monitoring, the facility agrees to incorporate the MPCA approved groundwater monitoring plan and/or requirements from the facility's NPDES/SDS Permit into this Operations and Maintenance Plan.

Ancillary Area Stormwater Management

In addition to the Operation and Maintenance procedures outlined in the Stormwater Pollution Prevention Plan (SWPPP) developed for the Facility (if required) the practices identified in the following chart will be employed to manage stormwater discharges from ancillary areas not included in the definition of the feedlot facility.

Potential Pollutant Transport Areas (not included in the definition of the feedlot facility)	**O&M Practices** (choose at least one practice from the list below)
☒ Access Roads or Parking Areas used for Transporting Materials To/From Facility	2
☐ Non-Manure Materials Handling Areas (Fertilizer/Pesticide Storage, Bulk Oil/Gasoline Storage, Dry Bale/Bedding Storage, Milk/Egg Storage, Etc.)	
☒ Garbage/Trash Disposal Sites	8
☒ Equipment Storage and Maintenance Sites	1
☒ Shipping and Receiving Areas	2
☐ Truck/Equipment Wash Areas	
☐ Other:	
☐ Other:	
☐ Other:	

Potential Erosion or Sediment Transport Areas (not included in the definition of the feedlot facility)	**O&M Practices** (choose at least one practice from the list below)
☒ Access Roads or Parking Areas	18
☒ Roof Water Runoff	13,17
☒ Yard Water Runoff	16,17
☐ "Clean-Water" Tile Intakes	
☐ Permanent Stormwater Management Structure Discharge (outlet of stormwater basin, etc)	
☐ Other:	
☐ Other:	
☐ Other:	

Activities for pollutant transport areas

1. Ancillary area has roof/cover to prevent stormwater mingling with pollutants
2. Divert surface water flow away from and prevent pooling near ancillary areas
3. Maintain stormwater diversion devices
4. Perform visual inspections of runoff diversion devices
5. Repair of damage to concrete, lumber, steel, or other construction material used
6. Maintain grass buffers/grass waterways at discharge point
7. Handled/Moved off-site
8. Maintain site cleanliness
9. Other: _____
10. Other: _____
11. Other: _____

Activities for erosion or sediment transport areas

12. Provide energy dissipation at the end of channelized flow or pipe/gutter, such as rip-rap.
13. Maintain gravel/rock where roof water falls onto soil
14. Maintain grass buffers/grass waterways at discharge point
15. Maintain grass buffer around tile intakes
16. Maintain grass buffers at the edge of roads/parking areas
17. Keep vegetative cover where possible
18. Repair rills that develop to minimize scour of sediment
19. Maintain stormwater diversion devices
20. Perform visual inspections of erosion prevention measures
21. Maintain site cleanliness
22. Other: _____
23. Other: _____
24. Other: _____

Manure Storage, Handling, and Testing Information

Minnesota Pollution Control Agency

Facility Name: Neitzel Pork Project
Owner/Operator Name: Doug Neitzel

NPDES or SDS Permit? Yes
Date Last Revised: 2/7/2018

Permit Number: MN G440280
Registration Number: 127-50064

Version 7.05 Last Updated: 10/12/16

Manure Sources	Manure Source #1	Manure Source #2	Manure Source #3	Manure Source #4
Description of Manure Source Group sources with similar nutrient content if they have identical animal type, water usage, feed rations, and manure storage	Swine Finishing	Swine Finishing	Swine Fisnishing	Swine Finishing
Livestock Information				
Predominate Animal Type (Contributing to Manure Source)	Swine - Grow/Finish	Swine - Grow/Finish	Swine - Grow/Finish	Swine - Grow/Finish
Average Animal Weight	150 lbs	150 lbs	150 lbs	150 lbs
Animal Number	1,000	1,000	1,000	1,000
Length of Time Livestock Spend In Facility	355 days/yr	355 days/yr	355 days/yr	355 days/yr
Additional Animal Type (Contributing to Manure Source)				
Average Animal Weight	lbs	lbs	lbs	lbs
Animal Number				
Length of Time Livestock Spend In Facility	days/yr	days/yr	days/yr	days/yr
Storage Information				
Storage Type	Underfloor Concrete Pit	Underfloor Concrete Pit	Underfloor Concrete Pit	Underfloor Concrete Pit
Capacity	500,000 gals	500,000 gals	500,000 gals	500,000 gals
Storage Length	365 days	365 days	365 days	365 days
Application Methods				
Commercial Applicator (Yes/No or Name)	Circle R Waste	Circle R Waste	Circle R Waste	Circle R Waste
Spreader Type	Liquid Tanker	Liquid Tanker	Liquid Tanker	Liquid Tanker
How Volume/Tonnage Determined per Load	Commercial Applicator	Commercial Applicator	Commercial Applicator	Commercial Applicator
How Application Rate is Calibrated	Flowmeter	Flowmeter	Flowmeter	Flowmeter
Manure Analysis - Existing facilities should use actual manure test results				
Sampling Frequency	Every Year	Every Year	Every Year	Every Year
Sampling Methods	Well Agitated Composite	Well Agitated Composite	Well Agitated Composite	Well Agitated Composite
Date Last Analyzed	11/30/16	11/30/16	11/30/16	11/30/16
Basis for N,P, & K Values Below	Average of Previous	Average of Previous	Average of Previous Samples	Average of Previous
Total N - (do not enter lab estimated availability)	53 lbs/1000 gal	53 lbs/1000 gal	53 lbs/1000 gal	53 lbs/1000 gal
Total P_2O_5 - (do not enter lab estimated availability)	23 lbs/1000 gal	23 lbs/1000 gal	23 lbs/1000 gal	23 lbs/1000 gal
Total K_2O - (do not enter lab estimated availability)	34 lbs/1000 gal	34 lbs/1000 gal	34 lbs/1000 gal	34 lbs/1000 gal
Annual Generation - Existing facilities should use actual production values				
Total Manure Produced per Year (Estimated)	316,950 gals	316,950 gals	316,950 gals	316,950 gals
Total Manure Produced per Year (Actual)	300,000 gals	300,000 gals	300,000 gals	300,000 gals
Annual N Produced	15,825 lbs	15,825 lbs	15,825 lbs	15,825 lbs
Annual P_2O_5 Produced	6,825 lbs	6,825 lbs	6,825 lbs	6,825 lbs
Annual K_2O Produced	10,200 lbs	10,200 lbs	10,200 lbs	10,200 lbs

Average Book Values	
N	58
P_2O_5	44
K_2O	40

Average Book Values	
N	58
P_2O_5	44
K_2O	40

Average Book Values	
N	58
P_2O_5	44
K_2O	40

Average Book Values	
N	58
P_2O_5	44
K_2O	40

Manure Storage, Handling, and Testing Information

Minnesota Pollution Control Agency

Facility Name: Neitzel Pork Project
Owner/Operator Name: Doug Neitzel
NPDES Permit Coverage? Yes
Date Last Revised: 43138
Permit Number: MN G440280
Registration Number: 127-50064

Manure Sources	Manure Source #5	Manure Source #6	Manure Source #7	Manure Source #8
Description of Manure Source Group sources with similar nutrient content if they have identical animal type, water usage, feed rations, and manure storage	Swine - Grow/Finish			
Livestock Information				
Predominate Animal Type (Contributing to Manure Source)	Swine - Grow/Finish			
Average Animal Weight	150 lbs	lbs	lbs	lbs
Animal Number	3,300			
Length of Time Livestock Spend In Facility	355 days/yr	days/yr	days/yr	days/yr
Additional Animal Type (Contributing to Manure Source)				
Average Animal Weight	lbs	lbs	lbs	lbs
Animal Number				
Length of Time Livestock Spend In Facility	days/yr	days/yr	days/yr	days/yr
Storage Information				
Storage Type	Underfloor Concrete Pit			
Capacity	1,233,603 gals			
Storage Length	365 days			
Application Methods				
Commercial Applicator (Yes/No or Name)	Circle R Waste			
Spreader Type	Liquid Tanker			
How Volume/Tonnage Determined per Load	Commercial Applicator			
How Application Rate is Calibrated	Flowmeter			
Manure Analysis - Existing facilities should use actual manure test results				
Sampling Frequency	Every Year			
Sampling Methods	Well Agitated Composite			
Date Last Analyzed				
Basis for N,P, & K Values Below	Estimate			
Total N - (do not enter lab estimated availability)	53 lbs/1000 gal			
Total P_2O_5 - (do not enter lab estimated availability)	23 lbs/1000 gal			
Total K_2O - (do not enter lab estimated availability)	34 lbs/1000 gal			
Annual Generation - Existing facilities should use actual production values				
Total Manure Produced per Year (Estimated)	1,045,934 gals			
Total Manure Produced per Year (Actual)	865,000 gals			
Annual N Produced	45,845 lbs	lbs	lbs	lbs
Annual P_2O_5 Produced	19,895 lbs	lbs	lbs	lbs
Annual K_2O Produced	29,410 lbs	lbs	lbs	lbs

Average Book Values	
N	58
P_2O_5	44
K_2O	40

Average Book Values	
N	
P_2O_5	
K_2O	

Average Book Values	
N	
P_2O_5	
K_2O	

Average Book Values	
N	
P_2O_5	
K_2O	

General Field Information (Fields 1-35)

Minnesota Pollution Control Agency

Unique Field ID / Attach Aerial Photo or Map With Location Description (twp-rng-sec)	Field Acreage	Sensitive Features (Identify on Aerial Photo or Sketch) ***Insert a check mark by double-clicking the appropriate cells***												Soils Information (Test required once every 4 yrs)				Irrigation?	Anticipated Manure Application Timing NOTE: NPDES & SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Winter Application Field Info (If Applicable)		
		Tile Intakes	Drainage Ditch	Lake, River, Stream	Intermittent Stream (If farmed call MPCA)	Wetland (non-farmed)	Coarse-Textured Soil (soil type ends in "sand")	Floodplain	Public Well Management Area	Shallow Bedrock	Sinkhole	Well, Mine, or Quarry	Other Conduit to Water	Year of Soil Test	Soil Test Phosphorus (P) Field Average (ppm)		Organic Matter			Distance from Field to Waters		Field Slope (%)
Example	80	✔	***You must double-click cells to insert a check mark***											2005	30	Olsen	Med/High	No	Late Fall	800	ft	3%
Sherman 20 NE 1/4	157	✔										✔		2013	39	Olsen	Med/High		Late Fall			
Sherman 20 SE 1/4	137	✔										✔		2013	27	Olsen	Med/High		Late Fall			
Sherman 20 SW 1/4	164	✔										✔		2013	27	Olsen	Med/High		Late Fall			
Sherman 20 NW 1/4	126	✔		✔								✔		2013	25	Olsen	Med/High		Late Fall			
Sherman 21 Turkey Barns	110	✔										✔		2013	29	Olsen	Med/High		Late Fall			
Sherman 21 NW	51	✔												2013	29	Olsen	Med/High		Late Fall			
Sherman 17 N	52.7	✔		✔								✔		2013	27	Olsen	Med/High		Late Fall			
Sherman 17 S	48.4	✔			✔									2013	27	Olsen	Med/High		Late Fall			
Sherman 19 NE 1/4	120	✔		✔								✔		2013	26	Olsen	Med/High		Late Fall			
Sherman 18 SE 1/2	185	✔	✔									✔		2013	25	Olsen	Med/High		Late Fall			
Sherman 17 SW 1/4	145	✔		✔	✔							✔		2013	27	Olsen	Med/High		Late Fall			
Sherman 26 N	71.5	✔	✔									✔		2013	19	Olsen	Med/High		Late Fall			
Sherman 29	76	✔										✔		2013	19	Olsen	Med/High		Late Fall			
Morgan 4	110	✔	✔									✔		2013	28	Olsen	Med/High		Late Fall			
Morgan 9	80	✔	✔																			
Sherman 35	80	✔																				
Sherman 26 SE	153	✔	✔									✔										
Eden 18	144	✔										✔										

Total Acres (Fields 1 - 35) 2,010

Field Specific Info for Methodology Portion of MMP (Fields 1 - 35)

Minnesota Pollution Control Agency

Unique Field ID *Consistent with maps or aerial photos*	Crops Grown (Indicate all crops that will likely be grown during the permit period)															Planned Manure Application (Indicate all timings and methods that could occur)										Emergency Winter Application of Liquid Manure			
																Timing					Method (follow setbacks)								
	Corn (grain)	Corn (silage)	Sweet corn	Soybeans	Alfalfa	Grass/legume hay	Oats	Wheat	Edible beans	Potatoes	Rye	Sugarbeets	Other: Peas	Other:	Other:	Fall	Spring	Summer (with cover crop)	Winter (Solid Manure Only)	MN P Index Value (attach input & output)	Injection	Incorp. within 24 hrs & before rainfall	Incorporation within 4 days	No Incorporation		Potential App Site?	Distance from App Area to Waters (at least 300 ft)		Field Slope (%)
	Double-Click cells to insert check mark															Double-Click cells to insert check mark					Double-Click cells to insert check mark					Double-Click cells to insert check			
Example	✔	✔		✔	✔			✔								✔					✔	✔				✔	800	ft	2 %
Sherman 20 NE 1/4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 20 SE 1/4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔				✔	300	ft	3 %
Sherman 20 SW 1/4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 20 NW 1/4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 21 Turkey Barns	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 21 NW	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 17 N	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 17 S	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 19 NE 1/4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 18 SE 1/2	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 17 SW 1/4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 26 N	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔				✔	300	ft	3 %
Sherman 29	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Morgan 4	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Morgan 9	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 35	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							
Sherman 26 SE	✔		✔					✔	✔				✔			✔	✔				✔	✔							
Eden 18	✔		✔	✔				✔	✔				✔			✔	✔				✔	✔							

Nutrient Management Info for Methodology Portion of MMP

Minnesota Pollution Control Agency

Nitrogen and Phosphorus Management

Even though no data entry or acknowledgement is required, this information is required as part of a complete MMP and must be followed.

Nitrogen Management - Nitrogen Management - Nitrogen Management - Nitrogen Management

Based on the crop rotation, nutirent application rates will not exceed the nitrogen needs/removal of the crops as derived from the following MN Extension Service publications:
"Manure Management in Minnesota" publication "WW-03553-C, Revised 2012", "Fertilizer Guidelines for Agronomic Crops in Minnesota" publication "BU-06240-S, Revised 2011", and "Nutrient Management for Commercial Fruit & Vegetable Crops in Minnesota" publication BU-05886, Revised 2005.
Note: these publications have been incorporated into this planner.

Manure application rates will be calculated using the following factors:

1) Maximum Nitrogen needs for non-legumes and nitrogen removal for legumes will follow Tables A & C (included as part of planner)
2) Manure analysis test results (most recent or historical average)
3) Soil test results (where applicable)
4) First year nitrogen availability will be based on animal species and method of application as indicated in Table B (included as part of this planner)
5) If applicable, credits for previous crops and/or manure applications will be accounted for according to Tables A, B, & C (included as part of this planner)
6) If applicable, any fertilizer nitrogen applied will be accounted for in the calculations.

Any deviation from the maximum nitrogen applied will follow the standards allowed in Minn Rule 7020.2225, subp. 3 (A)(2) and the issued permit

Phosphorus Management - Phosphorus Management - Phosphorus Management - Phosphorus Management

Phosphorus will be managed for all manure applications according to the following :

Manure application rates will be calculated using the following factors:

1) The calculations to determine crop P_2O_5 removal rate will be based on Table C (included as part of this planner)
2) For all animal species and all methods of application, the availability factor for phosphorus is 80 percent.
3) If applicable, any fertilizer P_2O_5 will be accounted for in the calculations.
4) When soil P test levels exceed 75 ppm Bray P1 (60 ppm Olsen) within 300 feet of an open tile intake, lake, stream, intermittent stream, drainage ditch without protective berms, or a public waters wetland, I will follow protocols listed in the issued permit.
5) When soil P test levels exceed 150 ppm Bray P1 (120 ppm Olsen) on any land, I will follow protocols listed in the issued permit.
6) Where winter-time manure application is approved, phosphorus management will follow rate restrictions listed in the the issued permit.
7) In addition to items 1-6 I will manage Phosphorus according to one of the following options (either option is acceptable):
   - A) Minimum Phosphorus Management Based on Minnesota Rules
     When the table below indicates soil test levels indicate phosphorus management is required, I will manage the rate and frequency of manure applications to not allow soil P build-up over any 6 year period, as required in the issued permit
   - B) Crop Phosphorus Removal Rates (over the rotation)
     All manure will be applied according to phosphorus based rates, so that the rate and frequency of P_2O_5 applications will not exceed the expected crop P_2O_5 removal over the course of the crop rotation.

Minimum P_2O_5 Requirements

Bray P-1 (ppm)	Less than 22	22-75	76-150	Greater than 150
Olsen (ppm)	Less than 17	17-60	61-120	Greater than 120
More than 300 feet from waters*	No Phosphorus management requirements	No Phosphorus management requirements	No Phosphorus management requirements	Follow NPDES permit requirements
Less than 300 feet waters*	No Phosphorus management requirements	Prevent long-term build-up of soil P over a 6-year period (except open tile intakes)	Follow NPDES permit requirements	Follow NPDES permit requirements

* waters include: open tile lakes, streams, intermittent streams, protected wetlands, or unbermed drainage ditches

Sensitive Features Management Worksheet

Minnesota Pollution Control Agency

This worksheet identifies all allowable techniques that can be used to provide protection to sensitive features **as required** in Minnesota Rules and/or permit conditions. One of the following measures must be employed for the applicable sensitive feature. Any of the identified practices are acceptable.

Tile Intakes

Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - Inject or incorporate within 24 hours and prior to rainfall within 300 ft.
Option C - 35 ft grassed buffer
Option D - 100 ft setback with at least 16.5 ft as grassed buffer

Drainage Ditches

Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 50 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer
Option D - Protective Berm (prohibits runoff from entering the ditch)

Lakes, Rivers, and Streams

Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 100 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer

Intermittent Streams and/or Public Waters Wetlands (over 10 acres)

Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 50 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer

Wells, Mines, or Quarry

Option A - 50 ft setback - minimum (100 ft if NPDES permitted)

Sinkholes

Option A - Inject or incorporate within 24 hours and prior to rainfall upslope and within 300 ft and observe a 50 ft non-manured setback (100 ft non-manured setback for NPDES)
Option B - Berm that prevents runoff from entering the sinkhole

Application of Manure During the Summer Months (June, July, and August)

Option A - A cover crop will be planted on all fields that receive manure applications during June, July, and August

Other Conduits to Water

Option A - Inject or incorporate within 24 hours and prior to rainfall within 300 ft, observe a 25 ft non-manured setback, and avoid long term soil P build-up
Option B - 50 ft wide grassed buffer
Option C - 100 ft setback with at least 16.5 ft as grassed buffer
Option D - Protective Berm (prohibits runoff from entering the waters)

Early Fall Land Application - Unless otherwise required, this only applies to early fall manure application at NPDES or SDS permitted facilities

Option A - Fall Application onto fields that are dominated by coarse-textured soils shall be delayed until soil temperatures in the upper six (6) inches, are less than 50 degrees Fahrenheit, unless otherwise first approved by the MPCA.

Soil Erosion Conservation Measures - Required for ANY field used for winter application and for ALL fields at NPDES permitted sites

Option A - Establish grassed waterways
Option B - Contour stripcropping
Option C - No-Till cropping
Option D - Terracing
Option E - Meet tolerable soil erosion rates ("T") as defined by NRCS
Option F - Use rotations that include other than row crops (alfalfa, grass, etc)
Option G - Chisel or disk tillage with residue
Option H - Field edge buffers
Option I - Contour buffer strip
Option J - Sediment control basin
Option K - Plant a cover crop on bare ground

Sensitive Features Management Worksheet

Winter Application of Manure at NPDES& SDS Permitted Sites

Minnesota Pollution Control Agency

Winter Application *(frozen or snow-covered soils after November 30)*

Solid Manure Applications - Solid Manure Applications - Solid Manure Applications - Solid Manure Applications

These practices are required for all fields that receive winter applications of **solid** manure:

1) No manure application within 300 feet of lakes, streams, intermittent streams, drainage ditches without berms, open tile intakes, wells, wetlands, and sinkholes
2) No manure application during snowmelt that creates runoff
3) No manure application when rainfall is likely within 24 hours
4) Only apply manure to areas of the field with slopes less than or equal to 6%
5) No manure application when ice/water completely fills furrows or depressional areas

Indicate why winter application of **solid** manure is necessary and why other alternatives are not feasible (stockpiling and/or applications during non-winter periods) required

a) _____
b) _____
c) _____ NOT APPLICABLE TO THIS OPERATION _____
d) _____
e) _____

The Minnesota Phosphorus Index must be completed for all fields for winter application of **solid** manure.

All fields must meet a low to very low relative phosphorus loss risk index level (2 or less on average).
Include a copy of the P index input and outputs to verify the result
The Minnesota Phosphorus Index can be downloaded at the following link: https://www.swac.umn.edu/extension-outreach/phosphorusloss

Emergency Liquid Manure Applications - Emergency Liquid Manure Applications - Emergency Liquid Manure Applications

Winter application of **liquid** manure is prohibited by the NPDES & SDS permits except for emergency situations (as defined by the permit)

Emergencies include land application necessary to prevent Manure storage overflows at a site designed, constructed and managed to contain Manure during the winter, and where other options for additional temporary storage are not feasible. Emergencies are considered only those situations that are beyond the control of the permittee, such as unusual weather or unavoidable equipment failure.

Identify management alternatives that will be used to prevent and minimize needed emergency **liquid** applications during the winter (check all that apply)

- ☑ Transfer manure to other liquid manure storage at the facility.
- ☑ Transfer manure to other liquid manure storage not at the facility.
- ☑ Manure storage area will be pumped in fall to maximize capacity entering the winter season.
- ☑ Only the minimum amount of manure will be applied to alleviate the emergency situation; remaining manure will be applied after spring thaw.
- ☐ Other: _____

Requirements when emergency **liquid** applications are necessary (all management alternatives identified above have been exhausted)

1) Call both the **Minnesota Duty Officer** (800-422-0798) and the **MPCA** within 24 hours of an emergency application
2) No manure application within 300 feet of lakes, streams, intermittent streams, drainage ditches without berms, open tile intakes, wells, wetlands, and sinkholes
3) Only apply manure to areas of the field with slopes less than or equal to 4%
4) Maximum application rate of 3,500 gallons/acre/winter season not to exceed 60 pounds of P_2O_5/acre/winter season.
5) Utilize an application rate that prevents ponding or runoff during the application process.

