

VARIANCE REQUEST

Iowa Department of Natural Resources

1. Date: October 27, 2008 2. Review Engineer: Satya Chennupati 3. Date Received: September 8, 2008 4. County Number: 93 (Wayne) 5. Facility Name: City of Promise City 6. Program Area: CP (Wastewater) 7. Facility Type: CO1 8. Subject Area: 344, pump clogging protection 9. Rule Reference: 507-64.2(9)a 10. Design Stds Ref: 13.4.2 11. Consulting Engr: Garden & Associates 12. Variance Rule: 507-64.2(9)c	13. Decision: <i>Denied</i> Date: <i>10/30/08</i> 14. Appeal: Date:
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15. Description of Variance Request:

The City of Promise City requests a variance from the design standard which requires all pumping stations handling raw wastewater shall have provisions for screening to protect the pumps from clogging or damage. The city is requesting an exemption from the requirement to provide screening for the proposed grinder pump station handling raw wastewater.

16. Consulting Engineer's Justifications

Equivalent effectiveness for the variance has been investigated as part of the small unsewered community pilot program, beginning with the Southern Iowa Rural Water Association system constructed in 1995 at Cromwell, Iowa. In our opinion, the findings of the pilot program have indicated that equivalent effectiveness can be attained with the above requested variance, and that significant savings in construction cost are attained for the unsewered communities.

Garden & Associates has first hand experience has experience and knowledge of design of similar systems to that requested; as constructed in other small unsewered communities during the past ten years. They have observed the construction of similar systems and have continued discussion with the owners and operators of these systems, and have not learned of any deficiencies. Similarly, they have observed a reduction in construction costs for these systems.

In their opinion, the requested Design Standards variance will provide equivalent effectiveness of transporting the wastewater from the service connection to the treatment system.

The application of the specific listed existing design standard would pose an unnecessary (and therefore undue) financial hardship on the City of Promise City, in their opinion. The variance has in their opinion, been proven to provide equivalent effectiveness and substantially equal protection of public health, safety, and welfare as is provided by the design standards.

It is their opinion that a duplex grinder pump station supplied without a trash basket can effectively function and serve similarly small populations. Grinder pumps have functioned very reliably in similar applications (Kinross, Hamilton, Lincoln, and Morrison) without trash baskets; grinder pumps are designed to macerate materials that are drawn into the pump; larger objects, those that can not be drawn into the cutting assembly, are expected to remain in the wet well until a cleaning occurs. Excessive quantities of cloth and other fibrous based flexible materials have necessitated more frequent cleaning of the Kinross system, but it is questioned if a conventional screening device (trash basket) would have retained these objects.

17. Department's Justifications

Recommend denial.

This variance has been denied in the past for unsewered communities. The omission of trash baskets is not unique and does not provide adequate protection to the proposed pumps. The elimination of trash basket is not one of the small community pilot project variances that were explored. There may have been some isolated variances granted in the past each due to unique circumstances of the respective projects. Variances have been approved for chopper type pumps which have a do not get clogged and have a reversal mechanism to eliminate clogging. Fibrous material, cloth, and other debris are known to clog grinder pumps and cause problems and therefore do not provide equivalent effectiveness.

18. Precedents Used

Previous small community projects: Halbur, Keswick

19. Staff Reviewer: Satya Chennupati Date: 10/30/08

20. Supervisor: Date:

21. Authorized by: Satya Chennupati Date: 10/30/08

GSL 10/30/08