

VARIANCE REQUEST

Iowa Department of Natural Resources

1. ✓ Date: 8/23/99
 2. Review Engineer: Fred Evans
 3. Date Received: 7/28/99
 4. County Number: 44
 6. Program Area: CP (Wastewater)
 7. Facility Type: C02
 8. Subject Area: 344
 9. Rule Reference: 900-64.2(9)a
 10. Design Stds Ref: 13.4.2
 11. Consulting Engr: French - Reneker
 12. Variance Rule: 900-64.2(9)c

13. Decision: Denied
 Date: 8/31/99
 14. Appeal:
 Date:

15. Description of Variance Request The City of New London has submitted plans and specs, for a new lift station to replace an existing lift station which serves 7 or 8 homes in a residential area of 40 Acres. The original lift station was constructed in the 1970s and does not include any provisions for screening which is now required for all lift stations handling raw wastewater in accordance with Chapter 13 of our wastewater facilities design standards adopted March 19, 1985. The City and engineer propose to construct the new lift station without screening and, therefore, have requested a variance from the requirements of the design standards.

16. Consulting Engineer's Justifications

The City of New London is asking a variance or waiver from the requirements of a screening facilities or a trash basket at the proposed improvements at our lagoon lift station. We have operated this station for 22 years and have never had a clogged pump. The new pumps are larger and have more horsepower than the existing pumps, so the possibility of a clog should be less.

Danny Cornell
Mayor — 2000

COUNCIL MEMBERS:
Bud Brown — 2002
Bob Hardy — 2002
Janet Crow — 2002
Troy Mears — 2000
Michael Westerbeck — 2000

CITY CLERK / TREASURER
Paula J. Turner-Coates

MEETING NIGHTS:
First Monday in Month
7:00 P.M.



CITY OF NEW LONDON

112 WEST MAIN STREET, BOX 184

New London, Iowa 52645

INCORPORATED IN 1861

CITY OFFICE PHONE (319) 367-7702
UTILITY OFFICE PHONE (319) 367-7701
FAX (319) 367-7707

TRUSTEES OF THE
MUNICIPAL UTILITIES BOARD:
Edward Pilch,
Chairman — 1999
Rodney Linkin — 2003
Scott Housman — 2003
Gary Blanck — 2001
Jerry Wilhelm — 2001

BOARD SECRETARY
Jeri Lyles

UTILITY FOREMAN
Greg Thu

MEETING NIGHTS:
Second Monday of Month
7:00 P.M.

Mr. Fred Evans
Wastewater Section
Water Quality Bureau
Wallace State Office Building
Des Moines, IA 50319

July 26, 1999

1999 JUL 28 P 3:38
DEPT. OF
NATURAL RESOURCES

RE: Lift Station Trash Basket

Dear Mr. Evans,

The City of New London is asking a variance or waiver from the requirements of a screening facilities or a trash basket at the proposed improvements at our lagoon lift station. We have operated this station for 22 years and have never had a clogged pump. The new pumps are larger and have more horsepower than the existing pumps, so the possibility of a clog should be less.

