

✓ 9-20-06

## VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date: November 9, 1999
2. Review Engineer: Bill Graham
3. Date Received: September 15, 1999
4. Facility Name: Crawfordsville WWTF
5. County Number: 92, Washington
6. Program Area: CP (wastewater)
7. Facility Type : C02
8. Subject Area : 327 (valve pit)
9. Rule Reference: 567-64.2(9)a
10. Design Stds Ref: 13.10.4
11. Consulting Engr: Garden Assoc., Oskaloosa, IA
12. Variance Rule: 567-64.2(9)c

13. **Decision:** *Approved*  
Date: *11/15/99*
14. **Appeal:**  
Date:

15. Description of Variance Request:

The city of Crawfordsville and the Wapello Rural Water Association are requesting a variance from the design standard which requires that valves for submersible pumps be located in a separate valve chamber. Crawfordsville is proposing using buried valves with ten feet of DIP on either side of the valve.

16. Consulting Engineer's Justifications

Crawfordsville is a participant in the Iowa Rural Water Association Small Community Wastewater Pilot Project. The project was the result of several meetings that included USDA Rural Development, the Iowa Rural Water Association, and IDNR. At these meetings affordable ways of providing wastewater treatment for small unsewered communities were discussed. The goals of the project were:

1. Improve Environmental Conditions. Centralized systems would be constructed to eliminate environmental and public health problems caused by failing septic tanks and lateral systems in tight soils.
2. Long Term Compliance. The collection and treatment systems will have a 20 year design life.
3. New Design Concepts. The program is intended to encourage new design concepts. Several variances from the design standards have been allowed based on program participation. None of these have involved new treatment concepts or processes.
4. Immediate Response to Problems: The financial and managerial ability to remedy operation and maintenance problems will be robust since these projects will be owned and operated by rural water associations.
5. Savings and Risks Are Balanced: A group of design engineers and rural water association representatives met with department engineers to "value-engineer" proposed cost saving designs and balance capital savings against increased operation and maintenance costs.
6. Better Management: This goal is to be met through Rural Water Association ownership and management of the wastewater utilities.

Based on participation in the small community pilot program the department has approved several variances from the design standards. Construction of pumping stations without separate valve pits is one of these.

17. Department's Justifications

From March 8, 1995 IDNR letter to the executive director of the Iowa Rural Water Association:

"The Department will accept designs eliminating the valve pit as a value engineering design concept if the check valves can be removed with the pump from the wet well. However, a high water overflow for the wet well will not be approved on the basis that a less reliable pumping station design is installed. Also, ductile iron piping must be used for the force mains near the buried valves. Eliminating a shallow valve pit for these pumping stations may increase the operation and maintenance over the life of the pumping station for the rural water districts to a cost level exceeding the estimated initial cost savings. The planning assumption that buried valves can be maintained at no added expense is not valid. One maintenance event could equal the cost of the structure. We also disagree with the supposition that an excavation pit for valve maintenance is a lesser safety concern." The Department may require a valve pit in the future if wastewater bypassing occurs.

Departmental approval for this variance is recommended since Crawfordsville is one of the small community pilot projects.

18. Precedents Used

Previous pilot program projects.

19. Staff Reviewer: Bill Graham

Date: November 9, 1999

20. Supervisor: 

Date: 11/10/99

21. Authorized by: Jack Riessen

Date: 11/15/99