



# STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
CHUCK GIPP, DIRECTOR

April 27, 2017

City of Grinnell  
Attn: Jan Anderson  
927 4<sup>th</sup> Ave  
Grinnell, IA 50112

RE: WWTF Improvements Project  
DNR Project No. 2014-0189A

Subject: Variance Request from 567 IAC 64.2(9) and Design Standards Section 17.3.4.3

Dear Mr. Anderson:

After careful and thorough consideration, the Department has approved your February 16, 2017 request for a variance from Iowa Administrative Code Subrule 64.2(9) and Chapter 17.3.4.3 of the Iowa Wastewater Facilities Design Standards, which requires installation of aeration equipment in sludge holding tanks with a minimum capacity of 1 HP per 1000 ft<sup>3</sup> to ensure adequate mixing.

Based on the documentation presented by your Engineer, it is the determination of this Department that satisfactory justification has been presented to warrant the granting of a variance for sludge storage with aeration equipment below the required capacity. The requested variance is deemed to be reasonable and necessary pursuant to the Iowa Code section 455B.181.

The facts presented for the project present unique circumstances and the variance is therefore justified to provide the narrowest exception possible to the provisions of the rule in accordance with Rule 561 IAC 10.5. Since the project planning and construction may last more than one year, the variance is considered to be of a permanent nature. The validity of this variance approval shall last for a period of one year from the date of the construction permit in accordance with Rule 561 IAC 10.5.

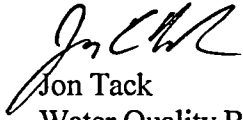
This decision is based on our review of justification presented to support the request. Our concurrence with the request is based on the Department's finding that the resulting project will provide substantially equivalent effectiveness as would be provided by technical compliance with the design standard on this issue.

This variance approval is subject to the following conditions and requirements:

1. Should the Department determine that nuisance odors are occurring, then aeration equipment should be installed per 17.3.4.3.

Please feel free to call Laura Knispel at 515-725-8423 or email her at [laura.knispel@dnr.iowa.gov](mailto:laura.knispel@dnr.iowa.gov) if you have any further questions.

Sincerely,



Jon Tack  
Water Quality Bureau Chief

Cc: Veenstra and Kimm – West Des Moines (Libby Patton)  
DNR FO #5  
CWSRF File CS1920762 01

**VARIANCE REQUEST**  
Iowa Department of Natural Resources

1.	Date:	April 27, 2017	14a.	Decision:	Approved
2.	Reviewer/Engr.:	Laura Knispel		Date:	April 27, 2017 <i>JK</i>
3.	Date Received:	February 16, 2017	14b.	Expiration Date (if any):	
4.	Facility Name:	Grinnell WWTF			
5.	Facility Number:	6-79-30-0-01			
6.	County Number:	79 (Poweshiek)	15.	Appealed:	
7.	Program Area:	CP (Wastewater Construction)		Date:	
8.	Facility Type:	C09 366-Sludge Holding Aeration &			
9.	Subject Area:	Mixing			
10.	Rule Reference:	567-64.2(9) a			
11.	Design Std. Ref.:	17.3.4.3			
12.	Consulting Engr.:	Veenstra & Kimm			
13.	Variance Rule:	567-64.2(9) c			
<b>16. Description of Variance Request:</b> The City of Grinnell is upgrading their WWTF and is requesting to install 0.66 HP/1000 CF for mixing in their sludge storage tank instead of 1 HP/1000 CF as required by Iowa Wastewater Design Standard 17.3.4.3.					
<b>17. Applicant's/Consulting Engineer's Justification:</b> The City of Grinnell currently has 0.66 HP/1000 CF in their existing sludge storage tanks and have not had any problems with insufficient mixing or odors. The sludge will be fully treated in an aerobic digester prior to storage and the WWTF is in an isolated location, so nuisance odors should not be an issue.					
<b>18. Department's Justification:</b> Approval is recommended based on the stability of the generated sludge and previous successful operation under the same design conditions by the City. A condition will be included in the construction permit that will require installation of aeration/mixing equipment per 17.3.5.3 if nuisance odors result.					
<b>19. Precedents Used:</b> Grinnell - 9/94 (0.66 HP/1000 CF) Cherokee - 7/99 (0.7 HP/1000 CF) Ames - 7/14 (0.35 HP/1000 CF)					
20.	Staff Reviewer:	<i>L Knispel</i>	Date:	<i>4/27/17</i>	<i>JCO 4/27/17</i>
21.	Supervisor:	<i>Satya Chempath</i>	Date:	<i>4/28/17</i>	
22.	Authorized by:	<i>J E K</i>	Date:	<i>5/3/17</i>	