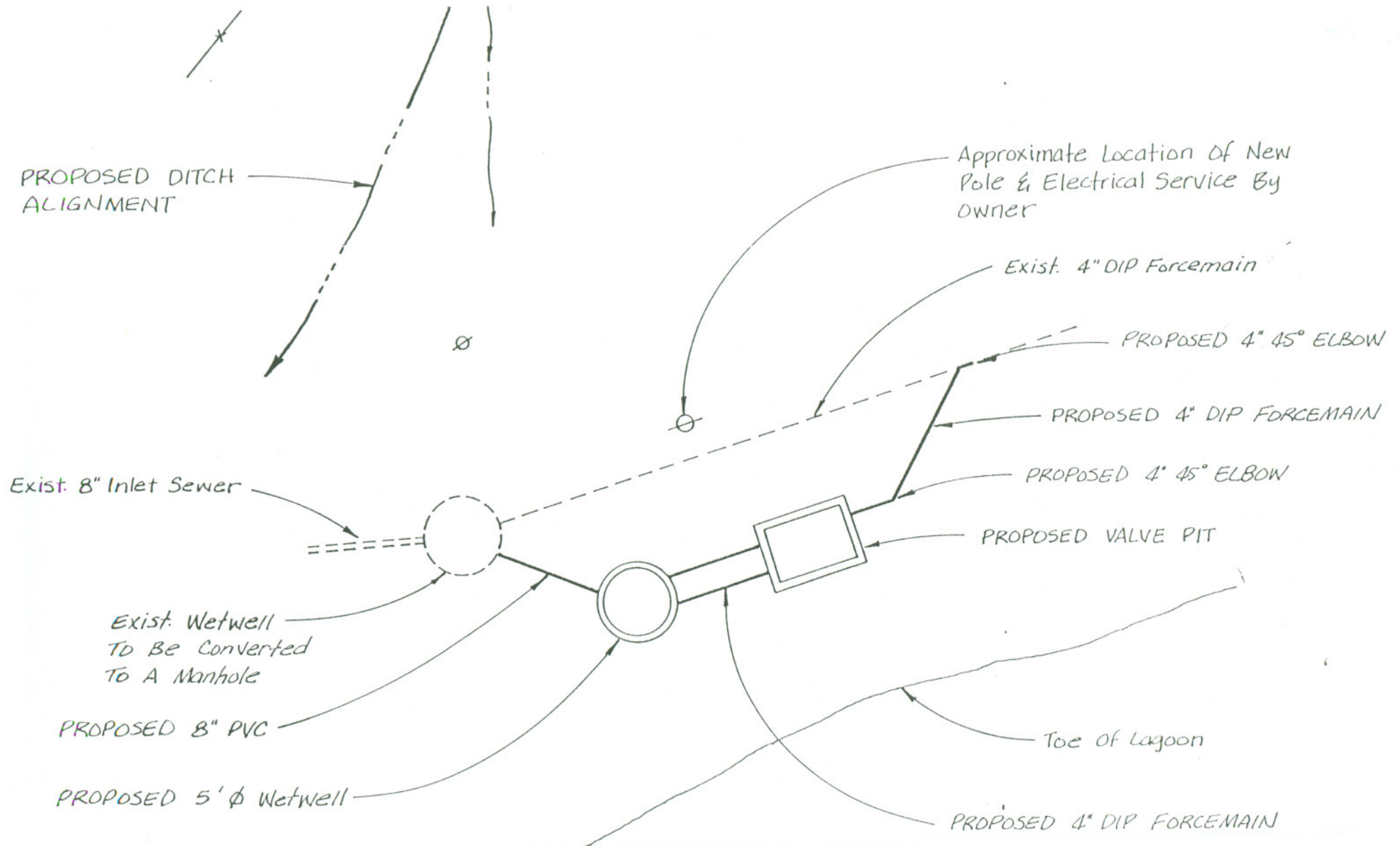
Please inform the City of your decision as soon as possible.

Very truly yours,

Ron Barron

Ron Barron
W. W. T. P Operator

PS A copy of the Lift Station Alert Notification sent to the property owner with visual and audio distance is enclosed.



NOTE: Top of Exist. Wetwell
is 714.6. Use As Site

SITE LOCATION



Printed on
Recycled Paper

IOWA DEPARTMENT OF NATURAL RESOURCES
WASTEWATER PERMITS SECTION
CONSTRUCTION PERMIT APPLICATION

SCHEDULE E, Wastewater Pump Station

DATE PREPARED 6-18-99	PROJECT IDENTITY Proposed Lagoon Lift Station Improvements New London, Iowa 1999	DNR USE PROJECT NO.
DATE REVISED		PERMIT NO.

1.	Design Basis	Initial	Design Year (N/A)
	Residential Area, Acres	40	
	Population, Persons	30	
	PHDW Flow, MGD	.0002	
	Industrial Area, Acres	N/A	
	PHDW Flow, MGD	N/A	
	Other _____, Acres	N/A	
	PHDW Flow, MGD	N/A	
	Peak Hourly Infiltration, MGD	.002	
	Peak Hourly Inflow, MGD	.003	
	Total PHDW Flow, MGD	.006	
	Total PHWW Flow, MGD	.009	

Information on this schedule has been supplied by the Owner.

