

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
LARRY J. WILSON, DIRECTOR

November 20, 1995

Mr. Michael Hays  
City Manager  
315 Stevens Street, P.O. Box 698  
Iowa Falls, Iowa 50126

RE: Biotower Site Separation Variance  
Iowa Falls, Iowa 6-42-60-0-01

Dear Mr. Hays:

This letter is in response to your November 13, 1995, correspondence regarding the siting of a new treatment unit (Biotower No. 2) at the Iowa Falls wastewater treatment facility. We have reviewed your site specific justification for a variance and have decided to issue a construction permit by November 21, 1995, and allow Biotower No. 2 to be built at the location proposed in the July 1995 plans and specifications. The new final clarifier will be added to the project by Change Order.

The City of Iowa Falls initially requested a variance from the Department's siting criteria on September 7, 1995. Bids for this project were received on September 12, 1995. The proposed biotower project will encroach on residents by approximately 150 feet and reduce existing separation distances by as much as 19 percent. State regulations require treatment plants to be located a minimum separation distance of 1000 feet from inhabitable residences. If this separation distance cannot be met for a plant expansion, the separation distance shall be maintained at no less than 90 percent of the existing separation distance, Subrule 64.2(3) of the IAC. Subrule 64.2(9)"c" of the IAC only allows variances from the siting criteria which provide in the judgement of the Department for substantially equivalent or improved effectiveness where there are unique circumstances not found in most projects. In reviewing a variance request, the Department may consider the unique circumstances of the project, direct or indirect environmental impacts, the durability and reliability of the alternative, and the purpose and intent of the rule.

Table 1 provides a summary of the affected homeowners. Only 2 of the 11 site separation waivers for inhabitable residences were obtained by the City of Iowa Falls.

TABLE 1. SUMMARY OF NECESSARY WAIVERS FOR THE SITING  
OF BIOTOWER NO. 2

| Location               | Existing Distance (ft) | New Distance (ft) | Percentage of Existing | Waiver Obtained |
|------------------------|------------------------|-------------------|------------------------|-----------------|
| 221 West 2nd Whitman   | 800                    | 710               | 89                     | No              |
| 215 West 2nd Bonin     | 790                    | 678               | 86                     | No              |
| 211 West 2nd Kasischke | 775                    | 644               | 83                     | No              |
| 205 West 2nd Caruth    | 775                    | 628               | 81                     | No              |
| 116 West 2nd Bonin     | 956                    | 794               | 83                     | No              |
| 102 West 2nd Reints    | 993                    | 828               | 83                     | No              |
| 215 West 1st Blakeman  | 1,120                  | 978               | 87                     | Yes             |
| 201 West 1st Adams     | 1,118                  | 968               | 87                     | No              |
| 220 West 2nd Berry     | 947                    | 838               | 88                     | Yes             |
| 214 West 2nd Anderson  | 935                    | 812               | 87                     | No              |
| 206 West 2nd Bonin     | 919                    | 772               | 84                     | No              |

We are approving a siting variance for Biotower No. 2 based on the following supporting justification due to the inability of the City to obtain all waivers:

- 1) There is limited space at the existing plant site for expansion.
- 2) The existing plant, over 60 years old, has not experienced odor problems and is well maintained.
- 3) The plant site is visually screened by trees from the residential area noted above. Based on the City's justification, no concerns have been expressed by local residents with respect to the visibility of the proposed improvements.

- 4) Expansion of the existing treatment plant to the other side of the Iowa River would be difficult and may impair operations.
- 5) Construction of another plant at a new location may be impractical or too costly.
- 6) The biotower is mechanically ventilated to maintain aerobic conditions for better process control and to minimize odors. The construction permit will require the addition of odor control facilities if determined necessary.
- 7) Replacement of the existing rock trickling units with a more space efficient treatment process would significantly impair treatment during construction.
- 8) Before the wastewater reaches the biotower for the final stage of biological treatment, the preliminary treatment units and existing rock trickling filters will provide a high degree of treatment.
- 9) A future expansion of the treatment plant beyond the nitrification biotowers in the direction of the affected local residents will not be allowed by the Department in the absence of all waivers necessary for the siting of Biotower No. 2.
- 10) The proposed sludge storage tank using an existing final clarifier will not encroach within existing separation distances.
- 11) The FNSI issued by the Department on October 3, 1995, cleared without comment.
- 12) Finally, condemning the property of so many (9 homeowners) giving the City of Iowa Falls the legal right for this project to encroach upon their property in the absence of waivers or a variance was rejected as a viable alternative given the reported shortage of housing within the community even though this option is implementable and may be less costly than constructing a new plant at a different site.