**Explanation of item numbers:**

- #1 – Date starting process
- #3 – Date stamped received by Iowa DNR
- #4 – Must always be filled in, even in variance for Iowa DNR
- #11 – If doesn't apply, note "n/a"
- #13 – Rule allowing for an exception
- #14a – "Approved" or "Denied "
- #14b – If variance is permanent, note "permanent" per legal.
- #15 – Date of Decision (#14)
- #16 – Summarize (4-5 short sentences) **with** attached documentation
- #17 – Summarize (4-5 short sentences) **with** attached documentation
- #18 – Summarize (4-5 short sentences) **with** attached documentation
- #19 – Summarize (4-5 short sentences) **with** attached documentation
- #21 – Supervisor
- #22 – Bureau Chief (sometimes same as supervisor)

**Note:**

#16, #17, #18, & #19: the Reviewer/Engineer summary is important as the technical and knowledgeable entity for the subject matter. Including the attachments is helpful but the Customer Service Team is uncomfortable attempting to summarize the attachments on your behalf.

**VEENSTRA & KIMM, INC.**

3000 Westown Parkway • West Des Moines, Iowa 50266-1320

515-225-8000 • 515-225-7848 (FAX) • 800-241-8000 (WATS)

January 27, 2017

Laura Knispel  
Wastewater Engineering Section  
Iowa Department of Natural Resources  
502 E. 9th Street  
Des Moines, Iowa 50319

GRINNELL, IOWA  
WASTEWATER TREATMENT FACILITY IMPROVEMENTS  
PETITION FOR VARIANCE

Enclosed is a copy of the Petition for Variance for the biosolids storage tank for the City of Grinnell.

The City of Grinnell requests use of 0.66 horsepower per 1,000 ft<sup>3</sup> in its biosolids storage tank, rather than the recommended 1.0 horsepower per 1,000 ft<sup>3</sup> due to an analysis of the conditions in the tank proposed for in the City of Grinnell and success in similar cases in other projects throughout Iowa.

If you have any questions or comments, please contact us at 225-8000.

VEENSTRA & KIMM, INC.

A blue ink signature of Todd W. Penisten, written in a cursive style.

Todd W. Penisten

TWP  
288116  
Enclosure  
cc: Jan Anderson, City of Grinnell w/enclosure

A blue ink stamp that reads "RECEIVED FEB 16 2017". The word "RECEIVED" is in a bold, sans-serif font, and the date "FEB 16 2017" is in a smaller, sans-serif font.

## **PETITION FOR VARIANCE**

### **Iowa Administrative Code 561-10.9**

**10.9(1) – Name of Petitioner:** City of Grinnell

**10.9(1) – Address & Telephone Number of Petitioner:**

**Address:** City of Grinnell  
927 4<sup>th</sup> Avenue  
Grinnell, Iowa 50112-2043

**Phone Number:** (641) 236-2600

**10.9(1) – Case Number of Related Contested Case:** Not Applicable

**10.9(2) – Description/Citation of Specific Rule:**

17 Sludge Handling & Disposal  
17.3 Sludge Stabilization and Holding  
17.3.4 Sludge Holding Tanks  
17.3.4.3 Mixing and Air Requirements  
17.3.4.3b Mechanical Aeration Systems

If mechanical aerators are utilized, a minimum of 1.0 horsepower per 1000 ft<sup>3</sup> shall be provided. Use of equipment is discouraged when freezing temperatures are normally expected.

**10.9(3) – Specific Variance Requested:** Request variance to allow 0.66 horsepower per 1,000 ft<sup>3</sup>.

**10.9(4) – Relevant Facts & Justification:** The proposed mixing system has been designed on a rational basis to maintain a mixing velocity in the basin so a uniform solids concentration can be maintained prior to and during withdrawal and application. Additionally, a number of communities in Iowa have received similar variances from this rule and are operating very well. The treatment facility is in an isolated location and odors should not be an issue. The stored biosolids will have been previously treated in an aerobic digester and will be very stable.