2. Provide pump information

Pump No.	Type	Opening (in)	HP	Capacity GPM	TDH (ft.)		Operating Level	
					Computed	Rated	On	Off
1	Submersible	4	5	100	28	30	5.0	1.5
2	Submersible	4	5	100	28	30	5.0	1.5
3								
4								
5								
Sumo								

Are pumps specified as being capable of passing three inch diameter spheres? Yes ☒ No ☐

Can remaining pumps handle PHWW flow with largest pump out of service? Yes ☒ No ☐

3. Wet-well effective volume 164 gallons. Retention time: Initial Flow 39 minutes. @ 6,000 GPD
Design Flow: N/A minutes.

4. Is forced air ventilation provided? N/A

Continuous: wet-well _____ dry-well _____ Intermittent: wet-well _____ dry-well _____
wet-well _____ air changes/hour dry-well _____ air changes/hour

Are spark-proof materials specified? Yes ☒ No ☐

5. Force main: Is profile of force main provided? Yes ☐ No ☒

Size 4 in. Length 200 ft.

Pipe Material PVC and DIP Joint Gasket

Minimum cover 4 ft. Minimum velocity 2.5 fps

Number of high points 1 Are air relief valves provided? Yes ☐ No ☒

Number of thrust blocks provided? 2 At location(s) Previously installed

Is pressure test specified? Yes ☒ No ☐ Does installation conform to AWWA C500? Yes ☒ No ☐
If no, explain: _____

6. Are valves provided on the suction & discharge lines? Yes ☒ No ☐

Type: Discharge swing check Suction gate

7. Is an alarm system provided? Yes ☒ No ☐ Type audio/visual

Indicate where audio/visual warning signals will be located at lift station

8. Method of pump control floats

9. Are the pumps protected from clogging? Yes ☒ No ☐

Method of cleaning manual

Method of pump removal hoist Are lifting hooks/arms provided? yes

10. Are permanent emergency piping bypass connections provided? yes Is an emergency power supply available? No Describe station operation in an emergency (equipment, piping, bypass, etc.) _____

11. Is the wastewater pump station located in a floodplain? Yes ☐ No ☒

Elevation of 100 year flood (MSL) _____ Elevation of 25 year flood (MSL) _____

13.3.2.4 Construction Materials

Materials shall be selected that are appropriate under conditions of exposure to hydrogen sulfide and other corrosive gases, greases, oils, and other constituents frequently present in wastewater.

13.3.2.5 Grit Protection

Where it may be necessary to pump wastewater prior to grit removal, the wet well and pumping station piping shall be designed to avoid operational problems from the accumulation of grit.

13.4 PUMPS AND PNEUMATIC EJECTORS

13.4.1 Pumping Rate and Number of Units

At least two pumps or pneumatic ejector pots (receivers) and compressors shall be provided, each capable of handling the expected PHWW flow.

When three or more units are provided, they must be of such capacity that with any one unit out of service, the remaining units will have capacity to handle the expected PHWW flow.

When the station is expected to operate at a flow rate less than 0.5 times the ADW flow for longer than 12 hours at a time, the design shall address measures taken to prevent septicity due to long holding times in the wet well.

Consideration shall be given to the use of variable-speed pumps, particularly when the pumping station delivers flow directly to a treatment plant, so that wastewater will be delivered at approximately the same rate as it is received at the pumping station.

13.4.2 Protection Against Clogging

All pumping stations handling raw wastewater shall have provisions for screening to protect the pumps from clogging or damage.

Trash baskets constructed of a corrosion resistant material and easily removable for cleaning may be used for small pumping stations.

Bar racks with clear openings not exceeding 2 1/2 inches shall be provided for larger stations.

Mechanically cleaned bar screens with manually cleaned bar rack bypasses shall be considered for very large installations.

Unless screenings can be collected at ground level, hoists shall be provided for removing screenings containers from facilities located below ground.

17. Department's Justifications

It is recommended that the requested variance be denied for the following reasons:

1. The submitted justification does not provide for substantially equivalent or improved effectiveness if screening is not installed.
2. There are not any unique circumstances involved in the lift station design.
3. The initial lift station service area of 40 Acres could accommodate additional development in the future. Also there may be additional tributary area for development.
4. The minimal pump capacity of 100 gpm to be installed in the lift station increases the potential for future clogging of the pumps

18. Precedents Used

City of Boyden - denied 3/6/90

19. Staff Reviewer:

Zed M. Evans

Date:

8/26/99

20. Supervisor: Wayne Farrand

Don J. Farrand

Date:

8/26/99

21. Authorized by:

Jack Kiesson

Date:

8/31/99