6 Year Soil Phosphorus Management Plan

Minnesota Pollution Control Agency

When soil phosphorus levels are required to be maintained (or reduced) over a 6 year period, one of the following crop rotation sceanrios will be employed for the applicable field or area near senstive features. You must complete at least one rotation below or indicate that manure will not be applied within 300 feet of sensitive features.

☑ Manure will not be applied within 300 ft of open tile intakes, lakes, streams, intermittent streams, public waters wetlands, or drainage ditches without protective berms
(when checked there is no need to complete scenarios below - text will be gray if not applicable due to extremely high soil P test)

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Crop (Year 1)								
Yield								
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)								
Crop (Year 2)								
Yield								
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)								
Crop (Year 3)								
Yield								
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)								
Crop (Year 4)								
Yield								
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)								
Crop (Year 5)								
Yield								
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)								
Crop (Year 6)								
Yield								
Manure Application Source (1-12) & Rate								
2nd Manure Application								
Fertilizer P (total)								

Results

P Applied over 6 Yrs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
P Removed over 6 Yrs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Will Rotation Build Soil Phosphorus Levels?								

Crop and Nutrient Planning Worksheet (Fields 1-35)

Minnesota Pollution Control Agency

Cropping Year: September 1, 2017 to August 31, 2018 **Crop Land Manager's Name:** _____

Field Information	Crop Information				Last Year's Manure App (Nutrients for 2017 Crop) leave blank if none applied			Nutrient Recommendations and Credits N (lb/ac)						P_2O_5 (lb/ac)		Irrigated Sands Alternate N Needs displayed if applicable	
Field ID	Crop Grown to Utilize the Nutrients Applied 2018 Crop	Expected Yield (per acre) crop receiving nutrients	Crop Most Recently Harvested 2017 Crop	Crop Grown 2 Years Ago 2016 Crop	Last Year's Manure Test N	Animal Type of Manure Applied Last Year	Last Year's Application Rate (per acre) Typically 9/1/16 to 8/31/17	N Recommendation after 2017 crop credits	Legume-N Credit from the 2016 Crop	N Credit from Manure Applied to 2017 Crop	N Credit from Irrigation Water	N Needs after all credits	N Removal after all credits	P_2O_5 Needs (based on soil test data)	P_2O_5 Removal (based on crop uptake)	N Needs for Corn on Irrigated Sands after all credits	Use Irrigated Sands N Needs instead of typical N Needs
Example	Corn	180 bu	Corn	Alfalfa-Good	25	Dairy	15,000 gal	180	75	94	---	11	---	0	63	---	
Sherman 20 NE 1/4	Corn	200 bu	Corn	Corn	52.75	Swine	4,000 gal	180	0	32	---	148	---	0	70	---	
Sherman 20 SE 1/4	Soybeans	50 bu	Corn	Corn				---	0	---	---	---	175	0	41	---	
Sherman 20 SW 1/4	Soybeans	50 bu	Corn	Corn				---	0	---	---	---	175	0	41	---	
Sherman 20 NW 1/4	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	0	70	---	
Sherman 21 Turkey Barns	Corn	200 bu	Corn	Soybeans				180	0	---	---	180	---	0	70	---	
Sherman 21 NW	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	0	70	---	
Sherman 17 N	Soybeans	50 bu	Corn	Corn	52.75	Swine	4,400 gal	---	0	35	---	---	140	0	41	---	
Sherman 17 S	Soybeans	50 bu	Corn	Corn				---	0	---	---	---	175	0	41	---	
Sherman 19 NE 1/4	Corn	200 bu	Corn	Soybeans				180	0	---	---	180	---	0	70	---	
Sherman 18 SE 1/2	Corn	200 bu	Corn	Corn				180	0	---	---	180	---	0	70	---	
Sherman 17 SW 1/4	Soybeans	50 bu	Soybeans	Corn				---	0	---	---	---	175	0	41	---	
Sherman 26 N	Corn	200 bu	Corn	Corn				180	0	---	---	180	---	0	70	---	
Sherman 29	Soybeans	50 bu	Corn	Soybeans	52.75	Swine	3,700 gal	---	0	29	---	---	146	0	41	---	
Morgan 4	Soybeans	50 bu	Corn	Soybeans				---	0	---	---	---	175	0	41	---	
Morgan 9	Soybeans	50 bu	Corn	Soybeans				---	0	---	---	---	175	0	41	---	
Sherman 35	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	0	70	---	
Sherman 26 SE	Corn	200 bu	Soybeans	Corn				140	0	---	---	140	---	0	70	---	
Eden 18	Soybeans	50 bu	Corn	Soybeans				---	0	---	---	---	175	0	41	---	

Nutrient Application Planning Worksheet (Fields 1-25)

Minnesota Pollution Control Agency

Manure Source Summary

Source 1:	Swine Finishing (52.75-22.75-34)	**Source 5:**	Swine - Grow/Finish (53-23-34)	**Source 9:**	
Source 2:	Swine Finishing (52.75-22.75-34)	**Source 6:**		**Source 10:**	
Source 3:	Swine Fisnishing (52.75-22.75-34)	**Source 7:**		**Source 11:**	
Source 4:	Swine Finishing (52.75-22.75-34)	**Source 8:**		**Source 12:**	

☐ I will transfer ownership of some of the manure.

Field Information Summary		Crops Grown Summary		Nutrients Needed to Meet Yield Goal (lb/acre) after credits for nutrients from previous crops and manure applications			Manure Application Information (Nutrients for the 2018 Crop) Application Typically 9/1/2017 to 8/31/2018					Nitrogen (lb N/ac)				Phosphorus (lb P_2O_5/ac)			
Field ID	Acres After Setbacks	Crop Grown to Utilize the Nutrients Applied 2018 Crop	Crop Most Recently Harvested 2017 Crop	Nitrogen Needs	Nitrogen (Removal)	Phosphorus (Needs)	Manure Source (1-12)	Method of Application and Incorporation NPDES/SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Acres Receiving Manure (reduce to split the field)	Manure Application Rate (gals/tons per acre) Calculated Max Rate based on Nitrogen	Manure Application Rate (gals/tons per acre) Planned Rate max used if blank	N from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	Excess Available N (negative for deficiency)	P from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	P in Excess of Removal (negative for deficiency)
Sherman 20 NE 1/4	157	Corn	Corn	148	---	0	4	Knife Injection	81	3,737	3700	137	10	0	-1	67	20	0	17
Sherman 20 SE 1/4	137	Soybeans	Corn	---	175	0				---		---			-175	---			-41
Sherman 20 SW 1/4	164	Soybeans	Corn	---	175	0				---		---			-175	---			-41
Sherman 20 NW 1/4	126	Corn	Soybeans	140	---	0	1	Knife Injection	81	3,710	3700	137	3	0	0	67	6	0	3
Sherman 21 Turkey Barns	110	Corn	Corn	180	---	0	2	Knife Injection	63	4,794	4800	177	3	0	0	87	6	0	23
Sherman 21 NW	51	Corn	Soybeans	140	---	0	3	Knife Injection	51	3,710	3700	137	3	0	0	67	6	0	3
Sherman 17 N	53	Soybeans	Corn	---	140	0				---		---			-140	---			-41
Sherman 17 S	48	Soybeans	Corn	---	175	0				---		---			-175	---			-41
Sherman 19 NE 1/4	120	Corn	Corn	180	---	0				---		---			-180	---			-70
Sherman 18 SE 1/2	185	Corn	Corn	180	---	0				---		---			-180	---			-70
Sherman 17 SW 1/4	145	Soybeans	Soybeans	---	175	0				---		---			-175	---			-41
Sherman 26 N	72	Corn	Corn	180	---	0				---		---			-180	---			-70
Sherman 29	76	Soybeans	Corn	---	146	0				---		---			-146	---			-41
Morgan 4	110	Soybeans	Corn	---	175	0				---		---			-175	---			-41
Morgan 9	80	Soybeans	Corn	---	175	0				---		---			-175	---			-41
Sherman 35	80	Corn	Soybeans	140	---	0	5	Knife Injection	80	3,693	3700	137	3	0	0	68	6	0	4
Sherman 26 SE	153	Corn	Soybeans	140	---	0	5	Knife Injection	153	3,693	3700	137	3	0	0	68	6	0	4
Eden 18	144	Soybeans	Corn	---	175	0				---		---			-175	---			-41

Nutrient Application Planning Worksheet (Fields 26-50)

Minnesota Pollution Control Agency

Field Information Summary		Crops Grown Summary		Nutrients Needed to Meet Yield Goal (lb/acre) after credits for nutrients from previous crops and manure applications			Manure Application Information (Nutrients for the 2018 Crop) Application Typically 9/1/ to 8/31/2018					Nitrogen (lb N/ac)				Phosphorus (lb P_2O_5/ac)			
Field ID	Acres After Setbacks	Crop Grown to Utilize the Nutrients Applied 2018 Crop	Crop Most Recently Harvested 2017 Crop	Nitrogen Needs	Nitrogen (Removal)	Phosphorus (Needs)	Manure Source (1-12)	Method of Application and Incorporation NPDES/SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Acres Receiving Manure (reduce to split the field)	Manure Application Rate (gals/tons per acre) Calculated Max Rate based on Nitrogen	Manure Application Rate (gals/tons per acre) Planned Rate max used if blank	N from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	Excess Available N (negative for deficiency)	P from Manure (Available this year)	Total Fertilizer Application (lbs/acre) Starter	Total Fertilizer Application (lbs/acre) Supplemental	P in Excess of Removal (negative for deficiency)

Total Acres (Fields 1 - 50) = 2,010

☐ I will transfer ownership of the remaining amount of manure.

	Amount Applied	Amount Remaining	Acres Applied
Source 1:	299,700	0	81
Source 2:	300,000	0	63
Source 3:	299,700	0	81
Source 4:	299,700	0	81

	Amount Applied	Amount Remaining	Acres Applied
Source 5:	862,100	0	233
Source 6:	---	---	---
Source 7:	---	---	---
Source 8:	---	---	---

	Amount Applied	Amount Remaining	Acres Applied
Source 9:	---	---	---
Source 10:	---	---	---
Source 11:	---	---	---
Source 12:	---	---	---

More Fields Above ^ ^ ^

Nutrient Application Planning Worksheet (Split, Dual, and 2nd Crop Fields)

Minnesota Pollution Control Agency

Field Information Summary		Crops Grown Summary		Nutrients Needed to Meet Yield Goal (lb/acre) after credits for nutrients from previous crops and manure applications			Manure Application Information (Nutrients for the 2018 Crop) Application Typically 9/1/ to 8/31/2018					Nitrogen (lb N/ac)				Phosphorus (lb P_2O_5/ac)			
Field ID	Acres After Setbacks	Crop Grown to Utilize the Nutrients Applied 2018 Crop	Crop Most Recently Harvested 2017 Crop	Nitrogen Needs	Nitrogen (Removal)	Phosphorus (Needs)	Manure Source (1-12)	Method of Application and Incorporation NPDES/SDS permitted sites cannot apply liquid manure in the winter (unless emergency)	Acres Receiving Manure	Manure Application Rate (gals/tons per acre) Calculated Max Rate based on Nitrogen	Manure Application Rate (gals/tons per acre) Planned Rate max used if blank	N from Manure (Available this year)	Fertilizer Application (lbs/acre) Starter	Fertilizer Application (lbs/acre) Supplemental	Excess Available N (negative for deficiency)	P from Manure (Available this year)	Fertilizer Application (lbs/acre) Starter	Fertilizer Application (lbs/acre) Supplemental	P in Excess of Removal (negative for deficiency)
Sherman 20 NW 1/4 (Split)	45	Corn	Soybeans	140	---	0	3	Knife Injection	30	3,710	3700	137	3	0	0	67	6	0	3

Total Split/Dual Acres = 45

Animal Mortality Management Worksheet

Minnesota Pollution Control Agency

Indicate with a check mark the anticipated method(s) of dead animal disposal.

☑ **Rendering**

Carcasses at the pick-up point will comply with the following:

- Kept in an animal-proof, enclosed area.
- At least 200 yards from a neighbor's buildings.
- Picked up within 72 hours (7 days if refrigerated to less then 45 degrees).
- Other: _____

☐ **Composting**

The composting area will comply with the following:

- Built on an impervious, weight-bearing pad that is large enough to allow equipment to maneuver.
  - Note: Class V gravel material is not considered to be impervious.
- Covered with a roof to prevent excessive moisture on the composting material, but if sawdust or other water-repelling material is used as the bulking agent, a roof may not be necessary.
- Built of rot-resistant material that is strong enough to withstand the force exerted by equipment.
- Large enough to handle each day's normal mortality through the endpoint of the composting which consists of a minimum of two (2) heat cycles.
- Other: _____

☐ **Burial**

The following operational practices will be implemented

- Stay 5 feet above seasonal high water table.
- Stay 1000 feet away from lakes and 300 feet away from rivers, streams, ditches, etc.
- Be covered immediately with enough soil to keep scavengers out (three feet is sufficient).
- Not be placed in sandy or gravelly soil types.
- Maintain at least 10 feet vertical separation between dead animals and bedrock.
- Other: _____

☐ **Incineration**

The incinerator will meet the following:

- Capable of producing emissions not to exceed 20 percent opacity.
- Fitted with an afterburner that maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds.
- Ash from the incinerator must be handled in such a manner as to prevent particulate matter from becoming airborne.

☐ **Other Method**

The following operational practices will be implemented (describe the alternative method below)

MMP NOTES

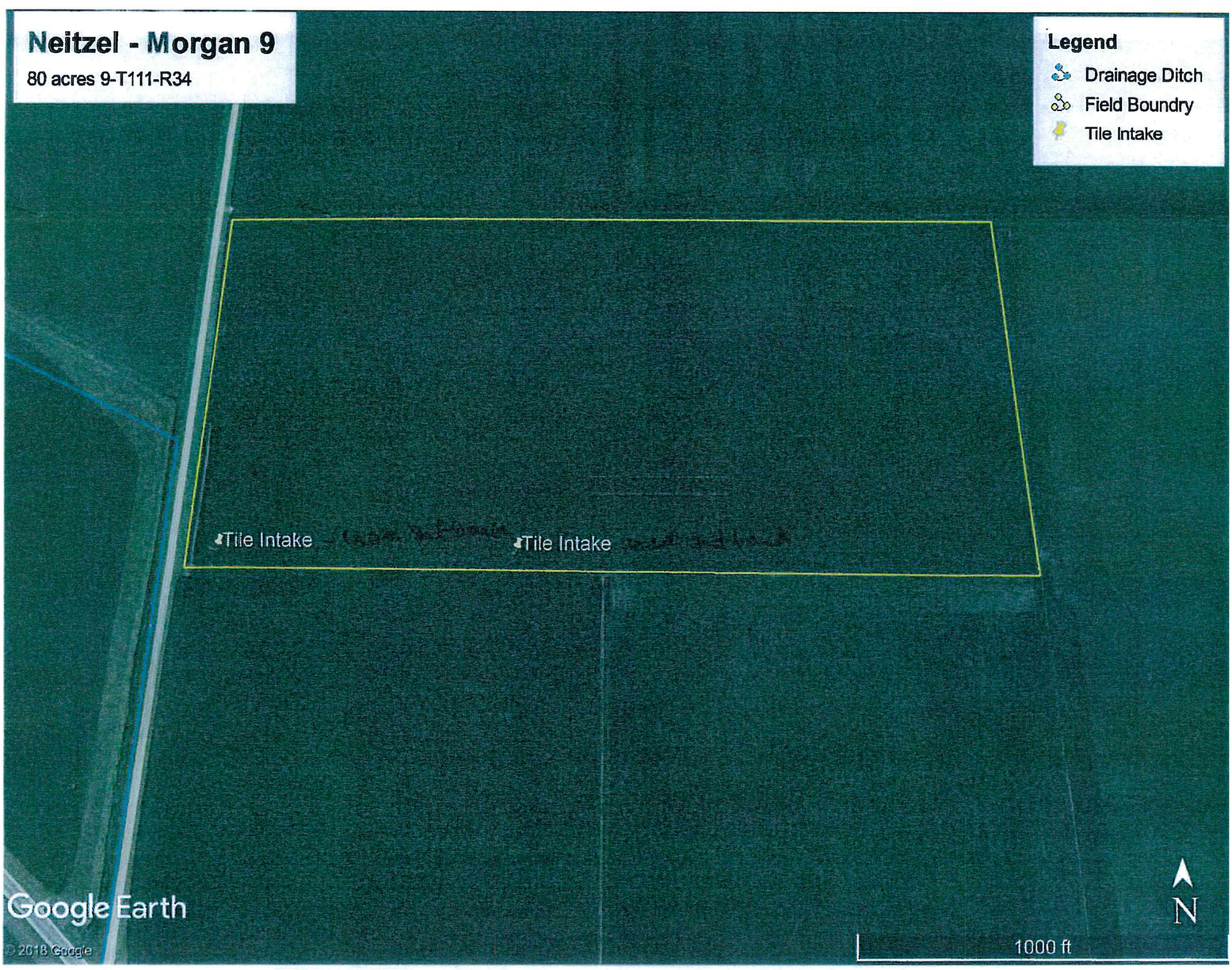
Minnesota Pollution Control Agency

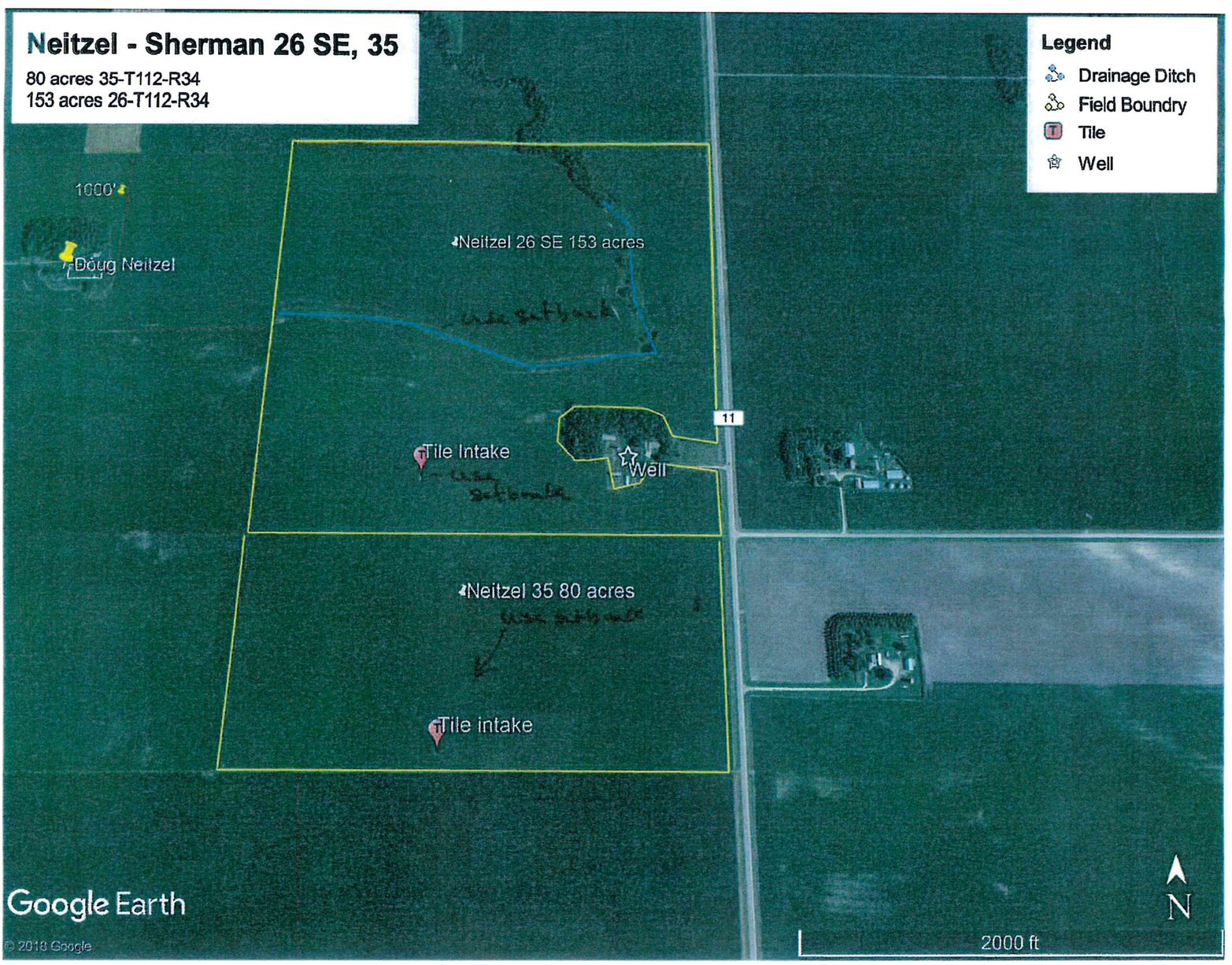
This worksheet will allow entry of notes related to the MMP. This can be used to explain a part of the plan, notes regarding fertilizer/pesticide applications, or any other item that is applicable.

