

# VARIANCE REQUEST

## Iowa Department of Natural Resources

1. Date: November 1, 2000  
2. Review Engineer: Larry Bryant  
3. Date Received: October 16, 2000  
4. Facility Name: New Liberty WWTP  
5. County Number: 82, Scott  
6. Program Area: CP (Wastewater Construction)  
7. Facility Type: C01 (Collection/Transport)  
8. Subject Area: 305 (Minimum Sewer Size)  
9. Rule Reference: 567-64.2(9)a  
10. Design Stds Ref: 12.5.1  
11. Consulting Engr: McClure Engineering Assoc./Moline, IL  
12. Variance Rule: 567-64.2(9)c

13. Decision: **Approved**

Date: 11/6/00

14. Appeal:

Date:

### 15. Description of Variance Request:

The engineer is requesting a variance from the design standard for minimum sewer size, IA 12.5.1. There are three sewer segments where this request for variance would apply:

- (a) 299 L.F. @ 0.5% containing five service connections\*
- (b) 405 L.F. @ 0.5% containing five service connections\* (this segment contains a 90-degree bend where the engineer is proposing a cleanout in lieu of a manhole)
- (c) 398 L.F. @ 0.5% containing six service connections\*

### 16. Consulting Engineer's Justifications

- They feel that New Liberty should be considered an unsewered community, which would allow the use of 6" pipe per IA 12.5.1
- 6" sewer will provide adequate capacity
- The segments will not be subject to future extension
- The City's Sewer & Water Supt. confirms that he has no problems with using 6" pipe for these segments

### 17. Department's Justifications

#### **Recommend variance approval:**

We can no longer consider New Liberty an unsewered community as a centralized collection system was installed in 1999. However, variance approval is recommended for the following reasons:

- The plans show each of the proposed segments connecting to an 8" dia. manhole stubout and an 8"x6" reducer to utilize the proposed 6" pipe. This transition would violate IA 12.5.7.1(a)2 requiring a manhole at all changes in pipe size. **I have discussed this with the engineer and he confirms that the plans will be changed to eliminate the 8" stubouts and reducers and run 6" pipe all the way into each manhole.**
- \*6" pipe at a 0.5% slope has a full flow velocity of 1.78 fps. Velocities below 2 fps are only allowed by the standards for deep or continuous rock excavation, where a lift station can be eliminated, or where savings in sewer cost are possible for unsewered communities. **I have discussed this with the engineer and he confirms the plans will be changed with minimum 0.6% slopes for these segments.**
- The number of service connections on each line is limited and pipe capacity is adequate.
- None of the segments exceed the 800' max. length required for unsewered communities.
- The City's Sewer & Water Supt. has verified that cleaning equipment is available.

18. Precedents Used

City of Clermont – Approved 8/1/97

City of Clermont – Approved 7/20/94

City of Fairfield – Approved 10/10/89

City of Leon – Approved 9/25/91

City of McGregor – Approved 5/7/93

City of Lisbon – Approved 1/11/89

City of Cherokee – Approved 8/19/97

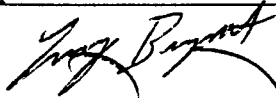
City of Albia – Approved 8/3/87

City of Keokuk – Approved 6/3/87

City of Libertyville – Approved 9/3/93

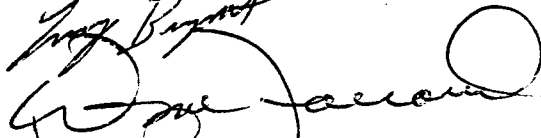
City of Corning – Approved 6/27/97

19. Staff Reviewer:



Date: 11/1/00

20. Supervisor:



Date: 11/1/00

21. Authorized by:



Date: 11/6/00