

13.4.1

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date : 3-2-93 13. Decision: *Approved conditionally*
 2. Review Engineer : Terry Kirschman Date: 3/10/93
 3. Date Received : 2/15/93
 4. Facility Name : Johnston WWTP 14. Appeal:
 5. County Number : 77 Date:
 6. Program Area : CP
 7. Facility Type : CO2
 8. Subject Area : 315 and 370
 9. Rule Reference : 567-64.2(9)a
 10. Design Std. Ref. : 13.4.1
 11. Consulting Engr. : Ueenstra and Kinn, Inc.
 12. Variance Rule : 567-64.2(9)c

15. Description of Variance Request

Provide only one installed pump for
 design pumping rate. Storage lagoons
 would be used to store wastewater
 until the pump station is up and
 running.

16. Consulting Engineer's Justification

Pump operations do not have to
 assure continuous operations because
 of the lagoon storage for backup.

16. Consulting Engineer's Justification (cont.)

17. Department's Justification

The approach is equivalent to the reliability provided by our standards provided a backup pump can be installed without a significant delay. We should not rely on an equipment supplier to repair the installed unit before irrigation continues.

The variance request can be approved conditionally. An uninstalled pump should be provided as backup.

18. Precedents Used

19. Staff Reviewer

:

Terry Kinschman

Date: 3/2/93

20. Supervisor

:

[Signature]

Date: 3/2/93

21. Authorized by

:

Daniel M. [Signature]

Date: 3/10/93



FERRY E. BRANSTAD, GOVERNOR

RECORD COPY

File Name Johnston Sewage File

Senders Initials TLK

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

March 10, 1993

Mr. Robert E. Hays
6221 Merle Hay Road
P.O. Box 410
Johnston, Iowa 50131

RE: Johnston Treatment Plant - Irrigation Pumping Station
Johnston, Iowa
CS192046 01

Dear Mr. Hays:

The Iowa Department of Natural Resources in accordance with Subrule 567-64.2(9)c of the Iowa Administrative Code has considered Veenstra and Kimm's February 15, 1993, request to not apply Chapter 13 of Iowa's design standards to their irrigation pumping station. The Iowa Department of Natural Resources has reviewed the irrigation pumping station system for reliability and equivalency comparable to Chapter 13. We offer the following:

1. Pumping Rate and Number of Units- Iowa Design Standard 13.4.1 requires at least two pumps, each capable of handling the expected PHWW flow. Johnston believes only one installed pump is necessary because pumping operations are not designed to be continuous. The vertical turbine irrigation pump could be replaced without disrupting the overall operations of the plant. Your request for a variance from Iowa Design Standard 13.4.1 is approved provided a spare vertical turbine irrigation pump capable of pumping 450 gpm is retained on site during the irrigation season for immediate backup replacement.
2. Pump Openings- Design Standard 13.4.3 requires pumps with the capability of handling spheres at least 3 inches in diameter. Because of the quality of water in Reservoir No. 2, Johnston has elected to provide water supply rather than non-clog wastewater pumps. Your request for a variance from Iowa Design Standard 13.4.3 is approved provided the lagoon effluent is adequately screened. Although access to the wet well is proposed, this operating concern was not fully addressed in the February 12, 1993, response. Some of the solids, debris, and critters from the storage ponds will be larger than 1/4 inch. A convenient and adequate means for screening large solids prior to pumping must be provided to insure reliable operations.
3. Access-Design Standard 13.3.2.3 requires a suitable and safe means of access to wet wells containing mechanical equipment requiring inspection or maintenance. Johnston is proposing the use of an access hatch 20 inches or larger (2/16/93 letter). Your request for an access hatch as small as 20 inches is denied. The minimum diameter should be at least 22 inches (IA 12.5.7.3).

4. Lighting-Design Standard 13.8.4 requires adequate lighting for pumping stations. Johnston believes lighting is not necessary if the pumping station is not serviced at night. We must deny your request for a variance from design standard 13.8.4. Lighting must be provided because the lift station is designed to operate at night on a routine basis, 18 hours per day assuming weekday and weekend operations for a period of 7 months. Also, there are restrictions (floods, ground frost, groundwater, and rainfall for the application site as well as lagoon maintenance) which may require extended periods of continuous irrigation.

We trust this letter will be of assistance in completing your plans and specifications. Should you have any questions, please call. My telephone number is 515/281-8869.

Sincerely,



Darrell McAllister, Chief
Water Quality Bureau
Iowa Department of Natural Resources

cc: Field Office 5
Veenstra and Kimm, Inc., West Des Moines
Mark Lee, Johnston