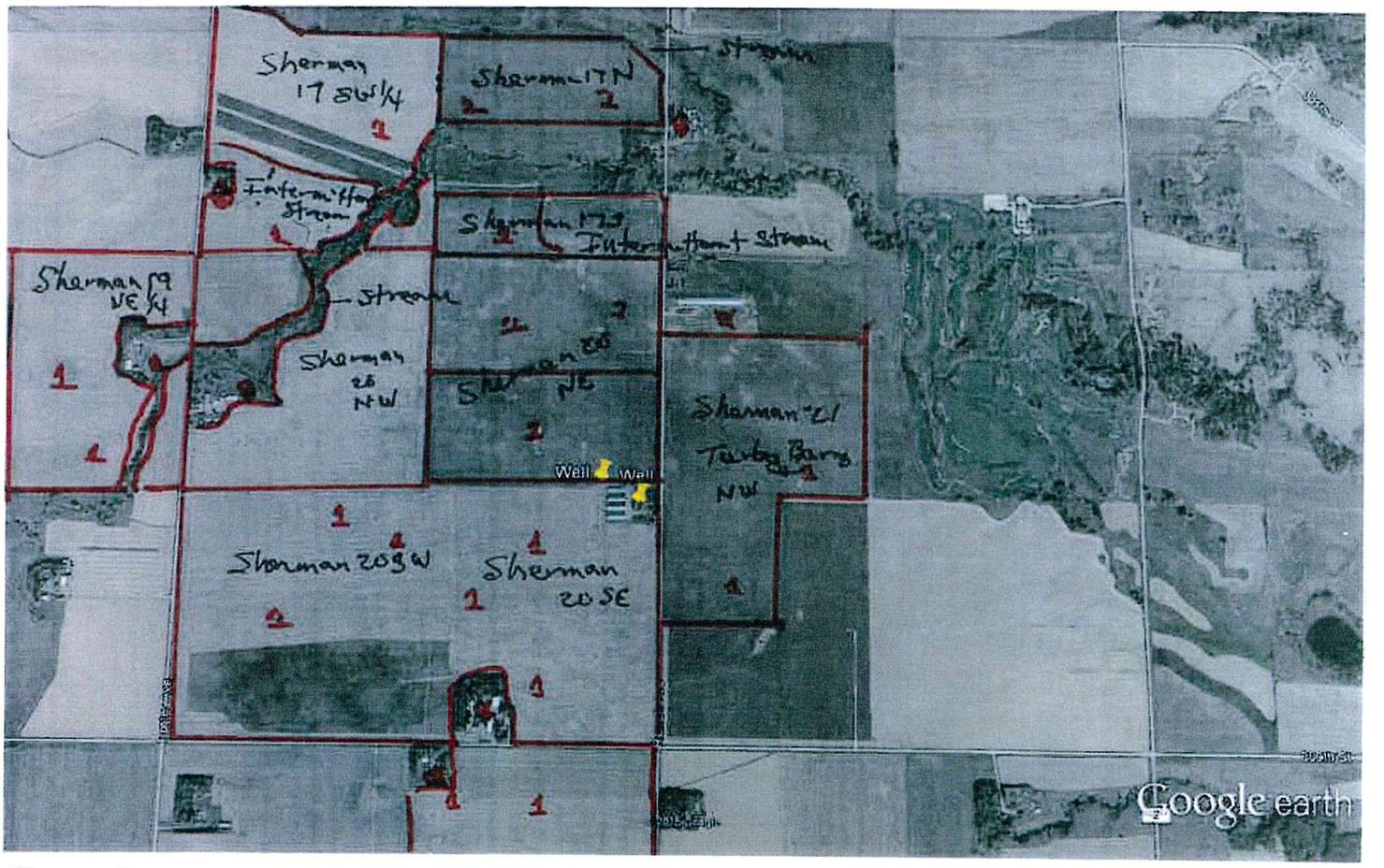
Simply start typing in any of the cells ***below****, the cell will auto adjust to accommodate the length of the text entered.*

Misc. Notes for all Fields *(Enter applicable notes for specific field ID's below)*	
Sherman 20 NE 1/4	
Sherman 20 SE 1/4	Only that portion of the field with 3% or less slope will be used for emergency winter application, a 300' setback from the well will be used
Sherman 20 SW 1/4	
Sherman 20 NW 1/4	
Sherman 21 Turkey Barns	
Sherman 21 NW	
Sherman 17 N	
Sherman 17 S	
Sherman 19 NE 1/4	
Sherman 18 SE 1/2	
Sherman 17 SW 1/4	
Sherman 26 N	Only that portion of the field with 3% or less slope will be used for emergency winter application, a 300' setback from the well will be used
Sherman 29	
Morgan 4	
Morgan 9	
Sherman 35	
Sherman 26 SE	
Eden 18	


Neitzel - Eden 18
18-T111-R33 144 acres
Legend
Drainage Ditch
Field Boundry
Tile
Well
Tile Intake
Well
Tile Intake
340th Ave
Google Earth
© 2018 Google
N
2000 ft


Neitzel - Morgan 9
80 acres 9-T111-R34
Legend
Drainage Ditch
Field Boundry
Tile Intake
Tile Intake
Tile Intake
Google Earth
© 2018 Google
1000 ft
N


Neitzel - Sherman 26 SE, 35
80 acres 35-T112-R34
153 acres 26-T112-R34
Legend
Drainage Ditch
Field Boundry
Tile
Well
1000'
Doug Neitzel
Neitzel 26 SE 153 acres
Tile Intake
Well
11
Neitzel 35 80 acres
Tile intake
Google Earth
© 2018 Google
N
2000 ft



Google earth

miles 1
km 2

8 Well
2 - Tile Intake

Google earth feet km 5000 1

Sherman 26 N

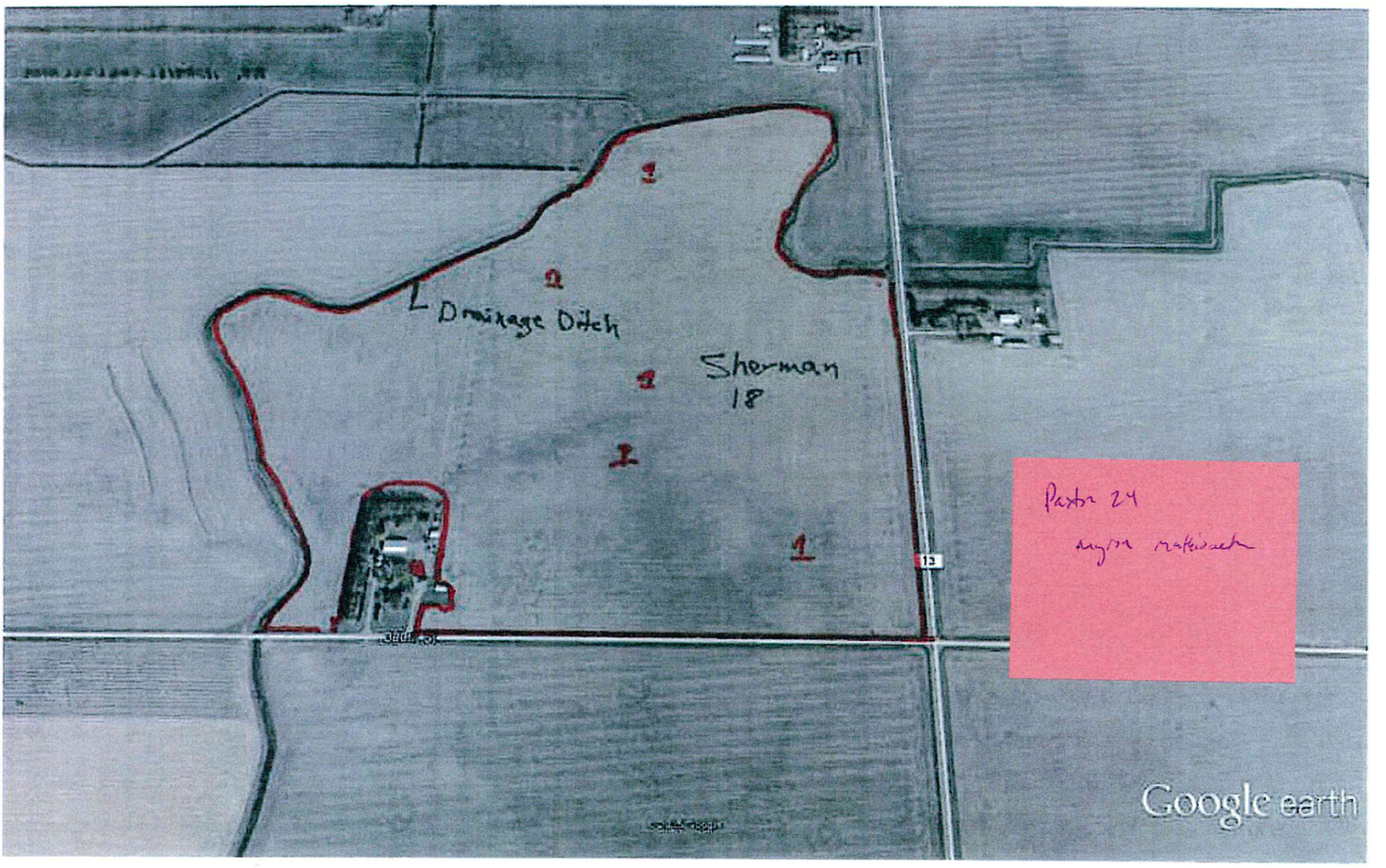
0 - Well
1 - Tile Intakes

Site of New 122' x 200'

Google earth

feet
km
5000
1

1 - Tile Inlets
Morgan 4



Google earth

feet
km
3000
1

G - Well

1 - Tile Intakes

DOUG NEITZEL

SWINE BARN

ENGINEERING REPORT

LOCATION:

SECTION 26, T 112 N, R 34 W
RENVILLE COUNTY, MINNESOTA

PREPARED BY:

NATHAN A. PESTA, P.E.
DEHAAN, GRABS & ASSOCIATES, LLC
4200 21st ST. SE, #101
MANDAN, ND 58554
701.663.1116

DATE:

APRIL 19, 2018

Neitzel, Doug
Redwood County, MN

April 19, 2018

ENGINEERING REPORT
TABLE OF CONTENTS

Section 1

SECTION 1:

A. NARRATIVE SUMMARY OF DESIGN

Doug Neitzel propose to obtain the required permits for construction of a new confinement swine finishing barn. The project site is in the southeast quarter of Section 26, T 112 N, R 34 W in Sherman township in Redwood County. The Project consists of a proposed 200' x 102'-total confinement, power ventilated barn to house finisher swine. The swine barn is designed to include concrete slatted floors, which allows manure to pass through to a 8-foot deep reinforced, poured-in-place concrete LMSA below the barn with a perimeter drain tile.

The new swine barn will house up to 3,300 finisher pigs. Manure will be land applied in the the Spring and the fall following crop harvest or prior to planting and applied to the fields as indicated in the Nutrient Management Plan.

PROFESSIONAL ENGINEER
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Printed Name: Nathan A. Pesta
Signature:
Date: 4/19/18 License #: 51627

Neitzel, Doug
Redwood County, MN

April 19, 2018

B. MANURE PRODUCTION CALCULATIONS

A. Facility Information

1. Type of Construction: ☐existing, ☒ proposed-new, or ☐expansion

2. Building Area: **Finisher Barn** (Proposed): *200.0* feet by *102* feet

3. Animal Capacity (maximum head counts and average weights) *3,300* head of *Finisher Pigs* @ *150* lbs, *495,000* lbs Total

Total Animal Weight (TAW): *495,000* lbs

B. Determine Minimum Storage Requirement

The Minimum Storage Requirement is the sum of the animal waste produced (or treatment volume for an anaerobic lagoon), plus the spillage and washwater, plus the pit recharge produced in 180 days. Generally, outside or contributing drainage area runoff is to be diverted. Runoff which is not diverted must be included in the storage requirement.

The following is completed for either Liquid Manure Storage or Anaerobic Lagoon

Liquid Manure Storage

Unit Waste Production (UWP) in cubic feet per day per 1,000 pounds of animal (210-VI-AWMFH, March 2008):

Cattle	Swine	Poultry	Other
☐Dairy = 1.3	☐ Nursery Pig = 1.4	☐ Layers = 0.9	☐ Horse = 0.8
☐ Beef = 1.0	☒ Grower/Finisher/Gilt = 1.1	☐ Broiler = 1.3	☐ Sheep = 0.6
	☐ Gestating Sow = 0.41	☐ Turkey = 0.7	
	☐ Lactating Sows = 0.97		
	☐ Boar = 0.3		

(a) Finisher Pig Manure produced: (TAW x (UWP x 180 days/1,000)) = *98,010* cubic feet / 1,000 lbs
(TAW x UWP for each type calculated separately and added to find total manure produced)

(b) Total Manure Volume Produced = *98,010* cubic feet
(TAW x UWP for each type calculated separately and added to find total manure produced)

(c) Spillage and Washwater generated in 180 days: *19,602* cubic feet
(20% of (h) is used

(d) Total Manure plus Spillage and Washwater, (h)+(l): *117,612* cubic feet

Minimum Overall Storage Requirement

(e) Minimum Storage Requirement (j) + (t): *117,612* cubic feet

PROFESSIONAL ENGINEER
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Printed Name: Nathan A. Pesta
Signature: Nathan A. Pesta
Date: 4/19/18 License #: 51627

Neitzel, Doug *April 19, 2018*
Redwood County, MN

C. WASTE STORAGE CALCULATIONS

A. Determine Storage Provided

Type of storage: ☐ Earthen Storage Pit ☐ Earthen Lagoon ☐ Concrete Tank
☒ Underfloor Concrete Pit ☐ Outside Concrete Pit
☐ Other (describe) _____

NOTE: A scale drawing, calculations and other supporting information will be included. Indicate the location of all diversions, diversion dimensions, and flow directions of surface runoff for the entire facility. Concrete pit or tank storage is assumed to be covered unless specified otherwise.

Rectangular Concrete Pit or Tank (capacity = length x width x depth@ Freeboard + Pumpout Pits (ft^3) - Columns (ft^3))

198.7 feet x *99.2* feet x *7.0* feet + *785* ft^3 - *896* ft^3 = *137,866* cubic feet (Finisher Barn)

= *137,866* **cubic feet TOTAL**

Earthen Storage Pit or Lagoon: Volume = [(4 x sideslope^2 x depth^3) / 3] + (sideslope x bottomlength x depth^2) + (sideslope x bottomwidth x depth^2) + (bottomwidth x bottomlength x depth)

Bottom Length: _____ Bottom Width: _____

Design Full Depth: _____feet, Overflow Depth: _____ feet

Side Slopes: _____:1 and _____, End Slopes: _____:1 and _____:1

Note: Inside slopes for earthen pits or lagoons will be at least 2:1.

Earthen Storage Pit or Lagoon Capacity: _____ cubic feet

TOTAL STORAGE PROVIDED: *137,866* cubic feet

NOTE: The Total Storage Provided will meet or exceed the Minimum Storage Requirement (item o) from Waste Productions Calculation

PROFESSIONAL ENGINEER
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Printed Name: Nathan A. Pesta
Signature: Nathan A. Pesta
Date: 4/19/18 License #: 51627

Section 2

Chosen Valley Testing, Inc.

Geotechnical Report:

Proposed Spring Valley Farms Hog Barn
Sec 26, Twp 112, Range 34
Sherman Township
Redwood County, Minnesota

Prepared for:

Doug Neitzel

March 16, 2018
CVT Project: 12790.18.MNS

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Chosen Valley Testing, Inc.

Geotechnical Engineering and Testing, 1410 7th Street NW, Rochester, Minnesota 55901, (507) 281-0968, fax (507) 289-2523

Doug Neitzel
41687 300th St.
Morton, MN. 56270

March 15, 2018

c/o Mr. Dave Plagge, PE
Anez Consulting
david@anezconsulting.com

Re: **Design Phase Geotechnical Evaluation**
Proposed Hog Barn
Sec 26, Twp 112, Range 34
Sherman Twp.
Redwood County, Minnesota
CVT Project: 12790.18.MNS

Dear Mr. Neitzel:

As authorized, we performed soil borings at the site of the proposed hog barns in Redwood County, Minnesota. This brief report summarizes the results of the borings.

A. Introduction

The intent of this report is to present our findings and describe the means used to collect the data. The data was collected for a specific purpose and may not be suitable for other purposes. We should be consulted before attempting to use the data for other uses. A complete and thorough review of the entire document, including its assumptions and its appendices, should be undertaken immediately upon receipt.

A.1. Scope

To provide data for analysis, a total of two penetration test borings were performed. The borings were drilled to depths of about 14.9 feet. Our engineering scope consisted of providing geotechnical recommendations for the proposed structure.

A.2. Boring Locations

The boring locations were selected and initially staked in the field by the client. Due to subsequent re-positioning, we were instructed to move both borings 50 feet south of the staked locations. The Soil Boring Location Sketch in the Appendix shows the approximate locations as drilled and was based on

superposing the project layout onto a satellite view of the site using Google Earth software.

Ground surface elevations were provided by Anez Consulting and are indicated on the Log of Boring sheets in the Appendix.

A.3. Geologic Background

A geotechnical report is based on subsurface data collected for the specific structure or problem. Available geologic data from the region can help interpretation of the data and is briefly summarized in this section.

Geologic maps indicate the soils in the area are dominated by glacial stream sediments consisting of silty sands and gravels. Bedrock is understood to be more than 100 feet below the surface and consist of gneiss and foliated granite.

B. Subsurface Data

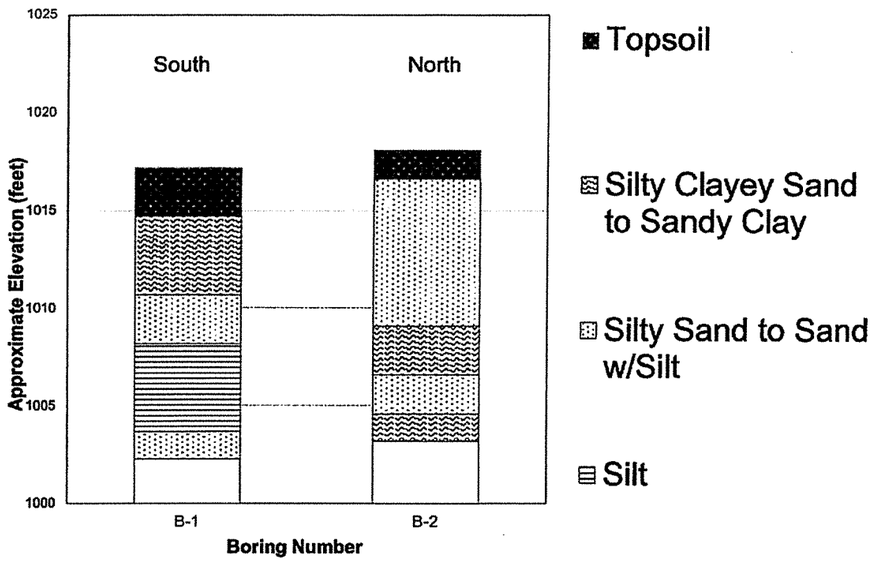
The borings were performed using penetration test procedures (Method of Test D1586 of the American Society for Testing and Materials). This procedure allows for the extraction of intact soil specimen from deep in the ground. With this method, a hollow-stem auger is drilled to the desired sampling depth. A 2-inch OD sampling tube is then screwed onto the end of a sampling rod, inserted through the hole in the auger's tip, and then driven into the soil with a 140-pound hammer dropped repeatedly from a height of 30 inches above the sampling rod. The sampler is driven 18 inches into the soil, unless the material is too hard. The samples are generally taken at 2½ to 5-foot intervals. The core of soil obtained was classified and logged by our drilling personnel at the site and a representative portion was then sealed and delivered to our laboratory for further review.

B.1. Strata

At the surface, the borings encountered around 1 ½ to 2 ½ feet of topsoil materials. The topsoil consisted primarily of slightly organic sandy lean clay.

The soils below the topsoil in both borings were dominated by alternating layers of clayey soils (silty clayey sands to sandy lean clays) and silty sands or sands with silt. The southern boring met a layer of silt at depths of about 9 to 13 ½ feet.

The soil boring data have been summarized in the following cross-section. Please refer to the Log of Boring sheets in the Appendix for more detailed information.



B.2. Penetration Test Results

Penetration Test Results: The number of blows needed for the hammer to advance the penetration test sampler is an indicator of soil characteristics. The results tend to be more meaningful for natural mineral soils, than for fill soils. In fill soils, density tests are more meaningful.

Penetration resistance values ("N" Values) ranging from about 0 to 12 blows per foot (BPF) were recorded in the silty to silty clayey sands, indicating they were very loose to medium dense. The low value was at the 2 ½ foot depth in the north boring, and is believed to be the result of soil still being in suspension after recently thawing.

N Values recorded in the silt and clay ranged from 5 to 6 BPF, indicating they were rather soft to medium.

A key to the descriptors used to qualify the relative density of soil (such as *soft, stiff, loose,* and *dense,*) can be found on the Legend to Soil Description in the Appendix.

A pocket penetrometer was used to provide additional data on the compressive strength of the cohesive soils. The clays returned a value of ¾ to 1 ¼ tons per square foot (tsf).

B.3. Groundwater Data

During drilling, the drillers may note the presence of moisture on the sampler, in the cuttings, or in the borehole itself. These findings are reported on the Logs of Boring. Because water levels vary with weather, time of year, and other factors, the presence or lack of water during exploration is subject to interpretation and is not always conclusive.

Water and/or water-bearing soils were observed in both of the borings at depths of about 10 feet below the surface. These depths roughly correspond to elevation 1010 on the datum used to locate the borings.

C. Design Data

Because each structure has a different loading configuration and intensity, different grades, and different structural or performance tolerances, the results of a geotechnical exploration will mean different things for different facilities. If the design of the facility changes, we should be contacted to discuss the possible implications of the changes. Without a chance to review such changes, the recommendations of the soils engineer may no longer be valid or appropriate.

The proposed project consists of the construction of a hog barn with underlying manure storage structure. We assumed that the underlying manure pits will extend about 6 feet into the ground.

D. Analysis

D.1. Bedrock Considerations

According to the Minnesota Rules Chapter 7020, manure in a concrete-lined pit must be kept at least 5 feet above soluble bedrock, with this rule further dependent on pit size, the use of additional liners, and other karst factors. Bedrock was not encountered during our exploration and is expected to be more than 100 feet below the surface.

The County Feedlot officer or Minnesota Pollution Control Agency (MPCA) should be contacted to determine the type of preparations needed for this facility in consideration of the several factors involved. We do not anticipate the need for a secondary liner since the estimated manure pit bottom elevation is over 100 feet above bedrock.

D.2. Groundwater/De-Watering

Basin bottoms must be maintained above the water table or a drain tile should be installed to maintain water levels below the basin. Again, water and saturated soils were encountered about 7 feet below the surface at both borings. This is very close to the anticipated bottom of the structure. A drain tile is recommended as a precaution against water problems and to prevent excess moisture from collecting behind the walls.

D.3. Subgrade

The manure pits are assumed to be constructed about 6 feet or less below final grades. The sands and silty to clays sands encountered at these grades are considered generally suitable for support. Because of the proximity to the water table, the bottom is expected to be very unstable. Excavations should be performed using a backhoe with a smooth-lipped bucket in order to limit disturbance to the soils and to produce a smooth surface for placing of slabs. Construction equipment should not be allowed to drive directly on the bottom soils or instability will likely result.

D.4. Bearing Capacity and Settlement

Based on the boring data and the assumed pit bottom elevation, the foundation of the proposed manure structures are expected to bear on sands and silty to clayey sands. We recommend sizing footings for a bearing capacity up to 3,000 psf. This value assumes of factor of safety of 3 against shear failure. Based on the data and the assumed loads, total settlement of the barn is expected to be less than 1 inch and likely ½ inch or less.

D.5. Backfilling and Lateral Earth Pressure

The excavated soils are considered generally expected to be suitable for backfilling around the structures. To limit perimeter settlement as well as infiltration of water into the backfill, we recommend compacting all fill to 95% of its maximum standard Proctor density. The ground surface around the structure should be sloped away from the buildings for drainage reasons and to prevent undue pressures on the foundation walls.

