

VARIANCE REQUEST

Iowa Department of Natural Resources

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| 1. | Date: October 23, 1997 | 13. | Decision: |
| 2. | Review Engineer: Gabe Lee | | Date: |
| 3. | Date Received: May 17, 1994 | | |
| 4. | Facility Name: Boone, WWTF | 14. | Appeal: |
| 5. | County Number: 8 | | Date: |
| 6. | Program Area: CP (Wastewater) | | |
| 7. | Facility Type: CO4 | | |
| 8. | Subject Area: 378 | | |
| 9. | Rule Reference: 900-64.2(9)a | | |
| 10. | Design Stds Ref: 15.2.5.2.1 | | |
| 11. | Consulting Engr: McClure Engineering | | |
| 12. | Variance Rule: 900-64.2(9)c | | |

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| 15. <u>Description of Variance Request:</u> | The consultant has requested that this project be exempted from design standards 15.2.5.2.1. This design standard requires that a fine screen have a backup. The proposed design consist of a mechanical bar screen and a manually clean bar rack for by passing. The plans also allows a future mechanical bar screen to be added to the facility. |
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| 16. <u>Consulting Engineer's Justifications</u> | <ol style="list-style-type: none"> 1. The plans allow for a future mechanical bar screen to be added to the facility. 2. The facility is an extended aeration facility and the detention time of the basin is 24.7 hours for ADW flows and 7.4 hours for AWW flows. 3. Eight facilities in Iowa utilize only one mechanical screen followed by biological treatment without clarification. |
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| 17. <u>Department's Justifications</u> | <ol style="list-style-type: none"> 1. At this point the facility has high capacity for oxygen transfer to the aeration basin via the surface disk aerator and coarse bubbles aerators. If solids do get into the aeration basin there should be enough dissolved oxygen for treatment. A construction permit can conditioned to that an additional bar screen is needed should the flow exceed the plant capacity. 2. The detention time at ADW flows is considered suffucient and do not expect that there will be any treatment problems and during AWW flows oxygen provided by the disk and coarse bubble aerators should suffice. |
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3. Upon checking with the NPDS mainframe database (see attachment) Storm Lake, Grundy Center and Chariton are facilities employing fine screens in lieu of priary clarification. In fact upon confering with FO 2 & 3; Storm Lake and Grundy Center does not employ fine screens. Perry being a SBR facility clarification was need. The fine used at Perry is for removal of rags and large objects in the waste stram. None of these facilities have any variances applied according to our variance database.
4. I have conferred with Furrey this morning and he indicated that none of the facilities listed before have exhibited any non-compliance recently, except Perry which is under construction at the moment.

I recommend approval of the variance as the facility operates similar to an oxidation ditch i.e. a extended aeration facility. Clarifiaction may not have a large impact on the bio-treatment.

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| 18. <u>Precedents Used</u> | None of the following cities have any variance requested ; Eldora, Perry, Solon, Storm Lake, Grundy Center, Iowa Falls, Chariton & Fayette, but they are approved by the department for construction. |
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| 19. | Staff Reviewer: | Gabe Lee | Date: October 23, 1997 |
| 20. | Supervisor: | | Date: |
| 21. | Authorized by: | | Date: |