

VARIANCE REQUEST
Iowa Department of Natural Resources

1.	Date: August 31, 1995	13.	Decision: <i>Approved</i>
2.	Review Engineer: Bill Graham		Date: <i>9/1/95</i>
3.	Date Received: August 30, 1995		
4.	Facility Name: Belmont WWTP	14.	Appeal:
5.	County Number: 99		Date:
6.	Program Area: CP (wastewater construction)		
7.	Facility Type: C09		
8.	Subject Area: 366 (Sludge holding tank, aeration and mixing)		
9.	Rule Reference: 900-64.2(9)a		
10.	Design Stds Ref: 17.3.4.3; Mixing and Air Requirements		
11.	Consulting Engr: Kuehl and Payer		
12.	Variance Rule: 900-64.2(9)c		

15. Description of Variance Request:

Design Standard 17.3.4.3 requires aeration and mixing in sludge storage tanks. The city is proposing a covered sludge storage tank with multi level drawoffs to enhance thickening, mixing by recirculation from bottom to top and no aeration.

16. Consulting Engineer's Justifications

The digester will be covered and the vent will be filtered so that there will be no problems with odors. Detention time in the sludge storage tank will be 180 days and detention time in the new anaerobic digester will be 34 days. Required detention time in the new anaerobic digester is less than 20 days so there is significant reliability in the digester even after extended equipment downtime. There would be no foreseeable situation in which raw sludge would be put into the storage tank. It is expected that significant sludge thickening will occur in the sludge storage tank and excessive aeration and mixing would interfere with this process. The proposed sludge storage tank is currently used as an anaerobic digester.

17. Department's Justifications

Departmental approval for the variance request is recommended because the tank is covered and the vent is filtered to prevent odors from escaping. The reason for the standard is to prevent an anaerobic condition in the upper layers of the stored sludge which could cause the release of nuisance odors. Adequate mixing will be provided to prevent stratification and settling prior to land application.

18. Precedents Used

Variances were granted to Creston and Indianola for a covered sludge storage tanks with no aeration.

19. Staff Reviewer: *William Graham* Date: 8-31-95

20. Supervisor: *Ryan Farnham* Date: 8/31/95

21. Authorized by: *Samuel Walt* Date: 9/1/95