Earth pressures on the walls will depend on the soil used, its compaction, drainage and slopes around the structure, along with the allowable deformation of the walls. We suggest using an equivalent fluid pressure of 80 pcf for preliminary design.

D.6. Construction Phase Testing

The MPCA requires construction testing and inspection on all manure storage structures. Typical requirements would include:

- Evaluation of the natural soils after topsoil stripping and before placing any fill
- Compaction testing on fills used for embankments, subgrades, etc, and
- Review of the excavation for karst features.

Events of the last few years have intensified requirements for testing and inspection of the concrete slabs, footings, and walls of the manure storage structures. Testing of the concrete for air content and compressive strength are becoming normal requirements, as well as documentation of reinforcement, control joints, water stops, drain tile, etc. Although our firm provides such services, the necessity and extent of such services will need to be determined by consultation between the design consultant and the

appropriate regulatory services.

E. Level of Care

The services provided for this project have been conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in this area, under similar budget and time constraints. This is our professional responsibility. No other warranty, expressed or implied, is made.

F. Certification

COLBY T. VERDEGAN LICENSED PROFESSIONAL ENGINEER 18983 STATE OF MINNESOTA	I hereby certify that this report was prepared by me or under my direct supervision, and that I am a duly registered engineer under the laws of the State of Minnesota. Colby T. Verdegan, PE Geotechnical Engineer Registration Number 18983 Date: March 15, 2018

Appendix

Soil Boring Location Sketch

Log of Boring # 1-2

Legend to Soil Description

C V T

Chosen Valley Testing, Inc.

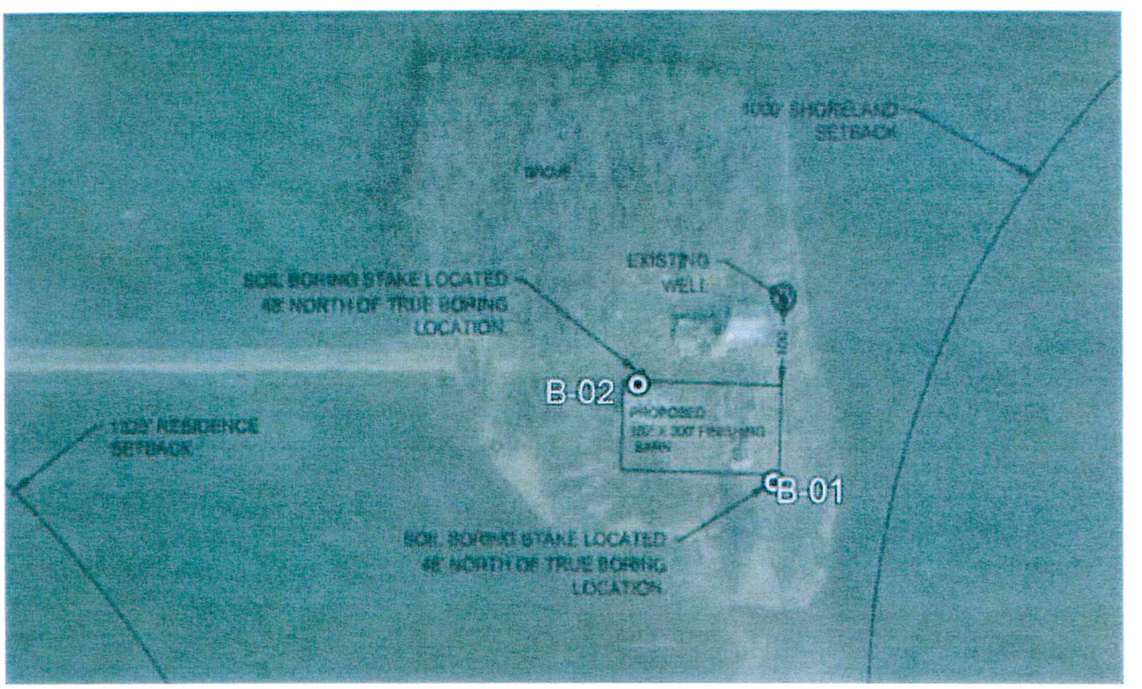
Legend

Boring Locations

Boring Location Sketch

Neitzel Hog Barn
Saratoga Ave.
Sherman Twp., Minnesota
12790.18.MNS

N



LOG OF BORING

CHOSEN VALLEY TESTING

PROJECT: 12790.18.MNS Design Phase Geotechnical Evaluations Neitzel Hog Barn Saratoga Ave. Sherman Twp., Minnesota	BORING: **B-02** LOCATION: See attached sketch. DATE: 2/22/18 SCALE: 1" = 3'

Elev.	Depth	ASTM D2487 Symbol	Description of Materials (ASTM D2488)	BPF	WL	Tests or Notes
1018.1	0.0	OL	**TOPSOIL**, Slightly Organic Sandy Lean Clay, trace Organics, black, wet.			
1016.6	1.5	SP SM	**POORLY GRADED SAND with SILT**, fine-to-medium grained, trace Gravel, brown, moist to 7 feet then water-bearing, very loose to loose. (Glacio-Fluvium)	<1		MC=13%
				4		MC=13%
				7	▽	MC=23% 200 wash = 8% passing
1009.1	9.0	CL	**SANDY LEAN CLAY**, trace Gravel, gray, wet, rather soft. (Glacial Till)	5		PP=1.25 tsf MC=25%
1006.6	11.5	SM	**SILTY SAND**, fine-to-medium grained, seams of clayey sand, brown, wet, very loose. (Glacio-Fluvium)	5		MC=27%
1004.6	13.5	CL	**SANDY LEAN CLAY**, trace Gravel, gray, wet, medium. (Glacial Till)	6		PP=0.75 tsf MC=25%
1003.2	14.9		End boring. Water was observed at 7 feet after during drilling. Boring caved in at 5 feet after auger removal. Boring sealed upon completion.			

LOG 12790.18.MNS NEITZEL HOG BARN SHERMAN TWP. MN 12790.18.GPJ AND STANDARD PLATES FOR EVALUATION AND DESCRIPTIVE TERMINOLOGY.)

Minnesota Unique Well Number

822095

County Redwood
Quad Morgan
Quad ID 78B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
Minnesota Statutes Chapter 1031

Entry Date 02/02/2018
Update Date 04/13/2018
Received Date 12/11/2017

Well Name	Township	Range	Dir Section	Subsection
NEITZEL, DOUG	112	34	W 26	CACBAA

Elevation 1013.8 Elev. Method LiDAR 1m DEM (MNDNR)

Address
Contact 41687 300TH ST MORTON MN 56270
Well MN

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SOIL	0	5		SOFT
CLAY	5	27	YELLOW	SOFT
CLAY	27	91	BLUE	HARD
SAND-MUCKY CLAY	91	120	BLUE	SOFT

Remarks
CASING SPECIFICATION-SDR 21
NEAREST SOURCE OF CONTAMINATION-OLD WELL

Well Depth 120 ft. | Depth Completed 120 ft. | Date Well Completed 10/10/2017
Drill Method Non-specified Rotary | Drill Fluid Water
Use domestic | Status Active
Well Hydrofractured? Yes ☐ No ☒ From To
Casing Type Single casing | Joint
Drive Shoe? Yes ☐ No ☒ | Above/Below

Casing Diameter	Weight	Hole Diameter
5 in. To 120 ft.	200 lbs./ft.	8.5 in. To 120 ft.

Open Hole From ft. To ft.
Screen? ☒ Type telescoping Make JOHNSON

Diameter	Slot/Gauze	Length	Set	
5 in.	10	10 ft.	ft.	ft.

Static Water Level
46 ft. land surface Measure 10/10/2017

Pumping Level (below land surface)
100 ft. 2 hrs. Pumping at 8 g.p.m.

Wellhead Completion
Pitless adapter manufacturer MAASS Model
☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☒ Yes ☐ No ☐ Not Specified

Material	Amount	From	To
bentonite	8 Sacks	ft. 80	ft.

Nearest Known Source of Contamination
300 feet East Direction Other Type
Well disinfected upon completion? ☒ Yes ☐ No

Pump ☒ Not Installed Date Installed
Manufacturer's name
Model Number HP Volt
Length of drop pipe ft Capacity g.p. Typ

Abandoned
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

Variance
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

Miscellaneous
First Bedrock Aquifer
Last Strat Depth to Bedrock ft
Located by Minnesota Department of Health
Locate Method GPS SA Off (averaged)
System UTM - NAD83, Zone 15, Meters X 348903 Y 4926488
Unique Number Verification Info/GPS from data Input Date 11/07/2017

Angled Drill Hole

Well Contractor
Marcus Well Drilling, Inc. 1307 MARCUS, R.
Licensee Business Lic. or Reg. No. Name of Driller

Minnesota Unique Well Number

830601

County Redwood
Quad Morgan
Quad ID 78B

MINNESOTA DEPARTMENT OF HEALTH

WELL AND BORING REPORT

Minnesota Statutes Chapter 1031

Entry Date 02/02/2018
Update Date 04/13/2018
Received Date 12/11/2017

Well Name	Township	Range	Dir	Section	Subsection
NEITZEL, DOUG	112	34	W	26	CBCACA

Elevation 1013.8 Elev. Method LiDAR 1m DEM (MNDNR)

Address

Contact 41687 300TH ST MORTON MN 56270

Well N/A MN

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
SOIL	0	1		SOFT
CLAY	1	10	YELLOW	SOFT
CLAY	10	111	BLUE	HARD
SAND	111	121	BLUE	SOFT

Remarks

CASING SPECIFICATION-SDR 21
NEAREST SOURCE OF CONTAMINATION-OLD WELL

Well Depth 121 ft. | Depth Completed 121 ft. | Date Well Completed 10/24/2017

Drill Method Non-specified Rotary | Drill Fluid Water

Use domestic | Status Active

Well Hydrofractured? Yes ☐ No ☒ From To

Casing Type Single casing | Joint

Drive Shoe? Yes ☐ No ☒ | Above/Below

Casing Diameter	Weight	Hole Diameter
5 in. To 121 ft.	200 lbs./ft.	8.5 in. To 121 ft.

Open Hole From ft. To ft.

Screen? ☒ Type telescoping Make JOHNSON

Diameter	Slot/Gauze	Length	Set
5 in.	10	10 ft.	111 ft. 121 ft.

Static Water Level

40 ft. land surface Measure 10/24/2017

Pumping Level (below land surface)

51 ft. 4 hrs. Pumping at 30 g.p.m.

Wellhead Completion

Pitless adapter manufacturer MAASS Model

☐ Casing Protection ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? ☒ Yes ☐ No ☐ Not Specified

Material	Amount	From	To
bentonite	11 Sacks	ft.	100 ft.

Nearest Known Source of Contamination

1000 feet East Direction Other Type

Well disinfected upon completion? ☒ Yes ☐ No

Pump ☒ Not Installed Date Installed

Manufacturer's name

Model Number HP Volt

Length of drop pipe ft Capacity g.p. Typ

Abandoned

Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

Variance

Was a variance granted from the MDH for this well? ☐ Yes ☒ No

Miscellaneous

First Bedrock Aquifer

Last Strat Depth to Bedrock ft

Located by Minnesota Department of Health

Locate Method GPS SA Off (averaged)

System UTM - NAD83, Zone 15, Meters X 348550 Y 4926458

Unique Number Verification Info/GPS from data Input Date 11/07/2017

Angled Drill Hole

Well Contractor

Marcus Well Drilling, Inc. | 1307 | MARCUS, R.

Licensee Business | Lic. or Reg. No. | Name of Driller

Minnesota Well Index Report | **830601**

Printed on 04/19/2018
HE-01205-15

Section 3

SECTION 3. TECHNICAL SPECIFICATIONS

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PROFESSIONAL ENGINEER
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Printed Name: Nathan A. Pesta
Signature:
Date: 4/19/18 License #: 51627

f. INSTALLATION OF IMBEDDED ITEMS
g. INSPECTION
h. JOINTS
i. CONCRETE INSTALLATION
j. MISCELLANEOUS CONCRETE ITEMS
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   f. SEWER LINE ROUTES
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4. CONCRETE

PROFESSIONAL ENGINEER
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Printed Name: Nathan A. Pesta
Signature: Nathan A. Pesta
Date: 4/19/18 License #: 51627

E. QUALITY ASSURANCE PROGRAM

1. OWNER
2. LINES OF AUTHORITY
3. SPECIALIZED SKILLS OR WORK QUALIFICATIONS
4. OBSERVATION AND OVERSIGHT DUTIES
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A. EARTHEN STRUCTURES

1. SAFETY

The contractor is solely responsible for being aware of and meeting all safety requirements for work on this site. These may include but are not limited to requirements set forth by OSHA, the State or the County. The contractor is also responsible for locating any underground power lines, pipelines, phone lines, etc. in the area of excavation. This shall include notifying the South Dakota One-Call System at least two days prior to the start of excavation activities.

If at any time, the contractor feels that due to site conditions, the construction techniques outlined in the Plans and Technical Specifications are not safe, he shall immediately stop work and contact the engineer, and an alternative method shall be determined.

2. SITE PREPARATION

The foundation and borrow area of all proposed earthwork areas shall be cleared of all old equipment, old buildings, trees, stumps, roots, brush and boulders and stripped of all sod and topsoil. All channel banks and sharp breaks shall be sloped no steeper than 1:1. All topsoil containing substantial organic matter shall be removed and stockpiled. The surface of the foundation area will be thoroughly scarified to a minimum depth of 4 inches before placement of compacted backfill. All drainage channels crossing fill areas shall be cleaned and widened to accommodate compaction equipment. Such channels shall be backfilled with suitable material as specified for compacted earthfill and compacted to the same specifications as the overlying fill.

All waste material shall be buried away from the fill area.

3. EXCAVATION

Unless specified by the Engineer, no borrow material shall be taken from areas outside the building pad area or designated borrow areas except for excavation of ditches or other structures shown on the plans or for the construction of building pads. All materials undesirable for fill purposes shall be stripped from the borrow areas and either stockpiled for later use as topsoil or disposed of properly. The building pad area shall be excavated to the lines and grades as shown on the plans. Any borrow areas outside the building pad area shall be graded and left in a well-drained condition.

The contractor shall be responsible for the removal of excess water from any portion of the job site and all necessary equipment. In addition, the contractor is responsible for ensuring that all applicable permits have been obtained prior to any dewatering. Pumping of ponded water, if necessary during construction, shall be conducted in a timely manner to prevent saturation of large areas of the borrow pit and outletted to an acceptable drainage course as determined by the Engineer.
Excavation is considered integral to fill placement, therefore payment will be made for

only one.

4. BUILDING PAD /DRIVEWAY/ SERVICE ROAD

Earthfill shall be placed to the lines and grades as shown on the plans on all areas for proposed building construction. Compaction shall be performed to each 8 inch loose fill lift by means of a minimum of 6 passes of a standard sheepsfoot roller so that the sheepsfoot roller walks out of each lift to ensure the area has been uniformly compacted; or the compaction shall be performed to each lift by means of controlled travel of loaded rubber-tired compaction equipment or standard sheepsfoot roller so that the fill area has been uniformly compacted to 95% Standard Proctor Density (ASTM D-698) as determined by a testing lab approved by the Engineer. Each pass of soil loading and compaction equipment should travel parallel to the length of the buildings. The moisture content at the time of compaction for cohesive soils shall be consistent with the requirements of compaction at the optimum moisture content.

If Proctor Density tests are to be performed on-site, a minimum of 2 field density tests per 8 inch lift per building site shall be performed during construction to verify compaction quality or as determined by the Engineer based on compaction results. The compaction tests are to be paid for by the Owner. Nuclear or other standard field density test methods are acceptable for this project.

Grade tolerance on building site earthwork shall be -0.10 to +0.10 ft.

5. TANK BACKFILL

Do not backfill against concrete walls until the concrete has cured at least 7 days and all slat and slab floors and beams are in place to properly brace the walls. Exercise caution when backfilling to bring up the level uniformly on all sides of tanks and pits. Keep all heavy equipment and rollers back from the pit and tank walls a distance equal to the depth of the fill.

6. GRAVEL

This item shall consist of performing the work necessary supply and place gravel for access road areas to the locations, dimensions and grades shown on the drawings. Final elevation tolerances are + 0.1'. Contractor shall have the equipment and ability to transfer elevations from construction stakes and blue tops.

(1) All gravel earthfills shall have a workmanlike finish (i.e. smoothed and grades with proper equipment).

(2) The fill materials, noted in drawings, for construction access roads shall be:
  (a) Low Duty Gravel:
    (i) Gravel shall have a uniform range of sizes, with no more than 15% passing the No. 200 sieve and stones no larger than 2"
    (ii) Gravel shall be compacted in 6" lifts by 2 passes over entire surface with a vibratory roller or rubber tire type compactor.
    (iii) Gravel shall be leveled and graded with a road grader.

(b) Heavy Duty Gravel:
  (i) Gravel shall have a uniform range of sizes, with no more than 10% passing the No. 200 sieve and shall not have stones larger than 1 inch. (Class 5)
  (ii) Gravel shall be compacted in 6" lifts by 2 passes over entire surface with a vibratory roller or rubber tire type compactor.
  (iii) Gravel shall be leveled and graded with a road grader.

(3) All organic material and topsoil shall be removed prior to areas with fill as shown on drawings and replaced with compacted mineral earthfill. These areas shall be graded, roller compacted, and smoothed prior to geotextile and fill placement. These areas shall be brought up to top of sub-grade in low lying areas with earthfill material (mineral soils; not topsoil or organic materials).

(4) Gravel material shall be underlain with a woven geotextile for the Heavy Duty Gravel.

(5) The access road shall be shaped as shown on drawings.

7. GEOTEXTILE

In designated areas, heavy class gravel will be underlain by a woven geotextile. The geotextile will be installed as follows:
The geotextile shall be joined by overlapping a minimum of 24 inches (unless otherwise specified) and secured against the underlying foundation material. Securing pins, approved and provided by the geotextile manufacturer, shall be placed along the edge of the panel or roll material to adequately hold it in place during installation. Pins shall be steel or fiberglass formed as a **U, L,** or **T** shape or contain "ears" to prevent total penetration through the geotextile. Steel washers shall be provided on all but the U-shaped pins. The upstream or upslope geotextile shall overlap the abutting downslope geotextile. At vertical laps, securing pins shall be inserted through the bottom layers along a line through approximately the mid-point of the overlap. At horizontal laps and across slope labs, securing shall be inserted through the bottom layer only. Securing pins shall be placed along a line about 2 inches in from the edge of the placed geotextile at intervals not to exceed 12 feet unless otherwise specified. Additional pins shall be installed as necessary and where appropriate to prevent any undue slippage or movement of the geotextile. The use of securing pins will be held to the minimum necessary. Pins are to remain in place unless otherwise specified.

Should the geotextile be torn or punctured, or the overlaps or sewn joint disturbed, as evidenced by visible geotextile damage, subgrade pumping, intrusion, or grade distortion, the backfill around the damaged or displaced area shall be removed and restored to the original approved condition. The repair shall consist of a patch of the same type of geotextile being used and overlaying the existing geotextile. When the geotextile seams are required to be sewn, the overlay patch shall extend a minimum of 1 foot beyond the edge of any damaged area and joined by sewing as required for the original geotextile except that the sewing shall be a minimum of 6 inches from the edge of the damaged

geotextile. Geotextile panels joined by overlap shall have the patch extend a minimum of 2 feet from the edge of any damaged area.

The geotextile shall be unrolled in a direction parallel to the roadway centerline in a loose manner permitting conformation to the surface irregularities when the roadway fill material is placed on its surface. In no case shall material be dropped on uncovered geotextile from a height of more than 5 feet. Unless otherwise specified, the minimum overlap of geotextile panels joined without sewing shall be 24 inches. The geotextile may be temporarily secured with pins recommended or provided by the manufacturer, but they shall be removed before the permanent covering material is placed.

Woven geotextile shall have a minimum tensile strength of 120 lbs., conforming to ASTM Specification D 4632 (grab test method) and shall have an apparent opening size (AOS) ranging between 40 and 100 U.S. Standard sieve, conforming to ASTM Specification D 4751.

8. CULVERTS

The culvert structures shall be installed to the lines and grades as shown on the plans. The culverts shall be sized as according to the plans and they shall be HDPE smooth lined corrugated high density polyethylene pipe or equivalent. Fittings and appurtenances shall be made of the same material as the pipe.

The culverts shall be bedded with a minimum of 3 inches of coarse grained material (sand, gravel or crushed rock) with a maximum diameter size of 1 inch. Initial backfill for 12 inches on both sides of the pipe and 12 inches above the top of the pipe shall consist of the same coarse grained material as the bedding. Initial backfill shall first be worked and compacted under the haunches of the pipe to provide continuous support up to the pipe centerline in layers not more than six inches thick. The remainder of the initial backfill shall then be placed in layers not more than six inches thick. Care must be taken during initial backfill to ensure that tamping or vibratory equipment does not deform or displace the culvert. Final backfill shall consist of the remaining earthfill from the top of the initial backfill to the ground surface, including mounding for settlement. Final backfill shall be free of debris, rocks or other objects with a three inch nominal diameter or larger.

9. DRAIN TILE

Perimeter tile around concrete manure storage structures shall be installed before backfill. Drain tile shall be heavy duty perforated corrugated polyethylene plastic agricultural drain pipe, conforming to ASTM F405 or F667 and SCS 606. Plow type machines shall not be used for installing perimeter tile near the area of proposed manure storage structures, because the plow will loosen the soil under the wall footing. Additionally Form-A-drain can be used instead of drain tile with the end of the form-a-drain connected to a 4" pipe that empties to a

capped manhole.

10. TOPSOIL

All pond cut and fill areas above the maximum operating elevation, and the entire back slope of the embankment, as well as the top and outside slopes of all settling basins and diversion channels shall be covered with a minimum of 6 inches of topsoil. The topsoil shall be placed during the normal fill operation, so no additional payment will be made for same. Topsoil shall be worked and bonded to the underlying fill and compacted to the same specifications as the underlying fill. All borrow areas should also be spread with 6 inches of topsoil before the contractor leaves the site.

11. SEEDING

All pond cut and fill areas above the maximum operating elevation, and the entire back slope of the embankment, as well as the top and outside slopes of the settling basins and the diversions in their entirety shall be seeded to perennial grass as specified by the Natural Resource Conservation Service recommended guidelines for seeding in the area of the state the project is located. All borrow areas should be similarly seeded unless their intended land use dictates otherwise (i.e. farmland).

12. CLEAN UP

During construction the Contractor shall keep the work site, areas adjacent to the work site and access roads in an orderly condition. Any spillage or debris resulting from the Contractor's operations shall be immediately removed. Upon completion, all debris, etc. shall be removed from the area. All access roads, other than public, shall be graded, smoothed over and left in a well-drained condition prior to equipment removal.