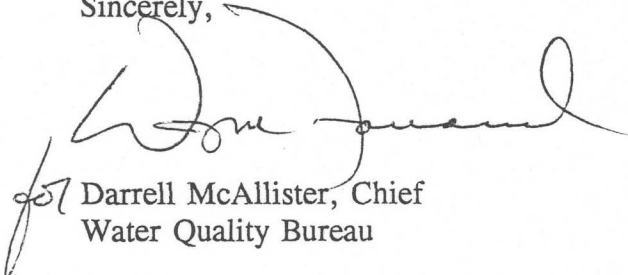
The November 3, 1995, correspondence from Fox Engineering indicates that any further expansion to the east would be unlikely because of the utilities owned by IES. The IES company, however, may decide to sell its property in the future. To protect local homeowners from this eventuality and any additional encroachment after the construction of Biotowers No. 1 and 2, the Department is imposing restrictions on the ability of Iowa Falls to expand the plant toward the residential development as a condition of the construction permit unless all necessary waivers for the siting of Biotower No. 2 are obtained. If wasteloadings from the community increase requiring an expansion of the plant in the future and the waivers have not been obtained, it may be necessary for the City to use its present site more efficiently such as replacing the existing rock trickling filter units with a more space efficient treatment process. If all 11 waivers are obtained, the siting criteria found in Subrule 567-64.2 of the IAC may be used in siting Biotower No. 1. If all necessary waivers for the siting of Biotower No. 2 are not obtained, the siting of Biotower No. 1 or any other treatment unit shall be based on the separation distances from the treatment units at the plant predating the construction of Biotower No. 2 and the new final clarifier.

Your November 13, 1995, letter indicates that several residents are concerned about a decrease in property values and would prefer to not sign the site separation waivers. Others are simply opposed to signing waivers or any project in general. We concur with your assessment that the addition of a biotower unit for nitrification should not cause noticeable impacts or a decrease in property values provided the preceding treatment units are not overloaded or improperly maintained. The proposed biotower unit is the last biological stage of the treatment plant. Any hydrogen sulfide gas and aromatic hydrocarbons will have already been released in the rock trickling filters. As the biotower will be covered, aerosols should be held to a minimum. Also, the sludge holding tank previously proposed is being relocated to an existing unit. Despite these measures, the City of Iowa Falls must still use good judgement in operating the plant as the residential development is downwind of the facility. However, with only average operations, the plant improvements as proposed should not affect or be noticed by the nearby residents.

This approval is not a blanket siting variance. In our November 8, 1995, correspondence, we requested verification of the findings by Field Office 2 at the site survey inspection. If there are any others which must be obtained that were not identified at the site survey inspection because of the mapping provided by the City of Iowa Falls, state regulations would be violated in the absence of a waiver. Also, as stated in our previous correspondence, the specific location of the 57 foot diameter final clarifier must be identified and approved by the Department prior to the execution of a Change Order. Each new unit will be reviewed on its own merits with respect to siting. Construction of Biotower No. 2 also cannot be initiated until the waiver from IES is obtained.

Should you have any questions, please call Terry L. Kirschenman at 515-281-8885. My telephone number is 515-281-8869.

Sincerely,

A handwritten signature in dark ink, appearing to read "Darrell McAllister", is written over a horizontal line. The signature is fluid and cursive.

Darrell McAllister, Chief  
Water Quality Bureau

cc: Fox Engineering, Ames  
Field Office 2



# VARIANCE REQUEST

Iowa Department of Natural Resources

Entered 11/22/95 - OK [Signature]

|                      |   |                 |               |          |
|----------------------|---|-----------------|---------------|----------|
| 1. Date              | : |                 | 13. Decision: | Approved |
| 2. Review Engineer   | : | Terry Kinkheman | Date:         | 11-20-95 |
| 3. Date Received     | : | 9-12-95         |               |          |
| 4. Facility Name     | : | Iowa Falls      | 14. Appeal:   |          |
| 5. County Number     | : | 42              | Date:         |          |
| 6. Program Area      | : | CP              |               |          |
| 7. Facility Type     | : | COS             |               |          |
| 8. Subject Area      | : | 308             |               |          |
| 9. Rule Reference    | : | 567-64.2(9)a    |               |          |
| 10. Design Std. Ref. | : | 11.2.9.4        |               |          |
| 11. Consulting Engr. | : | Fox Engineering |               |          |
| 12. Variance Rule    | : | 567-64.2(9)c    |               |          |

## 15. Description of Variance Request

The City of Iowa Falls is requesting our approval for the siting of a treatment plant expansion that encroaches within the 90% separation distances. Only 2 of 11 waivers were obtained by the City of Iowa Falls.

## 16. Consulting Engineer's Justification

See 9-7-95 correspondence from Fox Engineering

See 11-3-95 correspondence from Fox Engineering

See 11-13-95 correspondence from City of Iowa Falls.

16. Consulting Engineer's Justification (cont.)

17. Department's Justification

See Approval Letter date 11-20-95

18. Precedents Used

Albia (February 20, 1991 Letter to David Kenworthy)

19. Staff Reviewer

: *John Kirsch*

Date: 11-20-95

20. Supervisor

: *John Kirsch*

Date: 11/20/95

21. Authorized by

:

Date: