

17.5.2

5/8/84

To: Fil  
From: Larry Hargreaves

Re: Carroll sludge lagoon  
Variance request

17.3.5 chapter 17 - Design Standards

A request for a variance not to require aeration in the proposed sludge lagoon was received May 4, 1984.

It was decided to grant the variance on the concept the standard is contradictory. On the one hand it says a sludge lagoon should not be used for as a sludge volume reduction process but on the other hand aeration must be provided. If aeration is provided over the long term it would be impossible not to have some reduction.

A sludge lagoon can be used for sludge dewatering but if a sludge lagoon with anaerobic sludge is aerated it would be difficult to achieve dewatering.

We will grant a variance on Carroll project and maintenance if requested.

5/2/81

## Carol Variance Sludge Lagoon,

The standards appear to be inconsistent:

1. In 17.5.2 sludge lagoons can be used for sludge dewatering but aeration is not required. In 17.3.5 where sludge lagoons are used for holding which may include supernatant separation, aeration is required.

The need for aeration is for odor control, apparently. It would seem that aeration or no aeration would be as critical for one as the other.

2. The standards say sludge lagoons should not be used for digestion. On the other hand, if aeration is put in a sludge lagoon, in the case of mechanical aeration the same horsepower as an aerobic digester, digestion would be accomplished. The standards appear to say one thing but require something different.



Henningson, Durham & Richardson

8404 Indian Hill Drive  
Omaha, NE 68114  
(402) 399-1000

May 2, 1984

Iowa Department of Water and Waste Management  
Henry A. Wallace Building  
900 East Grand  
Des Moines, Iowa 50319

Attention: Mr. Billy Chen

Regarding: Carroll, Iowa Digester Modification and Sludge Lagoon  
HDR Project No. R753-83-06

Dear Mr. Chen:

In accordance with a phone conversation with Mr. Lavoy Haage of your office, we herewith request a variance from State regulations for the above referenced project.

Iowa Wastewater Facilities Design Standards, Chapter 17, Sludge Handling and Disposal paragraph 17.3.5 Sludge Holding Lagoons requirements state "Lagoon shall be designed for mixing by satisfactory aeration equipment."

As stipulated in our letter of March 15th, 1984, the City intends to use the lagoon during periods of inclement weather when sludge cannot be land applied. These facilities are provided with appurtenances to effectively separate and withdraw supernatant. They are intended to be used as a temporary holding facility until such time as the sludge may be land applied. The facility is a stop-gap measure to allow the City of Carroll to meet a planned capital improvement program. An additional digester was considered but found to be outside of their present funding program.

It is therefore requested that a variance be granted to permit the City of Carroll to construct the sludge lagoon facility without aeration mixing equipment.

Please let me know if any other additional information is needed.

Yours very truly,

HENNINGSON, DURHAM & RICHARDSON, INC.

Robert D. Catton, P.E.

Vice President

Environmental Engineering Division

cc: Randall M. Krauel

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IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

DOF

AGENDA ITEM FOR MEETING: June 18, 1984

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PRESENTED BY: Joseph E. Obr

MINUTES 10

AUTH.

SUBJECT: Variances

RECOMMENDATION: Information item

BACKGROUND:

<u>Applicant</u>	<u>Location</u>	<u>Action</u>	<u>Date</u>	<u>Activity</u>
1. City of North Liberty	North Liberty	Denied	3-14-84	Water supply well
2. Burlington Water Works	Burlington	Granted	3-21-84	Water supply well
3. City of Garrison	Garrison	Granted	3-23-84	Water supply well
4. City of Manilla	Manilla	Denied	4-4-84	Sewer-well separation
5. City of Fonda	Fonda	Granted	5-1-84	Open burning
6. City of Carroll	Carroll	Granted	5-2-84	Sludge lagoon
7. J.E. Biggerstaff	Des Moines	Denied	4-2-84	Open burning
8. Univ. Hygienic Lab.	Iowa City	Granted	4-6-84	Smoke school

JUSTIFICATION

1. Rule requires all new wells be equipped with a means of measuring flow. Request was to use "elapsed time" meters on the pumps rather than a flow meter. Denied on the basis that elapsed time meters are quite inaccurate, difficult to calibrate, and a flow meter can easily be installed at minimal expense.
2. Burlington requested they be allowed to have a 3 inch gravel pack well and the rules require 4 inches. Variance was granted since the proposed well is for a backup or emergency source only and it is felt that the rare and intermittent use justifies a three inch gravel pack. A second request was in regard to elevation of the top of the well in regard to the 100 year flood. The proposed well does not meet the standard but it is a sealed unit and since the rule is clearly intended to prevent surface contamination from flood water, it was deemed that a sealed casing provides equivalent protection and the variance was granted.