B. CONCRETE DETAILS

1. SUBGRADE PREPARATION

Site grading work is to be done to provide accurate and compacted earth and subgrades where practical for all building sites. However, some amount of fine excavation and/or placement of subgrade fill is to be expected. Material used for subgrade backfill shall be non-settling, clean sand or gravel or suitable earthfill with adequate compactive effort utilized wherever depths demand same. Sub-grade fill gravel will be a pay item but will not be utilized to avoid accurate grading and proper compaction of sub-grade nor as a substitute for inaccurate excavation of pits, gutters, manholes, sumps and other subterranean features.

2. CURING

All concrete shall be protected from premature or too rapid curing by the use of covering, the spraying of compounds or the frequent and sustained wetting with water.

3. FORMING

All forms shall be of a type and quality suited to the finished dimensions and grades to be provided. Forms shall be at the proper elevation, true to line, plum and square as required. All forms shall be securely anchored to maintain concrete alignment and slope.

C. SUPPLEMENTAL CONCRETE SPECIFICATIONS

1. FORMWORK

a. CONCRETE FORMS

1) Boards, plank, plywood or metal forms: Use where concrete is not exposed.
Use APA - BB Plyform (Class I or II acceptable)

2) Form Coating: Non-staining, shall be suitable for the type of form material used.

3) Form Ties, Spreaders and Other Form Accessories: Commercial brands subject to the approval of the Engineer. Wire ties shall not be used. Arrangement and spacing of ties as approved by Engineer.

b. CONCRETE FORMWORK CONSTRUCTION

1) Construct forms to shapes, lines and dimensions called for on Drawing, true to line, plumb and level with joints mortar tight. Provide proper bracing and supports of sufficient strength to carry, without appreciable deflection and with absolute safety, the dead load of concrete as a liquid together with live loads of men, equipment and materials.

Provide sufficient forms so that work can be carried out without delay. Build forms of materials of sufficient strength to hold concrete without bulging or sagging between supports. For concrete to be exposed to the weather, the edges shall be glued or otherwise sealed to prevent loss of any of the matrix.

2) Edge Forms and Screeds: Set edge forms and screeds accurately to produce the designed elevations, slopes in the finished surfaces. Provide required slope to drains.
3) Securely place in forms all accessories specified and shown on the drawings. This includes anchor bolts, anchoring items, reglets, guards, curb angles, dock nosings, etc. These items are furnished by others. Sleeves, etc. for mechanical and electrical will be furnished and set by Contractor requiring same. Cooperate with all trades for installation of inserts.
4) Openings: Form all openings, chases, recesses, etc. required by the design.
5) Joints: Provide expansion and contraction joints where shown on the drawings. Provide construction joints as detailed and where required.

Construction joints in accordance with ACI 301.

6) Cleaning and Coating: Sweep, clean and coat forms before reinforcing is placed.
7) Wetting Forms: In hot weather, wet down forms with hose immediately before placing concrete.
8) Formwork not supporting concrete may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operation, and provided that curing and protection operations are maintained.
9) Form facing material may be removed four days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.
10) Re-Use of Forms: Clean and repair surfaces of forms to be re-used in the Work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork. When forms are reused for successive concrete placement, thoroughly clean surfaces, remove fines and laitance and tighten forms to close all joints. Align and secure joints to avoid offsets.

2. REINFORCEMENT

a. MATERIALS

1) Standard Bars: New Billet stock, deformed, ASTM A615, grade 60 or as shown on the Drawings. Free of mill scale, excessive rust or other coating that would prohibit proper bond with concrete.
2) Welded Steel Wire Fabric: ASTM A185.
3) Tie Wire: FS QQ-w-461, annealed steel, blank, 16 gauge minimum.
4) Welding Electrodes: A WS A.5.1, low hydrogen, E70 series.
5) Supports and Accessories: Conform to ACI 315. Where concrete surface is exposed to view or weather, or to be painted, use plastic supports. Individual and continuous slab bolsters and chairs shall be of a type to compliment the various conditions encountered.

b. FABRICATION

1) Shop fabricate to size, dimension and shape shown on approved shop drawings and within tolerances specified in ACI 301 and in accord with CRSI Manual of Standard Practice.
2) After fabrication, sort, bundle and metal tag reinforcement before delivery to the job site.

c. PLACEMENT

1) Place concrete reinforcement in accordance with the approved placing drawings, and CRSI 63 (Reinforcing Bars), and CRSI 65 (Bar Supports), and in accordance with tolerances specified in ACI 301.
2) Place only reinforcement that is free of mill scale, excessive rust, or other coating that would prohibit proper bond with the concrete.
3) Support reinforcement and guard against displacement during concreting.
4) Continue reinforcement through construction joints but do not continue reinforcement through expansion joints unless so detailed.
5) Move within allowable tolerances to avoid interference with other reinforcing steel, conduits or embedded items.
6) Do not heat, bend or cut bars without concurrence of the Engineer.
7) Tie securely or use splice devises to prevent displacement of splices during concrete placement
8) Install wire fabric in longest practicable length. Lap adjoining pieces one full mesh minimum, and lay splices with 16 gauge wire. Do not make end laps midway between supporting beams or directly over beams of continuous structures. Offset end laps in adjacent widths to prevent continuous laps.

d. FIELD QUALITY CONTROL

1) Inspection of Forms and Reinforcing: At least 24 hours prior to placing of concrete notify the Engineer so that he may inspect forms and reinforcing in place and secure his approval for the placement of concrete.
2) Allow no placing of concrete until the Engineer has inspected concrete reinforcement in place in forms.

e. CONCRETE COVER

Thickness	Condition of Concrete in Use
3"	Slabs not exposed to ground or weather
1"	Walls not exposed to ground or weather
1-2"	Beams not exposed to ground or weather
2"	Concrete exposed to earth
2"	Concrete placed against earth

3. CAST-IN-PLACE CONCRETE

a. SUBMITTALS

1) Mix Design: Submit reports in duplicate of all concrete mix design and aggregate reports to the Engineer for approval at least five days prior to pouring concrete.
2) Test Reports: Submit information copies in duplicate of all test reports

to the Engineer.

3) Material Certificates: Provide materials certificates in lieu of materials laboratory test reports only when permitted by the Engineer. Material certificates shall be signed by the material manufacturer and the Contractor, certifying that each material item complies with, or exceeds, the specified requirements.
4) Ready-mix delivery tickets: ASTM C94-74.

b. CONCRETE MATERIALS

1) Concrete: Ready-mixes per ASTM C94-74
   a) Portland Cement: ASTM C 150, Type 1, only one brand of cement shall be used throughout the work. The Contractor shall be responsible for whatever steps are necessary to insure that no visual variations in color will result in exposed concrete, and shall place on order a sufficient quantity of this cement to complete the concrete work.
2) Aggregates: ASTM C 33
   a) Maximum sizes: Footings 1-2"
      All other concrete 2"
      Local aggregates not complying with ASTM C 33 but which have shown by special test or actual service to produce concrete of adequate strength and durability may be used when acceptable to the Engineer.
   b) Fine Aggregate: Clean, sharp, natural sand free from loam, clay lumps or other deleterious substances.
   c) Dune sand, bank-run sand and manufactured sand are not acceptable.
   d) Maximum Aggregate Size: Not larger than 1/5 of the narrowest dimension between sides of forms, a of the depth of slabs, nor 2" of the minimum clear spacing between individual reinforcing bars or bundles of bars. These limitations may be waived if, in the judgement of the Engineer, workability and methods of consolidation are such that concrete can be placed without honeycomb or voids.
   e) Water: Clean, free of deleterious amounts of acids, alkalies or organic materials.
   f) Admixtures:
      Air Entraining Admixture: Conform to ASTM C 260.

c. CONCRETE RELATED MATERIALS

1) Joint Material: Pre-formed, non-extruding type ASTM C 1751.
2) Curing Compounds
   a) Curing and Sealing Compound: The compound shall be a clear styrene acrylate type, 30% solids content minimum, and have

test data from an independent testing laboratory indicating a maximum moisture loss of 0.030 grams per sq. cm. when applied at a coverage rate of 300 sq. ft. per gallon. Compound shall be ASuper Floor Coat@ or ASuper Pliocure@ by the Euclid Chemical Company or equivalent.

b) Slab Joint Key: Pre-formed asphalt hardboard, Brock-White 1/4".

c) Vapor Barrier: Sisalkraft Moistop.

d) Absorptive Cover: Burlap cloth made from jute or Kenaf, weighing approximately 8 ounces per square yard, complying with AASHD H182, Class 3.

e) Bonding and Repair Materials:
Bonding Materials: The compound shall be a polyvinyl acetate, rewettable type, AEuco Weld@ by The Euclid Chemical Company or AWeldcrete@ by The Larsen Company.

d. CONCRETE MIXING

1) Mix Design:

a) Employ the services of an independent testing laboratory to test the proposed aggregate and design mixes for each type of concrete required.

b) Make available to the testing agency all materials required for the concrete mix design as well as for qualitative acceptance tests. Present materials acceptance tests, trial mix date and recommended job mixtures to the Engineer at least five working days prior to the proposed beginning concreting.

c) Sample and test each type of aggregate in accordance with applicable ASTM procedures.

d) Design mixes in accordance with ACI 301, Method 2.

e) Deliver no materials to the site until the samples have been approved, and use only materials equal to the approved samples.

3) Type and Strength:

a) Compressive Strength: In place, at 28 days, minimum as follows (unless indicated otherwise by structural drawings):
Footings, walls, interior slabs on grade: 4,000 psi.

b) Air Content: All concrete exposed to freezing and thawing and/or required to be watertight shall have an air content as specified in 2.03.G. All interior slabs subject to abrasion shall have a maximum air content of 3%.

c) Water/Cement Ratio: All concrete subjected to freezing and thawing shall have a maximum water/cement ratio of 0.50. All concrete subjected to deicers and/or required to be watertight shall have a maximum water/cement ratio of 0.45.

d) Admixture Usage: All concrete must contain the specified

water-reducing admixture and/or the specified high-range water-reducing admixture (superplasticizer). All concrete slabs placed at air temperatures below 50 degrees F shall contain the specified non-corrosive, non-chloride accelerator. All concrete required to be air entrained shall contain an approved air entraining admixture. All pumped concrete, concrete for industrial slabs, architectural concrete, concrete required to be watertight and concrete with a water/cement ratio below 0.50 shall contain the specified high-range water-reducing admixture (superplasticizer).

e) Slump and Workability:
   i. Slump: As determined by ASTM C 143 as follows:

Footing	3" - 4"
Walls	5"
Slabs on grade	3" - 4"
Structural slabs, beams	3" - 4"
Columns	3" - 5"

   ii. Workability: So that concrete will completely fill forms without voids and embed and bond to reinforcing without separation of materials.

f) Mixing: Mix and deliver concrete in accordance with ASTM C 94-74.

g) Cooled or heated water shall be used in accordance with ACI 306 and 305.

h) Ready mixed concrete shall be transported to the site in watertight agitator or mixer trucks loaded not in excess of rated capacities.Discharge at the site shall be within one hour after charging.

i) Attention is called to the importance of scheduling and dispatching trucks from the batching point so that they arrive at the site of the work just before the concrete is required, thus avoiding excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms.

j) If, during the progress of the work, the Contractor desires to use materials other than those approved (originally) or if the materials from the source originally approved change in characteristics, additional tests shall be made with new materials which will produce concrete meeting with the stated requirements and not cause objectionable change in the color or appearance of the structure. These additional tests shall be made by the testing agency, at the expense of the Contractor. No concrete made from such different materials shall be used in the work until the Engineer has given his approval.

k) If during the progress of the work, it is impossible to secure

concrete of the required workability and strength with the materials being furnished by the Vendor, the Engineer may order such changes in the proportions or materials, or both, as may be necessary to secure the desired properties, subject to the stated requirements. Any changes so ordered shall be made at the Contractor=s expense, and no extra compensation will be allowed by reason of such changes.

4) Admixtures:
   a) Use air-entraining admixture in exterior exposed concrete. Add air-entraining admixture at the manufacturer=s prescribed rate to result in concrete at the point of placement having air content within the following limits.
      Concrete structures and slabs exposed to freezing and thawing:
         5% for maximum 2" aggregate
         5-1/2% for maximum 1- 2@ aggregate
         6% for maximum :" aggregate
         7% for maximum 2" aggregate
   b) Use admixtures for water-reducing and set-control in strict compliance with the manufacturer=s directions.
   c) Use amounts of admixtures as recommended by the manufacturer for climatic conditions prevailing at the time of placing. Adjust quantities and types of admixtures as required to maintain quality control.

e. WEATHER PROTECTION
   1) Cold Weather: Apply recommendations of ACI 306 - latest issue
   2) Hot Weather: Apply recommendations of ACI 305 - latest issue. Employ suitable means to prevent drying too rapidly. Shade fresh concrete as soon as possible without marring surface.
   3) Wet Weather: Unless adequate protection is provided, do not place concrete in rain, sleet or snow.

f. INSTALLATION OF EMBEDDED ITEMS
   1) The installation of all inserts required by other trades shall be coordinated with, or shall be in place prior to, the placing of reinforcing steel.
   2) The Contractor shall place anchor bolts, adjustable anchor slots, etc., furnished by other Sections.
   3) Coordination with other trades:
      a) Include installation of anchors, sleeves, tiles, angles, etc., furnished by subcontractors responsible for the facilities to be attached to these devices. Leave openings for pipes, ducts, etc., required for the ventilation, heating, electrical and plumbing

work. Provide concrete pads for outside pipes and utilities as required. Notify all trades concerned with sleeves, inserts, etc., to check their work before concrete is cast.

b) Embed no pipes other than electrical conduit in any structural concrete. Provide sleeves or holes for pipes passing through footing and foundations. Refer to AC 318.

g. INSPECTION

1) Assure that excavations and form work are completed and that ice and excess water are removed.
2) Check that reinforcement is secured in place.
3) Verify that expansion joint material, anchors and other embedded items are secured in position.

h. JOINTS

1) Construction Joints: Locate and install construction joints, which are not shown on the drawings, so as not to impair the strength and appearance of the structure, as acceptable to the Engineer.
2) Provide keyways at least 1- 2" deep in all construction joints in walls, slabs and between walls and footings; accepted bulkheads designed for this purpose may be used for slabs.
3) Place construction joints perpendicular to the main reinforcement. Continue all reinforcement across construction joints.

i. CONCRETE INSTALLATION

1) Placing Concrete:
   a) Convey concrete from mixer to final position by method which will prevent separation or loss of material.
   b) Maximum height of concrete free fall, three feet
   c) Regulate rate of placement so concrete remains plastic and flows into position.
   d) Deposit concrete in continuous operation until panel or section is completed.
   e) Place concrete in horizontal layers 18 inch maximum thickness.
2) Consolidating Concrete:
   a) Use mechanical vibrating equipment for consolidation.
   b) Vertically insert and remove hand-held vibrators at points 18 inches to 30 inches apart.
   c) Do not use vibrators to transport concrete in forms.
   d) Vibrate concrete minimum amount required for consolidation.
3) Finishing
   a) Float Finish: Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes as

hereinafter specified. After screeding and consolidating concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared and concrete has stiffened sufficiently to permit operation of power driven floats. Consolidate surface with power driven floats, or by hand floating if area is small or inaccessible to power units. Check and level surface plane to a tolerance not exceeding 3 inch in 10 ft. when tested with a 10 ft. straightedge. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

b) Trowel Finish: Apply trowel finish to monolithic slab surfaces that are to be exposed to view, unless otherwise shown, and slab surfaces that are to be covered with resilient flooring, paint or other thin-film finish coating system. After floating, begin first trowel finish operation using a power-driven trowel. Consolidate concrete surface by final hand troweling operation, free of trowel marks, uniform in texture and appearance and with a surface plane tolerance not exceeding c inch in 10 ft. when tested with a 10 ft. straightedge. Grind smooth surface defects which would telegraph through applied floor covering system.

c) Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms and walkways and corridors. Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with the Engineer before application.

4) Curing and Protection

a) General: Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.

i. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours.

ii. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue curing for at least 7 days and in accordance with ACI 301 procedures. Avoid rapid drying at end of curing period.

b) Curing Methods: Perform curing of concrete by moist curing by moisture-retaining cover curing, by membrane curing, and by combinations thereof, as herein specified. For curing, use only water that is free of impurities which could etch or discolor exposed, natural concrete surfaces.

i. Provide moisture curing by any of the following methods:

ii. Keeping surface of the concrete continuously we by covering with water.

iii. Continuous water-fog spray.

iv. Covering the concrete surface with the specified absorptive cover, thoroughly saturating the cover with water, and keeping the absorptive cover continuously wet. Place absorptive cover so as to provide coverage of the concrete surfaces and edges, with a 4" lap over adjacent absorptive covers.

v. Provide moisture-cover curing as follows: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape of adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

vi. Provide liquid membrane curing as follows: Apply the specified membrane-forming curing compound to damp concrete surfaces as soon as water film has disappeared. Apply uniformly in two-coat continuous operation by powerspray equipment in accordance with manufacturer's directions. Maintain continuity of coating and repair damage during the entire curing period.

j. MISCELLANEOUS CONCRETE ITEMS

1) Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete the work.

2) Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of the manufacturer furnishing machines and equipment.

3) Reinforced Masonry: Provide concrete grout for reinforced masonry

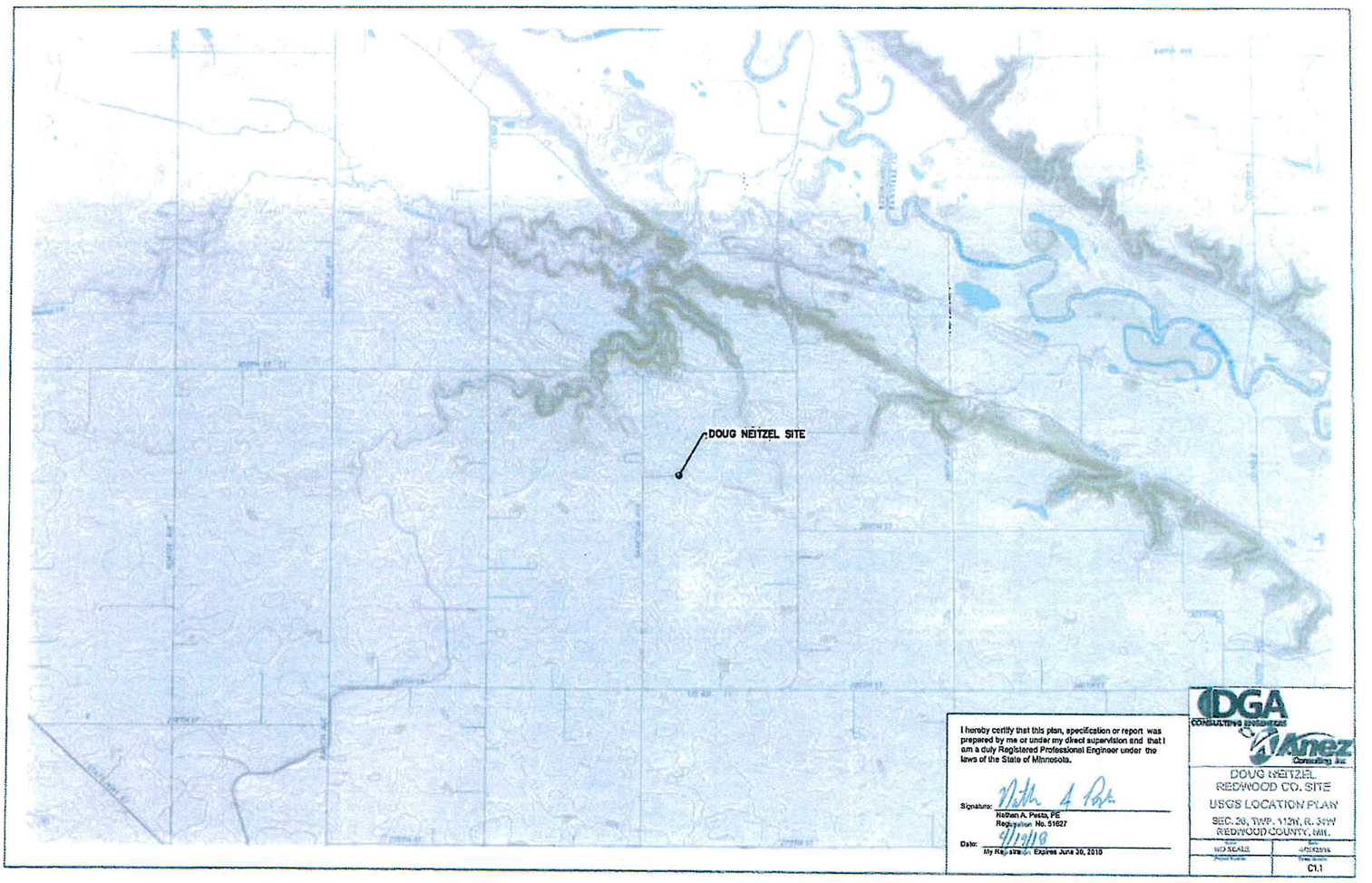
lintels vertical wall reinforcements and bond beams where indicated on drawings and as scheduled. Maintain accurate location of reinforcing steel during concrete placement.

k. CONCRETE SURFACE REPAIRS

1) Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, but only when acceptable to the Engineer.
2) Cut out honeycomb, rock pockets, voids over 2 inch diameter and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar, thoroughly clean, dampen with water and brush-coat the area to be patched with neat cement grout. Proprietary patching compounds may be used when acceptable to the Engineer.
3) For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, patching mortar will match color of surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

l. COMPACTION OF BACKFILL

1) Hand compaction or suitable mechanical compaction shall be provided to backfill around, adjacent to and above all concrete footings, foundations and walls which are below grade.
2) Dry density of compacted backfill shall be at least 95.0% of Standard Proctor Density.
3) Moisture content of backfill material shall be maintained or adjusted to allow proper compaction.