**10.9(5) – History of Prior Contacts:** Construction Permit application submitted November 21, 2016.

**10.9(6) – Information Known to Petitioner Regarding IDNR Treatment of Similar Cases:**

City of Grinnell. Approved 9/94. 0.66 HP/1,000 ft<sup>3</sup>  
City of Cherokee. Approved 7/99. 0.70 HP/1,000 ft<sup>3</sup>  
City of Iowa Falls. Approved 10/95. 0.66 HP/1,000 ft<sup>3</sup>  
City of Mount Pleasant. Approved 8/99. 0.27 HP/1,000 ft<sup>3</sup>  
City of Charles City. Approved 1/03. 0.48 HP/1,000 ft<sup>3</sup>  
City of Marshalltown. Approved 10/89. 0.33 HP/1,000 ft<sup>3</sup>  
City of Ames. Approved 7/1/2014, 0.35 HP/1,000 ft<sup>3</sup>

**10.9(7) – Name, Address, and Telephone Number of Public Agency, Political Subdivision of the State or Federal Government which also Regulates the Activity in Question, or Might be Affected by the Granting of a Waiver or Variance:** None

**10.9(8) – Name, Address, and Telephone Number of any Person or Entity that Would be Adversely Affected by the Granting of the Petition:** None

**10.9(9) – Name, Address, and Telephone Number of any Person with Knowledge of Relevant Facts Relating to the Proposed Waiver or Variance:**

**Name:** Veenstra & Kimm, Inc. – Consultant  
**Contact Person:** Forrest Aldrich, P.E.

**Address:** 3000 Westown Parkway  
West Des Moines, Iowa 50266

**Telephone Number:** 515-225-8000

**Name:** City of Grinnell  
**Contact Person:** Jan B. Anderson, Water Resources Director

**Address:** 927 4<sup>th</sup> Avenue, Grinnell, Iowa 50112-2043

**Telephone Number:** (641) 236-2600

**10.9(10) – Signed Releases Authorizing Persons with Factual Knowledge of Relevant Facts Concerning the Variance:**

**IOWA ADMINISTRATIVE CODE 561 – 10.11**

**10.11(17a, 455A) – Notice by Certified Mail:**

This Petition is duly submitted this 24 day of January, 2017 by the City of Grinnell as Petitioner. The Petitioner attests to the accuracy of the facts provided in this Petition and the statements of reasons that the Petitioner believes justify this variance request.

  
\_\_\_\_\_  
City of Grinnell

  
\_\_\_\_\_  
Project Engineer  
Veenstra & Kimm, Inc.

VARIANCE REQUEST NOTIFICATION  
Iowa Department of Natural Resources

**All Fields are Required**

1. Reviewer/Engr.: <u>Laura Knispel</u>	7. Decision: <u>Approval</u>
2. Date Received: <u>April 27, 2017</u>	Date: <u>April 27, 2017</u>
3. Facility Name: <u>Grinnell WWTF</u>	
4. Program Area: <u>CP Wastewater Construction</u>	
5. Subject Area: <u>Mixing</u>	
6. Rule Reference: <u>17.3.4.3</u>	

8. Description of Variance Request: **Summarize (250 characters)**

The City of Grinnell requested a variance to install mixing equipment in the sludge storage tank that is below the requirements listed in 17.3.4.3 (0.66 HP/1000 CF in lieu of 1 HP/1000 CF)

9. Department's Justification: **Summarize (250 characters)**

Approved. The City currently operates the same level of mixing in the existing sludge storage tank. The sludge will be digested prior to storage and the WWTF is in an isolated location.

10. Type name:

Jon Tack

\_\_\_\_\_  
Supervisor/Bureau Chief/DA

5/3/2017

\_\_\_\_\_  
Date

\*The original, approvals, letters, code and other supporting documentation is to be maintained by the program in accordance with the [Records Retention Schedule](#).

**To Submit: Attach this form to an email and send it to [Webmaster@dnr.iowa.gov](mailto:Webmaster@dnr.iowa.gov) with the subject line: Variance Submittal (542-0541)**