COMMISSION ACTION:

MOTION: \_\_\_\_\_ SECOND: \_\_\_\_\_ RESULT: \_\_\_\_\_



Variances

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3. The City of Garrison requested the use of a smaller pitless unit than the rule specifies. The engineer is specifying a larger casing than would otherwise be prudent since they feel they may have to drill deeper at a later date. A larger size pitless adapter is not needed for the initial operation and would cost considerably more. Since the casing is oversized to accomodate a failure contingency rather than a present need, the variance was granted.
4. Manilla requested a variance from the rule that requires sewers to be a minimum of 25' from a municipal well. The reason given was to accomodate the well structure and public toilets in a common building. Variance was denied on the basis that a lesser distance does not provide equivalent protection and building separate structures is not very expensive.
5. Fonda requested to burn storm debris from buildings and trees. Such burning is exempt if disaster has formerly been declared. A disaster was not declared in this instance but it was felt that equivalent protection of health would be provided by this limited burning as opposed to more conventional disposal.
6. The City of Carroll requested a variance from the rule which requires ~~sludge holding lagoons~~ to be aerated. The rule here appears to be somewhat contradictory. Lagoons cannot be used to accomplish treatment of sludge or to reduce volume. Aeration for anything much longer than a few days would surely be providing additional treatment. Also, aerating solids from a digester will likely aggravate rather than prevent an odor problem, therefore the variance was granted.
7. Request was to burn railroad ties. Such requests have consistently been denied as it is felt that equivalent effectiveness is absent and other disposal means are available.
8. This request is for a smoke generator utilized in training and testing personnel to obtain certification to do opacity readings. Variance is routinely granted annually as there is no known alternative and the operation does not threaten health.

HENRY A. WALLACE BUILDING  
DES MOINES, IOWA 50319

RECORD COPY

CONSTRUCTION File Name Carroll, sewage

Senders Initials Billy Chen

Permit No.: 84-157-S

City Clerk  
City Hall  
Carroll, Iowa 51501

File: Carroll - Sewage

Re: Digester Modification & Sludge Lagoon

WAWM Project No.: 577-891

In accordance with the provisions of Sections 455B.173.9 and 455B.174.4 Code of Iowa, and Rule 900--54.2(455B) or Rule 900--65.5(455B), or Rule 900--41.12(455B) of the Iowa Administrative Code, the Executive Director of the Department of Water, Air and Waste Management does hereby Issue a permit for the construction of:

Upgrading the existing standard rate digester to a high rate digester, also construct sludge storage lagoon at the waste treatment facility site. The air and mixing equipment are not required to be provided for the sludge storage lagoon.

The construction of the project shall be initiated within one year of issuance of this permit or this permit is no longer valid. Within thirty days after completion of construction, the permit holder shall submit a certification by a registered professional engineer that the project was completed in accordance with the approved project documents.

Pursuant to Section 455B.174.4, Code of Iowa, and Rule 900--60.4, you have the right to appeal any condition of this permit by filing with the Executive Director of the Department of Water, Air and Waste Management a notice of appeal and request for administrative hearing within thirty days of receipt of this permit.

Contact Billy C. Chen at 515/281-8974 with any questions or comments.

For the Department of Water, Air and Waste Management:

Stephen W. Ballou, Executive Director

By:

Larry Hoag  
PROGRAM OPERATIONS DIVISION

Date:

May 21, 1984

cc: HDR, Omaha, NE  
WAWM Region 4

LH:BCC:WNPW137M02.01

Plan Distribution

1 Engineer; 1 Region; 1 WAWM File