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature:

Nathan A. Pesta, PE
Registration No. 51627

Date: 4/19/18

My Registration Expires June 30, 2019

DGA CONSULTING ENGINEERS

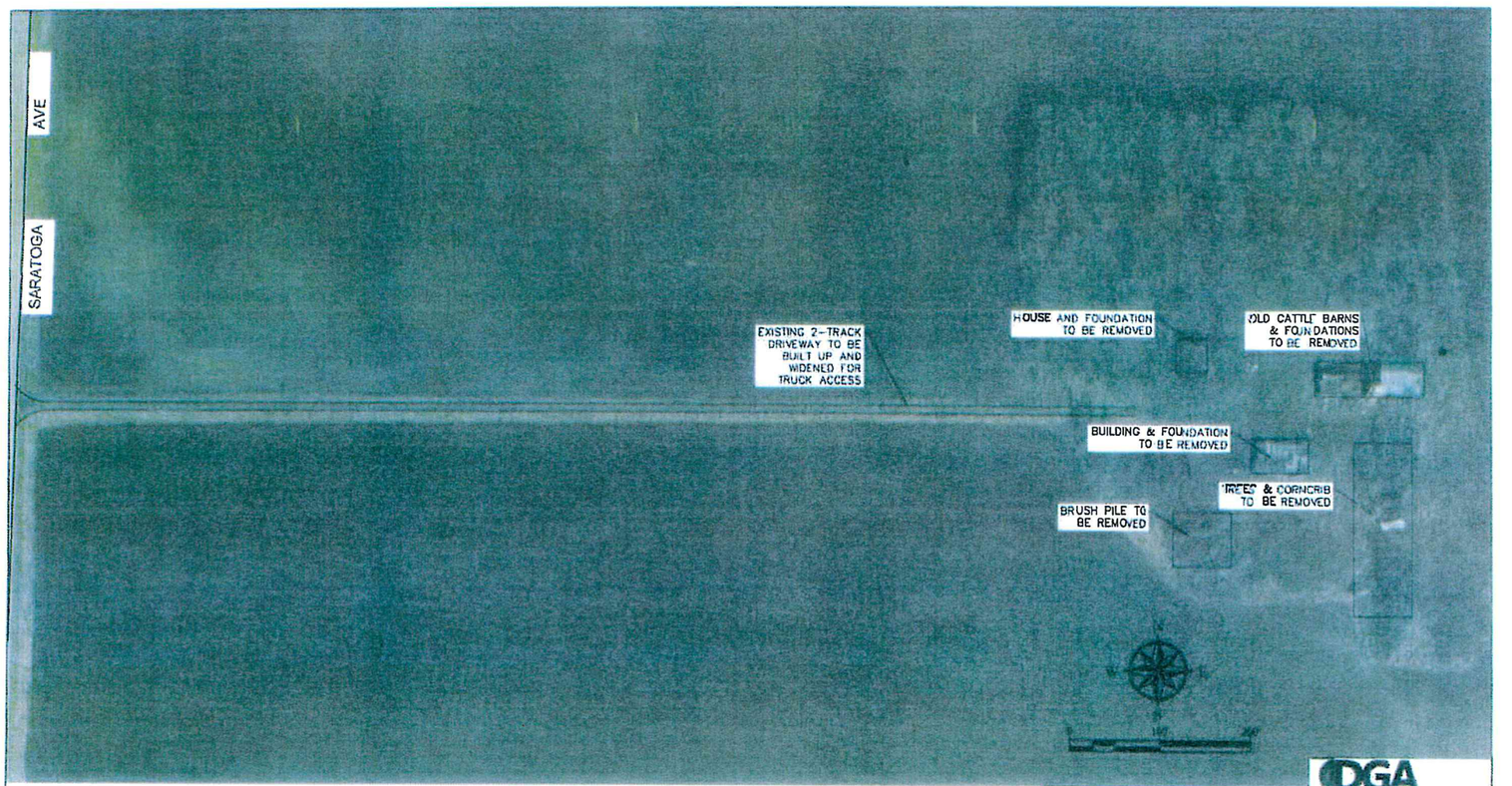
Anez Consulting Inc.

DOUG NEITZEL
REDWOOD CO. SITE

USGS LOCATION PLAN

SEC. 20, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

NO SCALE	4/19/2018
Project Number	Sheet Number
	C1.1



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

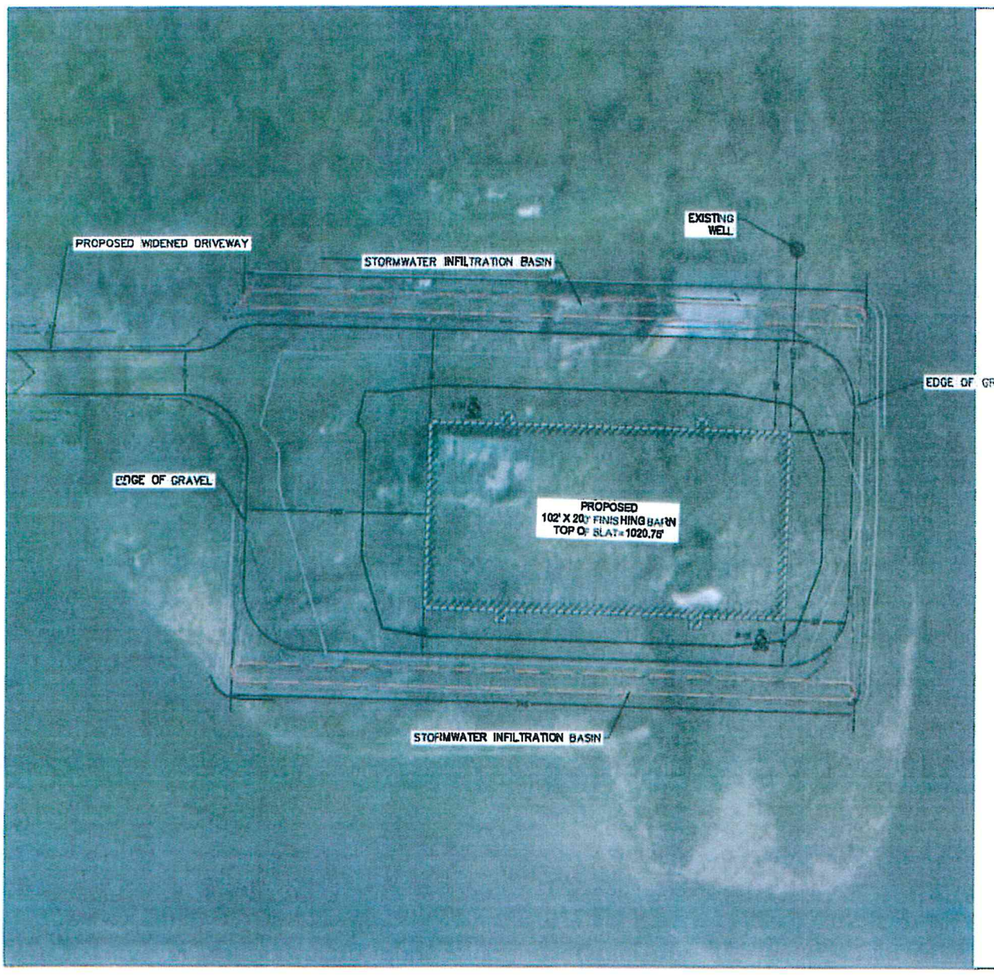
Signature: Nathan A. Poss, PE
Registration No. 51627

Date: 4/19/16
My Registration Expires June 30, 2016

DGA CONSULTING ENGINEERS
Anez Consulting Inc

DOUG NEITZEL
REDWOOD CO. SITE
EXISTING SITE PLAN
SEC. 28, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Scale	Date
1" = 100'	4/19/2016
Project Number	Sheet Number
	C1.2



TP TEST PIT LOCATION

W WELL LOCATION

SUBSURFACE DRAINTILE

GRADING LIMITS

SEDIMENT CONTROL MEASURES

INFILTRATION BASIN

ROAD RIGHT-OF-WAY

PROPERTY LINES

-995- PROPOSED GRADING

X995.91 PROPOSED SPOT ELEVATION

-992- EXISTING MINOR CONTOUR

-990- EXISTING MAJOR CONTOUR

-994- PROPOSED MINOR CONTOUR

-995- PROPOSED MAJOR CONTOUR

N

W E

S

0 50' 100'

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature

Nathan A. Pesta, PE
Registration No. 51827

Date 4/10/18
My Registration Expires June 30, 2018

DGA CONSULTING ENGINEERS

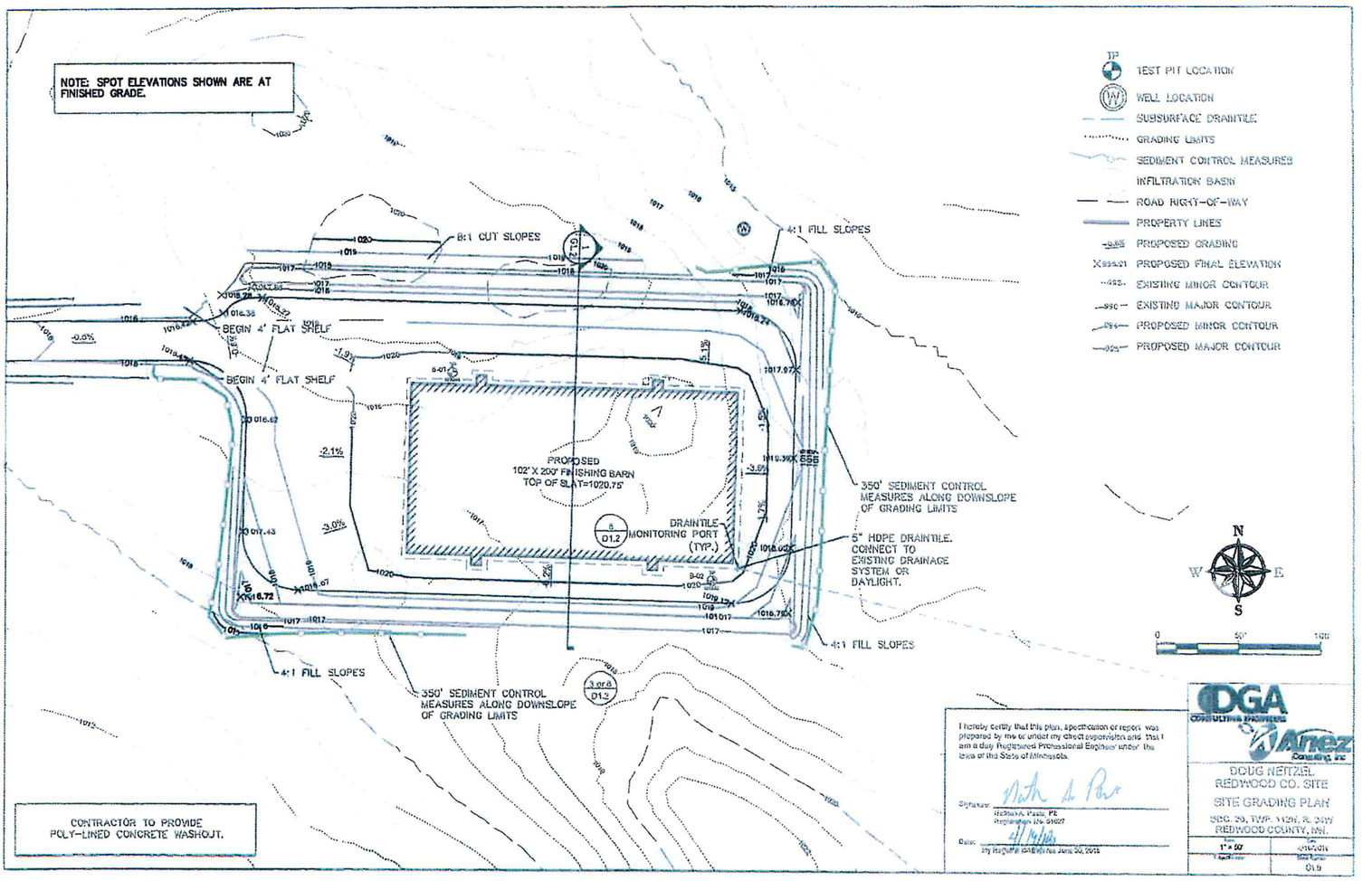
Amez Consulting, Inc

DOUG NEITZEL
REDWOOD CO. SITE

PROPOSED SITE PLAN

SEC. 26, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Scale	Date
1" = 50'	4/10/2018
Project Number	Sheet Number
	C1.3



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature: Nathan A. Pace

Nathan A. Pace, PE
Registration No. 51027

Date: 4/14/15

My Registration Expires on June 30, 2015

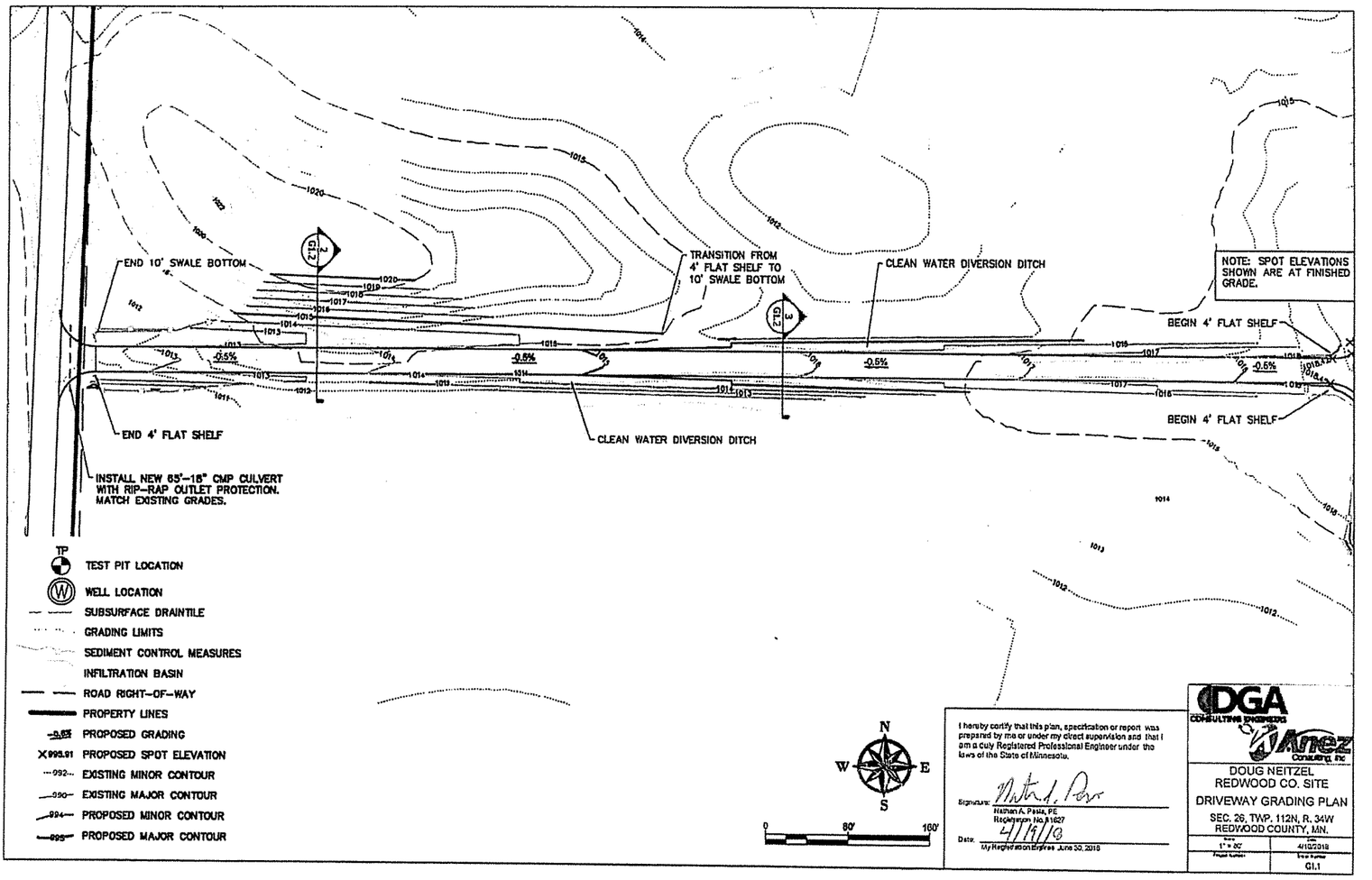
DGA CONSULTING ENGINEERS
Anez Consulting, PC

DOUG NEITZEL
REDWOOD CO. SITE

SITE GRADING PLAN

SEC. 29, TWP. 112N, R. 39W
REDWOOD COUNTY, MN.

Scale	Date
1" = 50'	4/14/2015
Sheet Number	Total Sheets
	010



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature: Nathan A. Pons

Nathan A. Pons, PE
Registration No. 51627

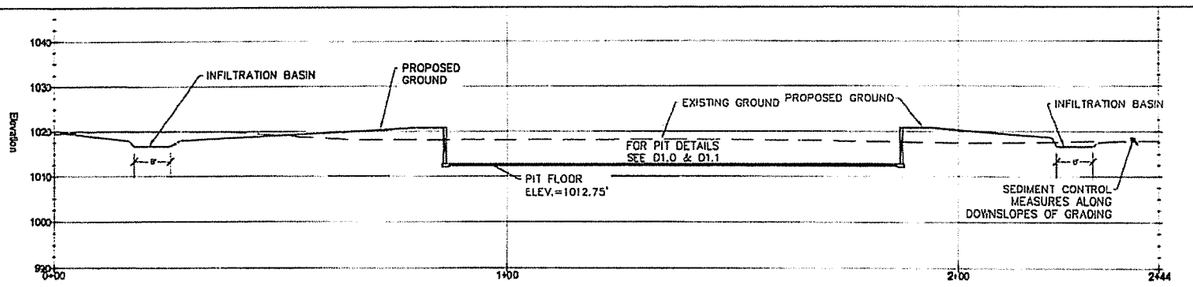
Date: 4/19/18

My Registration Expires June 30, 2018

DGA CONSULTING ENGINEERS
Arnez Consulting, Inc

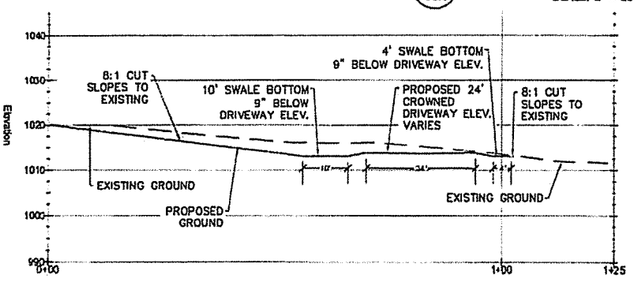
DOUG NEITZEL
REDWOOD CO. SITE
DRIVEWAY GRADING PLAN
SEC. 26, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Scale	Date
1" = 80'	4/19/2018
Project Number	Sheet Number
	G1.1



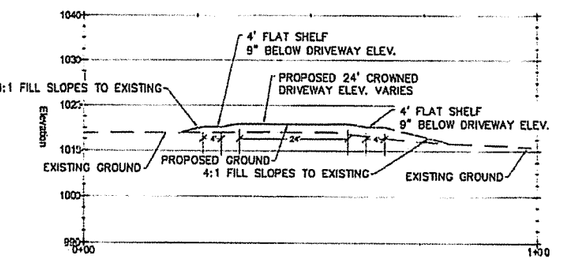
1-1 / G1.0 **SITE CROSS SECTION (TYP.)**

SCALE: 1" = 20'



2-2 / G1.1 **CUT SECTION DRIVEWAY (TYP.)**

SCALE: 1" = 20'



3-3 / G1.1 **FILL SECTION DRIVEWAY (TYP.)**

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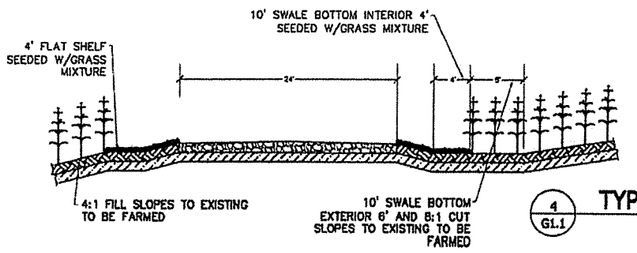


4 / G1.1 **TYPICAL DRIVEWAY SECTION**

SCALE: 1" = 10'

CLASS V GRAVEL
TOP SOIL
SUBGRADE
GRASS MIXTURE

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature: Nathan A. Pesta

Nathan A. Pesta, PE
Registration No. 51627

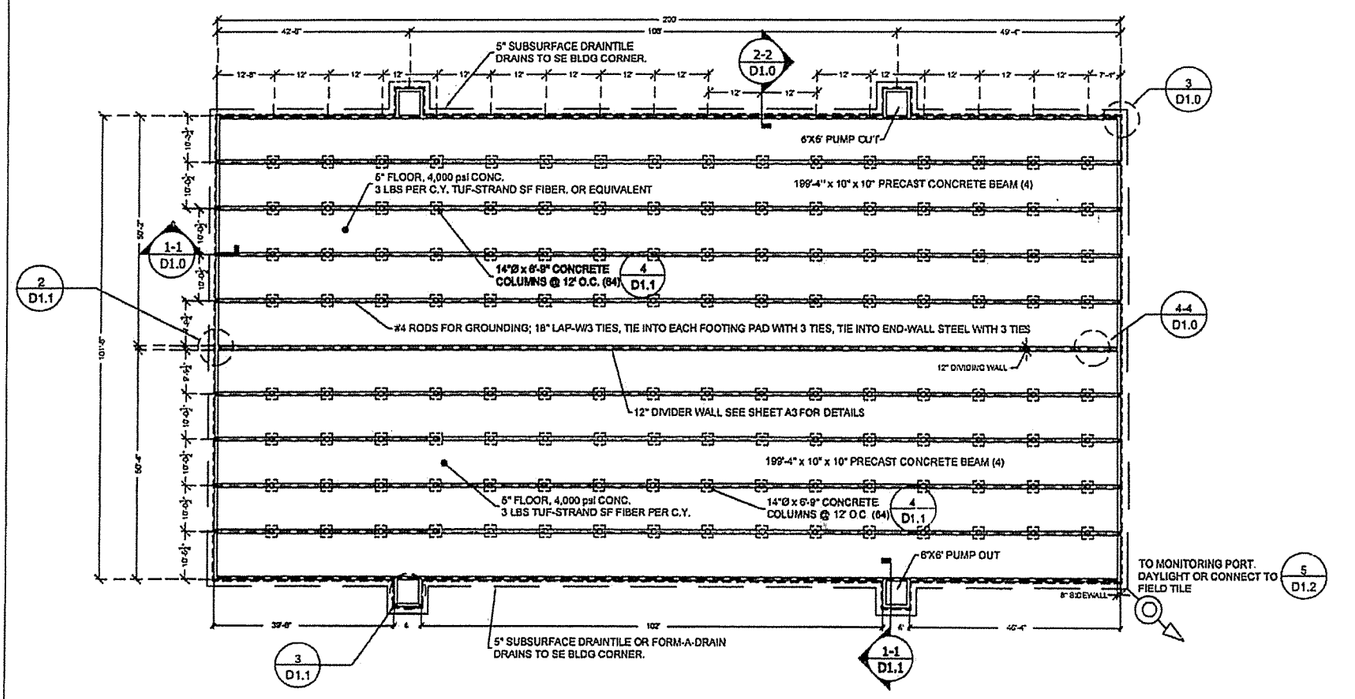
Date: 4/16/18

My Registration Expires June 30, 2019

DGA CONSULTING ENGINEERS
Anez Consulting, Inc

DOUG NEITZEL
REDWOOD CO. SITE
SITE CROSS SECTIONS
SEC. 28, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Scale	Date
1" = 20'	4/16/2018
Project Number	Sheet Number
	012



NOTES FOR CONCRETE PITS:

1. PERIMETER TILE. Pit design is based on use of perimeter tile with gravity outlet or automatic sump pump. Tile shall not be more than 4 ft. from main pit wall. Surface inlets into the perimeter tile are NOT permitted. Do not contaminate the perimeter tile trench.

