

✓ 9-8-06

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date: January 24, 2006
2. Review Engineer: Larry Bryant
3. Date Received: January 19, 2006
4. Facility Name: City of Riverside WWTF
5. County Number: 92 (Washington)
6. Program Area: CP (Wastewater Construction)
7. Facility Type: C05 (Biological Treatment)
8. Subject Area: 320 (Sludge Lagoon - Aeration)
9. Rule Reference: 567-64.2(9)a
10. Design Stds Ref: 17.3.5.3 (Mixing and Air Requirements)
11. Consulting Engr: McClure Engineering Company
12. Variance Rule: 567-64.2(9)c

13. **Decision:** *approved*
Date: *1/25/06*
14. **Appeal:**
Date:

15. Description of Variance Request:

The City of Riverside is constructing a new mechanical treatment facility at the site of its existing 3-cell controlled discharge lagoon. The mechanical facilities include an aerobic digester for stabilization/storage of waste sludge. The existing lagoon cells are to be retained and configured to provide equalization and additional sludge storage. A variance to eliminate the aeration requirements for mixing as required by IA 17.3.5.3 has been requested.

16. Consulting Engineer's Justifications

"...the aerobic sludge tank is designed to provide a minimum of 54 days storage in addition to storage in the ISAM tanks. Other ISAM/SAM/SBR systems in operation seldom waste sludge outside of the concrete tanks. At least one system has never wasted sludge outside of the aerobic sludge storage tank. With the design of the ISAM/SAM/SBR system, sludge wasting to the lagoon is unlikely to be required. In the event sludge is wasted, existing Lagoon Cell # 2 is the cell intended for that use. Sludge wasting should be very minimal if required."

17. Department's Justifications

Recommend variance approval (with condition):

The argument that wasting to the lagoon is unlikely to be required is not valid given that the aerobic digester and ISAM tanks (basically Imhoff tanks) alone will not provide 120 days of storage at design capacity. However, solids will be stabilized by the aerobic digester prior to placement in the lagoon. Nuisance odors that could result from non-aerated storage are the primary concern with respect to this variance request. A condition will be included in the construction permit that will require installation of aeration equipment per IA 17.3.5.3 if nuisance odors result.

18. Precedents Used

City of LeMars - Approved 11/3/03
City of Sully - Approved 4/10/96
City of Ames - Approved 3/9/87

City of Evansdale - Approved 4/12/02
City of Maquoketa - Approved 11/1/95

19. Staff Reviewer: *Larry Bryant*

Date: *1/24/06*

19. Authorized by: *Donna Jensen*

Date: *1/25/06*

January 19, 2006

Mr. Larry Bryant
Iowa Department of Natural Resources
502 East 9th Street
Wallace State Office Bldg.
Des Moines, IA 50319

RE: Sanitary Sewer Main, Force Main and Water Main Imp. 2005
Riverside, Iowa
MEC 135024

Dear Larry:

Please consider this letter a request for variance for construction of a non aerated sludge storage basin. Using the ISAM/SAM/SBR/Aerated sludge system, the aerobic sludge tank is designed to provide a minimum of 54 days storage in addition to storage in the ISAM tanks. It is likely that sludge may be stored in the aerated sludge storage tank with little or no additional storage space. Other ISAM/SAM/SBR systems in operation seldom waste sludge outside of the concrete tanks. At least one system has never wasted sludge outside of the aerobic sludge tank.

With the design of the ISAM/SAM/SBR system, sludge wasting to the lagoon is unlikely to be required. In the event sludge is wasted, existing Lagoon Cell #2 is the cell intended for that use. Sludge wasting should be very minimal if required.

If you have any questions, please let me know.

Very truly yours,

McCLURE ENGINEERING COMPANY

Michael F. Trotter, P.E. & L.S.