



THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

13.5.2
Design Variance
TRC
DEPARTMENT OF NATURAL RESOURCES
PAUL W. JOHNSON, DIRECTOR

May 9, 2000

The Honorable Harley D. Hartman
Mayor of Parkersburg
City Hall, 505 Coates Street
Parkersburg, Iowa 50665

SUBJECT: Lift Station Expansion - Design Variance
Parkersburg, Iowa
CS192116 01

Dear Mayor Hartman:

This correspondence is in response to the letters dated February 17, 2000; February 29, 2000; and April 19, 2000 from Ryken Engineering. Mr. Sindelar's letters request a variance from a provision found in Iowa Wastewater Facilities Design Standard 13.5.2. Design standard 13.5.2 (as adopted on March 19, 1985) states that check valves shall be placed on the horizontal portion of discharge piping. Mr. Sindelar was not aware of this requirement until the comment was raised in our letter dated November 19, 1999. If the check valves are placed in the vertical rather than the horizontal run of the discharge piping of the proposed 3.46 mgd suction lift pumping station, the initial cost savings may be as high as \$6,000.

Check valves placed in the vertical run of the discharge piping are not recommended. The design variance for the proposed 3.46 mgd Gorman Rupp pumping station design including vertically positioned check valves is approved as substantially equivalent to the requirements of Design Standard 13.5.2 in accordance with Subrule 567 IAC 64.2(9) with the five following construction and operating conditions:

1. Only Gorman Rupp spring loaded check valves may be installed in the vertical portion of the discharge piping at Parkersburg.
2. The existing pumping station (two 500 gpm pumps) for backup throughout the useful life of the Gorman Rupp pumping station shall be retained or replaced with a pumping station of equal capacity to assure continuity of service at all times without bypassing.
3. The firm pumping capacity of the Gorman Rupp suction lift station shall be immediately upgraded if the PHWW tributary to this lift station expansion exceeds 3.46 mgd.
4. A cover plate on the Gorman Rupp check valve shall be provided which can be removed to

Letter to the City of Parkersburg
May 9, 2000
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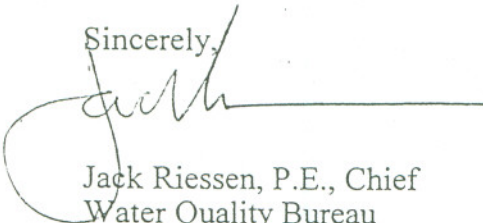
inspect the entire valve on the discharge side.

5. The 3.46 mgd Gorman Rupp suction lift pumping station shall be sized and configured to allow for the addition of check valves in the horizontal portion of the discharge piping at a minimal cost.

We note the Parkersburg construction contract also will provide a built in place pumping station without a bond to provide a guarantee against defective workmanship and materials. Rather than rely solely on the engineer's errors and omissions insurance policy or Gorman Rupp's one year equipment warranty after shipment, the City of Parkersburg should obtain a maintenance bond for a minimum period of two to three years from the date of final acceptance. The examples cited by Mr. Gongol in his letter dated February 22, 2000 are factory assembled units.

Should you have any questions, please contact Terry L. Kirschenman at 515-281-8885.

Sincerely,



Jack Riessen, P.E., Chief
Water Quality Bureau

c: Ryken Engineering, Ackley
IDNR Field Office 2

✓ 9-11-06

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date: May 8, 2000
2. Review Engineer: Terry L. Kirschenman
3. Date Received: April 21, 2000
4. Facility Name: Parkersburg
5. County Number: 12
6. Program Area: CP
7. Facility Type : C02
8. Subject Area : 314
9. Rule Reference: 567-64.2(9)a
10. Design Stds Ref: 13.5.2
11. Consulting Engr: Ryken Engineering
12. Variance Rule: 567-64.2(9)c

13. Decision: *Approved*
Date: *5/14/00*

14. Appeal:
Date:

15. Description of Variance Request:

Locate check valves in the vertical portion of the discharge piping rather than horizontal piping.

16. Consulting Engineer's Justifications

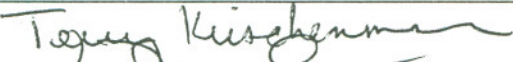
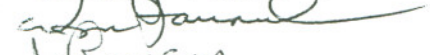
- a. The new pumping station will have three pumps while the existing pumping station will be retained. Even if two of the three pumps for the new pumping station fail, the proposed pumping station the City of Parkersburg in combination with the existing pumping station will have the capability of pumping the maximum day flow.
- b. There is a required one year warranty in the contract documents for the pumping station manufacturer. (The warranty becomes effective 60 days after installation or 90 days after shipment.)
- c. Ryken Engineering carries errors and omissions insurance.
- d. The Gorman-Rupp pumping station at Alden, Iowa (with check valves in vertically positions) has performed without incident for over three years.
- e. A cover plate on the check valve can be removed to inspect the entire valve on the discharge side.
- f. The added cost to fully comply with the Department's design standards is \$6,000.
- g. The Iowa Department of Natural Resources has approved "factory built" lift stations with vertically mounted check valves at Oskaloosa (1982), Carlisle (1985), Perry (1988), Kellogg (1988), Fort Dodge (1991), Van Meter (1991), Alden (1996), and North Liberty (1998).

17. Department's Justifications

- a. Not aware of any significant problems with this design provided only Gorman-Rupp equipment is used.
- b. If this design is approved, we should recommend that the contract documents guarantee (normally a maintenance bond is provided) the pumping station against defective workmanship and materials for a period of at least 2 years from the date of final acceptance.

18. Precedents Used

A variance for a Gorman Rupp check valve in the vertical portion of the discharge piping was approved by the Department for Van Meter in 1991.

19. Staff Reviewer:		Date:	May 9, 2000
20. Supervisor:		Date:	
21. Authorized by:	J. Riessm	Date:	5/16/00