2. CONSTRUCTION JOINTS are not permitted in the end walls or w/in 3 ft. of a pumpout. The pumpout floor and footing must be formed and poured along with the main floor.

3. ANCHOR BOLTS shall be set as specified by the building contractor.

4. PRECAST MANUFACTURER shall submit a certification from a registered professional engineer that the precast system will support the live loads specified in Section 03200.

5. HONEYCOMB AND SHRINKAGE CRACKS wider than the thickness of a plastic credit card shall be filled w/in 48 hours with cement grout slurry mopped into the cracks. Do this before dirt and equipment are brought onto the floor slab.

0 20' 40'

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature: Nathan A. Pesta

Nathan A. Pesta, PE
Registration No. 51627

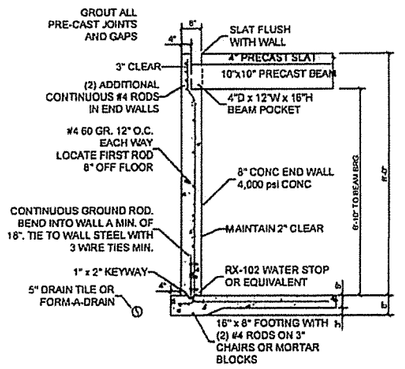
Date: 4/10/18

My registration expires June 30, 2018

DGA CONSULTING ENGINEERS
Anez Consulting, PE

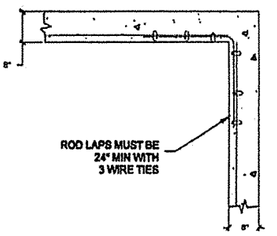
DOUG NEITZEL
REDWOOD CO. SITE
CONCRETE PIT PLAN
SEC. 25, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Scale	Date
1" = 20'	4/10/2018
Project Number	File Number
	S1.0



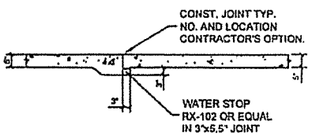
1 TYPICAL END WALL SECTION

Scale: 1" = 3'



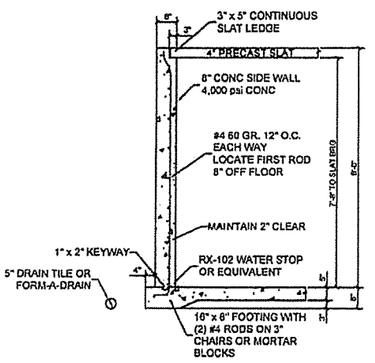
3 CORNER PLAN VIEW

Scale: 1" = 2'



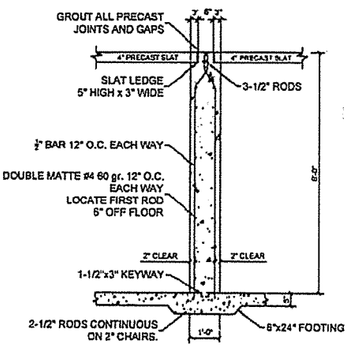
5 SLAB CONST. JOINT

Scale: 1" = 3'



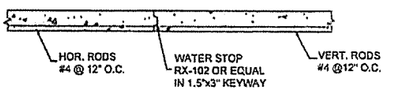
2-2 TYPICAL SIDE WALL SECTION

Scale: 1" = 3'



4-4 TYPICAL DIVIDE WALL SECTION

Scale: 1" = 3'



6 WALL CONST. JOINT

Scale: 1" = 3'

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature: Nathan A. Plate

Nathan A. Plate, PE
Registration No. 51627

Date: 4/15/16

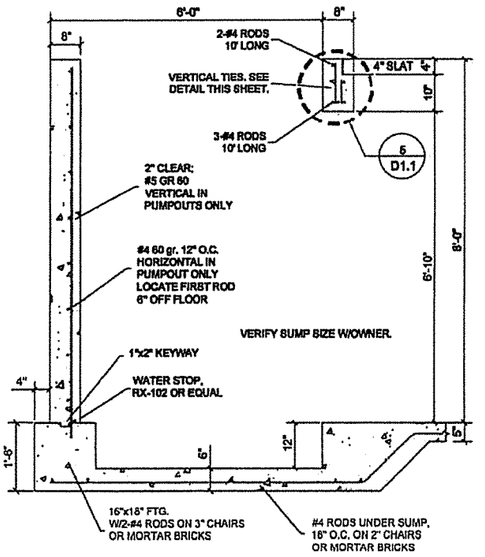
My Registration Expires June 30, 2016

DGA CONSULTING ENGINEERS

Alvarez Consulting, Inc.

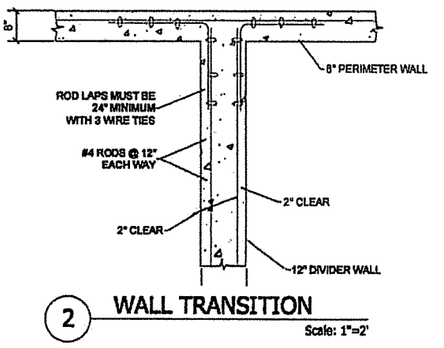
DOUG NEITZEL
REDWOOD CO. SITE
WALL/JOINT DETAILS
SEC. 26, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Drawn By	Date
RS SHOWN	4/12/2016
Project Number	Sheet Number
	D1.0



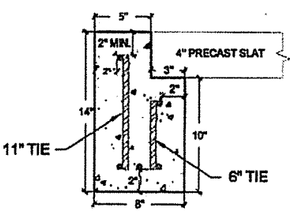
1-1 PUMP-OUT SECTION

Scale: 1"=2'



2 WALL TRANSITION

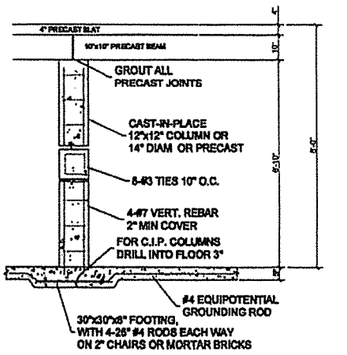
Scale: 1"=2'



ALTERNATE BETWEEN 11" AND 6" TIE RODS AS NEEDED. USE PLASTIC SPACERS TO MAINTAIN SEPARATION.

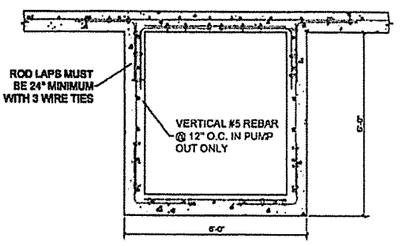
5 PUMP-OUT BEAM DETAIL

Scale: 1"=2'



4 COLUMN SECTION

Scale: 1"=3'



3 PUMP-OUT PLAN VIEW

Scale: 1"=3'

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

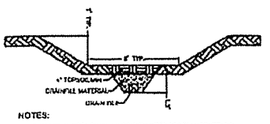
Signature: Nathan A. Pesek, PE
Registration No. 51627
Date: 4/18/18
My Registration Expires June 30, 2018

DGA CONSULTING ENGINEERS
Amez Consulting, Inc

DOUG NEITZEL
REDWOOD CO. SITE
PUMPOUT/COLUMN DETAILS
SEC. 28, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

Scale	Date
AS SHOWN	4/10/2018

Sheet Number: D1.1



NOTES:

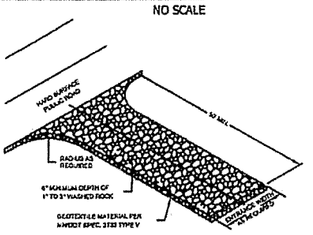
1. CHANNEL SLOPES SHALL BE CONSTRUCTED PER PLAN CONTOURS
2. CHANNELS SHALL BE OVEREXCAVATED TO ACCOMMODATE THE PLACEMENT OF A 6" LAYER OF TOPSOIL AND EROSION CONTROL MEASURES
3. INSTALL EROSION CONTROL MEASURES (MULCH OR MATTING) IMMEDIATELY UPON PLACEMENT OF TOPSOIL AND SEEDING AMENDMENTS.

DRAINFILL NOTES:

1. DRAINFILL MATERIALS SHALL BE SAND, GRAVEL, CRUSHED STONE, OR NOTCHED TREESUE. THE MATERIAL SHALL BE CLEAN, HARD, DURABLE PARTICLES FREE FROM ORGANIC MATTER OR OTHER DELETERIOUS SUBSTANCES THAT WOULD INTERFERE WITH FREE DRAINING PROPERTIES
2. DRAINFILL MATERIAL SHALL BE A READILY WELL GRADED SAND GRAVEL MIXTURE WITH 10 TO 50 PERCENT PASSING A NO. 4 SIEVE. THE MAXIMUM SIZE OF THE MATERIAL SHALL BE 3 INCHES, NO MORE THAN 5 PERCENT BY WEIGHT SHALL PASS A NO. 200 SIEVE.
3. UNLESS OTHERWISE SPECIFIED, NOT MORE THAN 5 PERCENT BY WEIGHT OF THE MATERIAL EVER THAN A NO. 4 SIEVE SHALL BE CRUSHED MATERIAL OR DOLOMITE.
4. FOUNDATION SURFACES AND TRENCHES SHALL BE CLEAN AND FREE OF ORGANIC MATTER, LOOSE SOIL, FOREIGN SUBSTANCES, AND STANDING WATER WHEN THE DRAINFILL IS PLACED. EARTH SURFACES UPON OR AGAINST WHICH DRAINFILL WILL BE PLACED SHALL NOT BE SCARIFIED.
5. DRAINFILL SHALL BE PLACED IN LIFTS NOT LAYS NO MORE THAN 12 INCHES IN THICKNESS.
6. THE DRAINFILL SHALL BE PLACED IN A MANNER TO AVOID SEGREGATION OF PARTICLE SIZES. NO FOREIGN MATERIALS WILL BE ALLOWED TO INTERMIX WITH OR OTHERWISE CONTAMINATE THE MATERIAL.

1 SWALE CROSS SECTION

NO SCALE

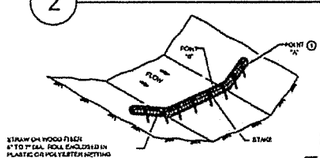


MAINTENANCE (INCIDENTAL)

THE ROCK PAD SHALL BE MAINTAINED TO PREVENT THE TRACKING OF MUD ONTO PAVED ROADS, INCLUDING PERIODIC TOP DRESSING WITH ADDITIONAL ROCK OR REMOVAL AND REINSTALLATION OF THE PAD AS NECESSARY.

2 TEMP. ROCK CONST. ENTRANCE

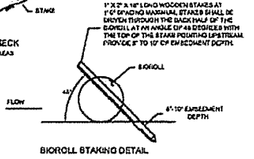
NO SCALE



STRAW OR WOOD FIBER 6" TO 7" DIA. ROLL ENCLOSED IN PLASTIC OR POLYESTER NETTING

TYPE 2: BIOROLL DITCH CHECK

USE ON ROUGH GRADED AREAS



BIOROLL STAKING DETAIL

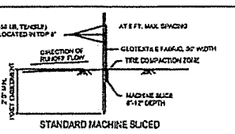
NOTES

1. SEE TEMP. SEDIMENT CONTROL DITCH CHECK/SATRIPOSE DETAIL FOR DITCH CHECK SPACING
2. REMOVE SEDIMENT WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT DITCH CHECK (SAV).

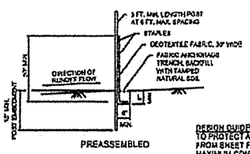
① POINT "A" MUST BE A MINIMUM OF 8 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DAM AND NOT AROUND THE ENDS.

4 BIO-ROLL SEDIMENT CONTROL

TYPE 2 SEDIMENT CONTROL NO SCALE

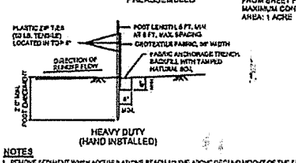


STANDARD MACHINE SLICED



PREASSEMBLED

DESIGN CHOICE WHEN TO PROTECT AREAS FROM SHEET FLOW, MAXIMUM CONTRIBUTING AREA: 1 ACRE



HEAVY DUTY (HAND INSTALLED)

NOTES

1. REMOVE SEDIMENT WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

3 SILT FENCE DETAILS

NO SCALE

SPECIFICATIONS FOR SEEDING AND STABILIZATION

TEMPORARY SEEDING:

FALL
SEED MIX : 21-112
APPLICATION RATE, : 100 LBS/ACRE
SEEDING PERIOD : 8/1 TO 10/1
FERTILIZER TYPE : PER MANUFACTURES RECOMMENDATION
FERTILIZER
APPLICATION RATE : PER MANUFACTURES RECOMMENDATION
MULCH TYPE : HAY OR STRAW
MULCH RATE : 2 TONS/ACRE

SPRING/SUMMER
SEED MIX : 21-111
APPLICATION RATE : 60 LBS/ACRE
SEEDING PERIOD : 5/1 TO 8/1
FERTILIZER TYPE : PER MANUFACTURES RECOMMENDATION
FERTILIZER
APPLICATION RATE : PER MANUFACTURES RECOMMENDATION
MULCH TYPE : HAY OR STRAW
MULCH RATE : 2 TONS/ACRE

PERMANENT SEEDING: SEED MIX 25-131

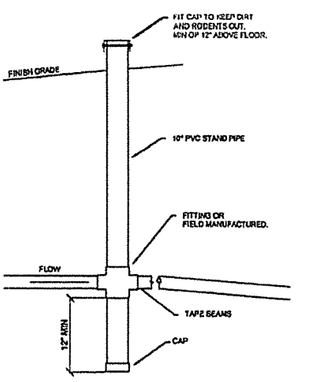
APPLICATION RATE : 220 LBS/ACRE
SEEDING PERIOD : 4/1 TO 5/1, 7/20 TO 10/20
FERTILIZER TYPE : PER MANUFACTURES RECOMMENDATION
FERTILIZER
APPLICATION RATE : PER MANUFACTURES RECOMMENDATION
LIMING RATE : 2 TONS/ACRE
MULCH TYPE : HAY OR STRAW
MULCH RATE : 2 TONS/ACRE

NON-VEGETATIVE SURFACE STABILIZATION MULCH

TEMPORARY MULCH TYPE : HAY OR STRAW
APPLICATION RATE : 2 TONS/ACRE
ANCHOR MATERIAL : WOOD CELLULOSE/HYDROSEED
APPLICATION RATE : 600 LBS/ACRE

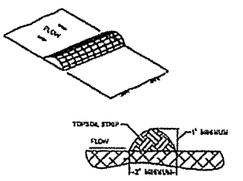
NOTES:

1. THE MULCH APPLICATION RATE FOR CHANNELS AND 3:1 SLOPES SHALL BE 3 TONS PER ACRE AS INDICATED ON THE PLAN.
2. STRAW AND HAY MULCH SHALL BE DISC ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
3. SEED MIX AND APPLICATION SHALL COMPLY WITH THE MN DOT SEEDING MANUAL 2016 EDITION.



5 PERIMETER DRAINTILE SAMPLING PORT

NO SCALE



6 TEMP. SEDIMENT CONTROL

EARTHEN BERM NO SCALE

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signature: Nathan A. Parke

Nathan A. Parke, PE
Registration No. 51822

Date: 4/19/19

My Registration Expires June 30, 2019

DGA CONSULTING ENGINEERS
Anez Consulting, Inc

DOUG NEITZEL
REDWOOD CO. SITE
CONSTRUCTION DETAILS
SEC. 29, TWP. 112N, R. 34W
REDWOOD COUNTY, MN.

NO SCALE	4/10/2019
Project Number	Sheet Number
	D1.2

Section 5

SECTION 5: Operation and Maintenance Plan & Requirements

1. All swine waste shall be applied as specified in Nutrient Management Plan or Waste Utilization plan when developed.
2. Travel of vehicles should be confined to designated areas to prevent concrete pit damage and reduce drainage erosion.
3. Vegetation on side slopes shall be clipped annually as a minimum and only when area is dry and firm. Regrade, seed and mulch any areas which become damaged immediately.
4. Maintain grades around containment structures to assure positive surface drainage away from the structures in all directions. Fill any settled areas which may collect water.
5. Repair any damage to fences, gates, marker posts and safety signs.
6. Do not allow trees to grow adjacent to concrete storage tanks, to avoid root damage to the structures.
7. The landowner/producer is responsible for back-up power and water if existing system goes down due to power outage or pump failure, etc.
8. Inspect concrete storage tank for signs of leaking or seepage, excessive settling, excessive vegetation growth or damage due to vehicles or equipment, rodents or erosion. Report any leakage as detailed above and make plans to rectify any problems as soon as possible.
9. Solids accumulation in the waste storage pits will be inspected annually. Solids will be cleaned from the pit using agitation when necessary and land applied in accordance with the current NMP.
10. Monitor and record the Deep pit concrete levels weekly. Inspect Sewer pipes to ensure they are not plugged or damaged.
11. Inspect drainage pipes and risers after major storm events for damage and debris. Remove any debris from inlet or outlet. Repair any damage immediately.
12. Maintain records of all inspections, facility repairs, mortality disposal type, and manure applications.
13. Calculate agronomic rates of manure land application and maintain records of rate, timing and location of manure application.
14. In the event of an unplanned release of manure or wastewater steps should be taken to minimize the spill and its impact, and documentation of the event should be made. If the nature of the release is such that it could endanger human health, or directly reach surface or ground water, the Minnesota Department of Public Safety must be notified as soon as possible but within 24 hours of discovery by calling 651-649-5451 (business hours) or 800-422-0798 (non business hours).

DOUG NEITZEL

SWINE BARN

LAST PAGE

DeHaan, Grabs & Associates, LLC
4200 21st St. SE #101 Mandan ND 58554
www.dgaengineering.com

Notice of Application
To Permit A Livestock Feedlot

Notice is hereby given per Minnesota Statute 116.07 subd, 7 (a) that

Neitzel Pork Project
41687 300th St
Morton, MN 56270

has applied to the Minnesota Pollution Control Agency and Redwood County to permit a feedlot with 500 or more animal units. The proposed feedlot is in the N ½ of the SW ¼, Section 26, Sherman Township, Redwood County.

The applicant is proposing to construct a 122' x 200' total confinement swine finishing barn with under barn concrete liquid manure storage area for 3300 head of swine 55 to 300 pounds. The total animal units will be 990.

This publication shall constitute as notice to each resident and each owner of real property within 5000 feet of the perimeter of the proposed feedlot as required by Minnesota State Law.

1700 Technology Dr. NE, Suite 130, Willmar, MN 56201 320.235.1970 Fax 320.235-1986
www.AnezConsulting.com

OFFICIAL PUBLICATION
NOTICE OF APPLICATION TO PERMIT A LIVESTOCK FEEDLOT

Notice is hereby given per Minnesota Statute 116.07 subd., 7 (a) that

Neitzel Pork Project
41687 300th St.
Morton, MN 56270

has applied to the Minnesota Pollution Control Agency and Redwood County to permit a feedlot with 500 or more animal units. The proposed feedlot is in the N 1/2 of the SW 1/4, Section 26, Sherman Township, Redwood County.

The applicant is proposing to construct a 122'x200' total confinement swine finishing barn with under barn concrete liquid manure storage for3300 head of swine 55 to 300 pounds. The total animal units will be 990.

This publication shall constitute as notice to each resident and each owner to real property within 5000 feet of the perimeter of the proposed feedlot as required by Minnesota State Law.

Published in the Redwood Gazette April 5, 2018.

AFFIDAVIT OF PUBLICATION

Redwood Gazette

Redwood Falls, Minnesota
State of Minnesota
County of Redwood

Lisa Drafall, being first duly sworn, on oath states as follows:

1. I am the general manager of the Redwood Gazette. I have personal knowledge of the facts stated in this Affidavit, which is made pursuant to Minnesota Statutes §331A.07.

2. The newspaper has compiled with all of the requirements to constitute a qualified newspaper under Minnesota law, including those requirements found in Minnesota Statutes §331A.02.

3. The dates of the month and the year and day of the week upon which the public notice attached/copied below was published in the newspaper are as follows: **-THURSDAY-**, the **5th** day of **APRIL, 2018.**

4. The general manager's lowest classified rate paid by commercial users for comparable space, as determined pursuant to § 331A.06 and §331A.07.

5. Mortgage Foreclosure Notices. Pursuant to Minnesota Statutes §580.033 relating to the publication of mortgage foreclosure notices: The newspaper's known office of issue is located in Redwood County. The newspaper complies with the conditions in §580.033, subd. 1, clause (1) or (2). If the newspaper's known office of issue is located in a county adjoining the county where the mortgaged premises or some part of the mortgaged premises described in the notice are located, a substantial portion of the newspaper's circulation is in the latter county.

FURTHER YOUR AFFIANT SAITH NOT.

By: _____
General Manager

Subscribed and sworn before me
on the **5th** day of **APRIL, 2018.**

By: _____
Notary Public

LEANNE JOY KAUFENBERG
NOTARY PUBLIC - MINNESOTA
MY COMMISSION EXPIRES
JANUARY 31, 2020

DEPARTMENT OF NATURAL RESOURCES

MNDNR PERMITTING AND REPORTING SYSTEM

Authorization Number
2018-1103

General Permit Number
2004-0275

Water Appropriation General Permit Authorization

On the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant and other supporting data, all of which are made part hereof by reference, **PERMISSION IS HEREBY GRANTED** to the applicant to perform actions as authorized below. Applicant must comply with all conditions listed in the above referenced General Permit.

Project Name:	**County:**	**Watershed:**	**Resource:**
Neitzel - Site 2	Redwood	Minnesota River - Mankato	Groundwater

Purpose of Permit:	**Authorized Action:**
Livestock Watering	Withdrawal of up to 5.0 million gallons of water per year for livestock watering.

Permittee:	**Authorized Agent:**
C. DOUGLAS NEITZEL 41687 300TH ST MORTON, MN 56270 (507) 829-5478 dugneitzel@yahoo.com	N/A

To Appropriate From:

Well Installation #1: 5.0 inches diameter, 120.0 feet depth, 10 gpm, unique number 822095
Point(s) of Taking
UTM zone 15N, 348892m east, 4926501m north
NESW of Section 26, T112N, R34W

Well Installation #2: 5.0 inches diameter, 121.0 feet depth, 30 gpm, unique number 830601
Point(s) of Taking
UTM zone 15N, 348526m east, 4926451m north
NWSW of Section 26, T112N, R34W

Issued Date: 05/10/2018	**Effective Date:** 05/10/2018	**Expiration Date:** Long-Term Appropriation

Authorized Issuer:	**Title:**	**Email Address:**	**Phone Number:**
Garry Bennett	Area Hydrologist	garry.bennett@state.mn.us	320-234-2550 x230

This permit is granted **subject to** the following **CONDITIONS**:

Applicant must comply with all conditions listed in General Permit 2004-0275.

CONDITIONS continued on next page...

cc: Skip Wright, EWR District Manager
Bauman, Jeff, Contact; Anez Consulting, Inc.
Anez Consulting, Inc., Agent
Matt Loftness, Conservation Officers, Redwood Falls
John Hansel, BWSR Wetland Specialists, Redwood
Lisa Gelvin-Innvaer, DNR Regional Nongame Specialists, South
Kevin Mixon, DNR Regional Environmental Assessment Ecologist, Region 4
Cory Netland, DNR Wildlife, New London
Scott Mackenthun, DNR Fisheries, Hutchinson Area
Scott Wold, County, Redwood
Nick Brozek, County, Redwood
Ryan Malterud, Corps of Engineers, Redwood
Marilyn Bernhardson, SWCD, Redwood SWCD

DEPARTMENT OF NATURAL RESOURCES

MNDNR PERMITTING AND REPORTING SYSTEM

Amended

Water Appropriation General Permit

General Permit Number

2004-0275

Expiration Date: 01/22/2023

Pursuant to Minnesota Statutes, Chapter 103G, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant and other supporting data, all of which are made part hereof by reference, **PERMISSION IS HEREBY GRANTED** to the applicant to perform actions as authorized below. This permit supersedes the original permit and all previous amendments.

Project Name:	**County:**	**Watershed:**	**Resource:**
Animal Feedlots and Livestock Operations	All counties in Minnesota	All watersheds in Minnesota	All surface and groundwater of the state

Purpose of Permit:	**Authorized Action:**
Livestock watering and sanitation. This permit is valid for animal feedlots and other livestock operations that appropriate surface water or groundwater for use in the production of animals, poultry, or direct animal products such as milk or eggs.	Upon application to and approval by authorized DNR staff, appropriation from surface water and groundwater of the state for an amount not to exceed 5 million gallons per year for a single operation, and at a rate not to exceed 100 gallons per minute.
Permittee: Owners of animal feedlots and livestock operations	**Authorized Agent:** N/A

To Appropriate From:

The Permittee must own, control, or have permission to access and use all lands where water is appropriated, conveyed, and used.

Authorized Issuer:	**Title:**	**Issued Date:**	**Effective Date:**	**Expiration Date:**
Tom Hovey	Water Regulations Unit Supervisor	01/19/2018	01/22/2018	01/22/2023

This permit is granted **subject to** the following **CONDITIONS**:

LIMITATIONS: (a) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 103G. (b) This permit shall not be construed as establishing any priority of appropriation of waters of the state. (c) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law. (d) In all cases where the doing by the Permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary therefore. (e) This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law. (f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

GENERAL PERMIT CONDITIONS (*Continued from previous page*)

WATER USE REPORTING: (a) FLOW METER The Permittee shall equip each installation for appropriating or using water with a flow meter, unless another method of measuring the quantity of water appropriated to within ten (10) percent of actual amount withdrawn is approved by the Department. (b) REPORTS Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of DNR Ecological and Water Resources, on or before February 15 of the following year, via the MNDNR Permitting and Reporting System (MPARS) at www.mndnr.gov/mpars/signin. Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice. (c) TRANSFER OR ASSIGNMENT Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of DNR Ecological and Water Resources. Such notice shall be made by the transferee (i.e., new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner. (d) MODIFICATION The Permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

COMMISSIONER'S AUTHORITY: (a) The Commissioner may inspect any installation utilized for the appropriation or use of water. The Permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require. (b) The Commissioner may, as he/she deems necessary, require the Permittee to install gages and/or observation wells to monitor the impact of the Permittee's appropriation on the water resource and require the Permittee to pay necessary costs of installation and maintenance. (c) The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit.

PUBLIC RECORD: All data, facts, plans, maps, applications, annual water use reports, and any additional information submitted as part of this permit, and this permit itself are part of the public record and are available for public inspection at the offices of DNR Ecological and Water Resources. The information contained therein may be used by the Division as it deems necessary. The submission of false data, statements, reports, or any such additional information, at any time shall be deemed as just grounds for revocation of this permit.

MONITORING REQUIREMENTS: Minnesota Statutes 103G.282 authorizes the Department of Natural Resources to require permittees to install and maintain monitoring equipment to evaluate water resource impacts from permitted appropriations. You may be required to modify or install automated measuring devices and keep records for each installation. The frequency of measurements and other requirements will be based on quantity of water appropriated, source of water, potential connections to other water resources, nature of concern, and other relevant factors.

DROUGHT PLANNING: In accordance with M.S. 103G.293, all permits must be consistent with the drought response plan detailed in the Statewide Drought Plan at http://files.dnr.state.mn.us/natural_resources/climate/drought/drought_plan_matrix.pdf.

WATER USE CONFLICT: If notified by the DNR that a water use conflict is suspected and probable from your appropriation, based on confirmation of a formal well interference complaint or a preliminary hydrologic assessment, all appropriation authorized by this permit must cease immediately until the interference is resolved. The permittee may be required to obtain additional data to support the technical analysis, such as domestic well information within a radius of one and one-half miles of the production well. The permittee and impacted party may engage in a negotiated settlement process and there may be modifications made to this permit in support of conflict resolution.

WATER CONSERVATION: All practical and feasible water conservation methods and practices must be employed to promote sound water management and use the least amount of water necessary, such as reuse and recycling water, water-saving devices, and water storage.

WELL SEALING: The permittee shall notify the Minnesota Department.of Health (MDH) prior to sealing, removing, covering, plugging or filling the well(s} from which the authorized appropriation was made. The well(s) must be sealed by a licensed well driller and in accordance with the procedures required under Minnesota Statutes 1031 and Minnesota Rules 4725 as administered by MDH.

WELL INTERFERENCE: If notified by the DNR that a well interference is suspected and probable from your appropriation, based on confirmation of a formal well interference complaint, all appropriation authorized by this permit must cease immediately until the interference is resolved. The permittee may be required to obtain domestic well information within a radius of one and one-half miles of the production well should well interference problems develop.

MPCA FEEDLOT PROGRAMS: This permit is only valid for operations that comply with all feedlot rules and regulations

GENERAL PERMIT CONDITIONS (*Continued from previous page*)

required by the Minnesota Pollution Control Agency and county feedlot programs.

ENVIRONMENTAL IMPACTS: This permit is not valid in areas or locations where trout streams, calcareous fens, or other significant environmental resources may be adversely impacted by the water use authorized under this general permit. In such areas or locations, a separate water appropriation permit application and permit may be required. The Area Hydrologist must be contacted for permit application requirements.

SURFACE WATER SOURCES: DNR Ecological and Water Resources may require the suspension of appropriations during periods of low flows and low water levels in order to maintain minimum flows and water levels within the watershed. This permit is not valid for direct surface water appropriation from designated trout streams and their tributaries (Minn. Stat. 103G.285, Subd. 5). This permit is not valid for appropriations from surface water sources that are infested with invasive species (Minn. Rules 6216.0500). All pump intakes must be screened to prevent fish from being drawn in to the system.

INVASIVE SPECIES PREVENTION - EQUIPMENT DECONTAMINATION: All equipment used at a project site must be free of prohibited invasive species and aquatic plants prior to being transported into or within the state. For more information refer to the "Best Practices for Preventing the Spread of Aquatic Invasive Species" at http://files.dnr.state.mn.us/publications/ewr/invasives/ais/best_practices_for_prevention_ais.pdf. The Permittee or their authorized agent must inspect all equipment to ensure that no aquatic plants or prohibited invasive species are on the equipment prior to being transported to or from the worksite. The DNR is available to train inspectors and/or assist in these inspections. Contact your local Invasive Species Specialist for assistance at www.mndnr.gov/invasives/contacts.html. You may need additional permits to work in infested waters; the infested waters list is available at www.dnr.state.mn.us/invasives/ais/infested.html. A list of prohibited invasive species is available at www.dnr.state.mn.us/invasives/laws.html#prohibited.

APPLY USING MPARS: Prior authorization to use General Permit 2004-0275 must be requested by submitting an application using the MN DNR Permitting and Reporting System (MPARS) at www.mndnr.gov/mpars/signin. Users will need to create an account the first time they access the system. Once created, users should click on the link in the Actions box called 'Apply for a New Permit/Authorization' and complete the application questions.

SARATOGA AVE

WEST LINE OF SECTION 26

1000' SHORELAND SETBACK

EXISTING GROVE

EXISTING WELL

③ MORTALITY

30' GRAVEL DRIVE

EDGE OF GRAVEL

150'

① PROPOSED 122' X 200' FINISHING BARN

100'

1380'

1051'

② FEED BINS

80'

1320' RESIDENCE SETBACK

1320'

INTERMITTENT STREAM(PWI)

PARCEL LINES

PROJECT LOCATION

SHERMAN TWP.

26

REDWOOD COUNTY, MN.

N

W E

S

0 200' 400'

Anez Engineering, Inc.
1700 Technology Drive NE
Suite 130
Willmar, MN 56201
(320) 235-1970

DOUG NEITZEL
SITE PLAN

SEC. 26, TWP. 112, R. 34
REDWOOD COUNTY, MN.

Scale	Date
1" = 200'	3/08/2018
Project Number	Sheet Number
	X of X

MINNESOTA POLLUTION CONTROL AGENCY

520 Lafayette Road North
St. Paul, MN 55155-4194

Public Notice of intent to modify

Feedlots
Permit MNG440280

General information

Public comment period begins: April 25, 2018

Public comment period ends: 4:30 p.m. on May 25, 2018

Current permit issued: November 10, 2016

Current permit expiration date: February 1, 2021

The Minnesota Pollution Control Agency (MPCA) Commissioner has made a preliminary determination to modify this permit for a term that remains unchanged.

Name and address of Permittee:

Douglas Neitzel
41687 300th St
Morton, MN 56270

Facility name and location:

Neitzel Pork Project
41687 300th St
Morton, MN 56270
Redwood County
T112N, R34W, Section 20

MPCA contact person:

Klayton VanOverbeke
Watershed Division
Minnesota Pollution Control Agency
504 Fairgrounds Roads, Suite 200
Marshall, MN 56258
Phone: 507-476-4276
Fax: 507-537-6001
E-mail: klayton.vanoverbeke@state.mn.us

File Manager Phone: 651-757-2728 or
844-828-0942

Watershed: Minnesota River - Mankato

Description of Neitzel Pork Project

This is a public notice to modify a manure management plan for an Animal Feedlot that currently has coverage under the State of Minnesota General Animal Feedlot National Pollutant Discharge Elimination System (NPDES) Permit. A copy of the manure management plan modification is available for review at the MPCA office address listed under the MPCA contact person. The MPCA will mail or email a copy of the manure management plan modification upon request. Comments, petitions, and other requests must be received by the MPCA in writing on or before the public comment period end date and time identified above.

The facility has proposed to modify the previously approved manure management plan by including additional land application acres. The new land application acres are located in the NW ¼ and SW ¼ of Section 18, Eden Township, Brown County; the N ½ of the SW ¼ of Section 9, Morgan Township, Redwood County; the SW ¼ of Section 26, Sherman Township, Redwood County; and the N ½ of the NW ¼ of Section 35, Sherman Township, Redwood County.

The preliminary determination to modify is tentative.

Procedure for public participation

As stated in Minn. R. chs. 7000 and 7001, there are three formal procedures for public participation in the MPCA's consideration of this matter. Interested persons may:

(1) Submit written comments on the preliminary determininationto modify coverage under a general permit, the application materials, or draft permit.
(2) Petition the MPCA to hold a public informational meeting.
(3) Petition the MPCA to hold a contested case hearing.

Only the portions of the permit coverage that are proposed to be modified are open for comment and petition.

Submitting written comments

To submit comments or petitions to the MPCA through the mail or email, you must state:

(1) Your interest in the preliminary determination to modify coverage under a general permit, the application materials, or draft permit.
(2) The action you wish the MPCA to take, including specific references to the application materials or section of the draft permit you believe should be changed.
(3) The reasons supporting your position, stated with sufficient specificity as to allow the MPCA to investigate the merits of the position.

Public informational meeting

A public informational meeting is an informal meeting during which interested persons can ask questions concerning the proposed facility. MPCA staff will be present to provide information. If an interested person would like the MPCA to hold a public informational meeting, the person should include all information identified above and in addition include a statement of the reasons the person desires the MPCA to hold a public informational meeting and the issues that the person would like the agency to address at the public informational meeting.

Contested Case Hearing

A contested case hearing is a formal proceeding before an administrative law judge empowered to advise the MPCA regarding issues of fact. As described in Minn. R. 7000.1800, persons who submit petitions for a contested case hearing must also state the issues they propose to address in a contested case hearing, the specific relief requested or resolution of the matter, and the reasons (which may be in the form of proposed findings) supporting an MPCA decision to hold a contested case hearing. Failure to comply with these rules exactly may result in a denial of the request. To the extent known, the petitioner may also submit a list of prospective witnesses to be called at a hearing, a proposed list of publications, references, or studies to be introduced at a hearing and the approximate time required for the petitioner to present the matter at a hearing. The decision whether to hold a contested case hearing will be made under Minn. R. 7000.1900.

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota
1/21/2017

Farm Name	Neitzel to Joseph Schouvieller
Address or County	
Evaluator	
Date	5-9-2018

Clear All

OFFSET Annoyance-free 96%

Source Edge to Nearest Neighbor (ft)	1900
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Swine Finishing - deep pit	122	200	1	24400	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources

Add Source Type

Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	

Add a Control Technology

Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources

Add a Source Type

Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	

Add Control Technology

Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota
1/21/2017

Farm Name	Neitzel to Wiltscheck
Address or County	
Evaluator	
Date	5-9-2018

Clear All

OFFSET Annoyance-free
97%

Source Edge to Nearest Neighbor (ft)	2800
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Swine Finishing - deep pit	122	200	1	24400	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources

Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	

Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources

Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	

Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota
1/21/2017

Farm Name	Neitzel to Thul
Address or County	
Evaluator	
Date	5-9-2018

Clear All

OFFSET
Annoyance-free
98%

Source Edge to Nearest Neighbor (ft)	3400
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Swine Finishing - deep pit	122	200	1	24400	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
Earthen manure storage	Rectangle			0	None
User added	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources

Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	

Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources

Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	

Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Odors From Feedlots Setback Estimation Tool

OFFSET Ver 2.0
University of Minnesota
1/21/2017

Farm Name	Neitzel to Kerkhoff
Address or County	
Evaluator	
Date	5-9-2018

Clear All

OFFSET Annoyance-free 98%

Source Edge to Nearest Neighbor (ft)	3400
Source Edge to Property Line (ft)	

Building Sources

Building Type	Width (ft)	Length (ft)	# of Similar Sources	Total Area (sqft)	Control Technology	% air treated
Swine Finishing - deep pit	122	200	1	24400	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	None	
None				0	Biofilter	

AREA SOURCES

Source Description	Shape	Width (ft) (or Dia)	Length (ft)	Area (sqft)	Control Technology
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None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None
None	Rectangle			0	None

Building Sources	
Add Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add a Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

Area Sources	
Add a Source Type	
Name of Source	
Odor Flux (ou/s/m2)	
H2S Flux (ug/s/m2)	
NH3 Flux (ug/s/m2)	
Documentation	
Add Control Technology	
Name of technology	
Odor reduction (%)	
H2S reduction (%)	
NH3 Reduction (%)	
Documentation	

REDWOOD COUNTY ENVIRONMENTAL OFFICE

Planning & Zoning ● Parks & Trails ● GIS
Aquatic Invasive Species ● Septic Inspector
Drainage Inspector ● Agricultural Inspector

PO BOX 130
REDWOOD FALLS
MINNESOTA 56283
PH: 507-637-4023

TO: **Whom It May Concern**

FROM: **Nick Brozek**
Land Use and Zoning Supervisor
Redwood County Environmental Office

DATE: **May 4th, 2018**

RE: **Notice of Public Hearing on Animal Confinement Feedlot Conditional Use Permit Application**

Please find enclosed a *Notice of Public Hearing* regarding an *Animal Confinement Feedlot Conditional Use Permit Application* filed by Charles Neitzel pursuant to Section 17, Subd. 3 and Section 25 of Redwood County Zoning Ordinance, for the construction and operation of a new swine feedlot. The proposed feedlot will include one total confinement barn housing 3300 head of swine between 55 and 300 pounds in weight (990 State Animal Units, or 1320 County Animal Units), with under floor concrete liquid manure storage, on the following described property, situated in the County of Redwood, State of Minnesota, to wit:

The North Half of the Southwest Quarter (N1/2 SW1/4) of Section 26, Township 112 North, Range 34 West, Sherman Township.

A public hearing thereon will be held before the Redwood County Planning Commission at the regularly scheduled Planning Commission meeting starting at 1:00 o'clock p.m. on Monday, the 21st day of May, 2018, at the Board Room of the Redwood County Government Center located at 403 South Mill Street, Redwood Falls, MN 56283.

Pursuant to Redwood County Zoning Ordinance, all property owners of record within five hundred (500) feet in incorporated areas and/or one-quarter (1/4) of a mile of the affected property or the ten (10) properties nearest to the affected property, whichever would provide notice to the greatest number of landowners in the unincorporated areas, the township in which the affected property is located, and all municipalities within two (2) miles of the property are required to be notified in writing of the time and place of the public hearing.

If you have any comments or questions regarding this matter, please contact the Redwood County Environmental Office by telephone at (507) 637-4023 or in writing at *Redwood County Environmental Office, P.O. Box 130, Redwood Falls, MN 56283*, and/or attend the Public Hearing at the time and date set forth in the *Notice of Public Hearing* enclosed herein.

Enclosure

Cc: Charles Neitzel (w/ encl)
Jeff Bauman (w/ encl)

REDWOOD COUNTY ENVIRONMENTAL OFFICE

Planning & Zoning ● Parks & Trails ● GIS
Aquatic Invasive Species ● Septic Inspector
Drainage Inspector ● Agricultural Inspector

PO BOX 130
REDWOOD FALLS
MINNESOTA 56283
PH: 507-637-4023

NOTICE OF PUBLIC HEARING

An *Animal Confinement Feedlot Conditional Use Permit Application* has been filed by Charles Neitzel pursuant to Section 17, Subd. 3 and Section 25 of Redwood County Zoning Ordinance, for the construction and operation of a new swine feedlot. The proposed feedlot will include one total confinement barn housing 3300 head of swine between 55 and 300 pounds in weight (990 State Animal Units, or 1320 County Animal Units), with under floor concrete liquid manure storage, on the following described property, situated in the County of Redwood, State of Minnesota, to wit:

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If you have any comments or questions regarding this matter, please contact the Redwood County Environmental Office by telephone at (507) 637-4023 or in writing at *Redwood County Environmental Office, P.O. Box 130, Redwood Falls, MN 56283*.

DATED: May 4th, 2018

Nicholas W. Brozek
Land Use & Zoning Supervisor
Redwood County Environmental Office

AFFIDAVIT OF SERVICE VIA U.S. MAIL

STATE OF MINNESOTA)
) ss
COUNTY OF REDWOOD)

RE: ***Animal Confinement Feedlot Conditional Use Permit Application*** **submitted by Charles Neitzel**
Permit Application No. 1-18

I, Lali Ortega, a person not less than eighteen (18) years of age, being first duly sworn upon oath, hereby state a copy of the following:

1. **Notice of Public Hearing on *Animal Confinement Feedlot Conditional Use Permit Application*; and**
2. **Notice of Public Hearing**

were duly served upon:

CHARLES NEITZEL
41687 300 ST
MORTON, MN 56270

RICHARD'S LIFE INSURANCE TRUST
%JAMES LUX
28303 SARATOGA AVE
MORGAN, MN 56266

TODD & CANDAS SCHOUVIELLER
43564 300 ST
MORGAN, MN 56266

GREENFIELD LLP
% CHARLES R NEITZEL
1119 SOUTHRIDGE RD
NEW ULM, MN 56073

EISENBARTH GIRLS TRUST
% GERALYN LYLE
1207 S HALVORSON ST
REDWOOD FALLS, MN 56283

TOM & KRISTY ENGEL
LIMITED PARTNERSHIP
28693 CO HWY 11
MORGAN, MN 56266

DANIEL F & CAROL A BILLMEIER
LIVING TRUSTS
30262 PORTER AVE
MORTON, MN 56270

TODD ROSE FARMS LLC
33254 330 ST
MORGAN, MN 56266

JOSEPH M SCHOUVIELLER
29124 SARATOGA AVE
MORGAN, MN 56266

SCOTT J & LISA K THUL
29118 CO HWY 11
MORGAN, MN 56266

DENISE KIRSCHSTEIN
TOWNSHIP CLERK
33297 OCEAN AVE
REDWOOD FALLS, MN 56283

JEFF BAUMANN
1700 TECHNOLOGY DR NE #130
WILLMAR, MN 56201

DAVID L & BONNIE L MATHIOWETZ
415 LINDSEY AVE
MORGAN, MN 56266

by enclosing a copy of the same in an envelope, with postage prepaid, and depositing said envelope in a United States Postal Service mailbox located at Redwood Falls, Minnesota on or about the 4th day of May, 2018.

Lali Ortega
Lali Ortega
Environmental Administrative Assistant

Subscribed and sworn to before me, a Notary Public, on this 4th day of May 2018, by Lali Ortega.

NICHOLAS W BROZEK
Notary Public
Minnesota
My Commission Expires 01/31/2019

Notary Public