

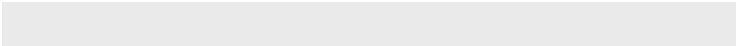
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INVESTIGATION REPORT

RAW SEWAGE DISCHARGE TO THE RED RIVER

CITY OF WINNIPEG NORTH END SEWAGE TREATMENT PLANT

Manitoba Conservation



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Conclusions

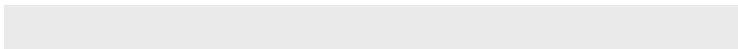
- 1 Discharge of raw sewage resulted from the flooding of the dry wells, which prevented the continued operation of the sewage treatment plant.
- 2 Flooding of the dry wells resulted from the removal of a pump inspection plate, when the pump was not hydraulically isolated.



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Conclusions

3 The piped drainage system for the pumps is unreliable and has not worked satisfactorily for many years. Action should be taken to replace the current system with one that works properly.



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Conclusions

- 4 Pump inspection plates should not be used to determine if the pump is hydraulically isolated and it should not be used for draining the system.
- 5 Operators were not aware of the position of the valve stem on the suction gate valve when the valve was in the fully closed position.

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Conclusions

6 The suction gate valve had been identified as having problems closing. At the time the Rotork valve actuator unit indicated that the valve was not fully closed and there was no other positive information indicating that the valve was closed, the decision should have been made to have divers visually inspect the intake valve.



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Recommendations

- 1 The dry wells should be isolated from each other.
- 2 A functional pump drainage system with control valves should be designed, constructed and maintained on all major lift pumps.



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Recommendations

- 3 A system should be designed, constructed and maintained to provide a positive check that a pump has been hydraulically isolated after its suction gate valve has been closed, while maintaining hydraulic control in the pump assembly.



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Recommendations

- 4 A monitoring device should be installed and maintained on all valve actuators, that will accurately indicate the relative position of the valve plate.
- 5 All major valves should be equipped with a device to ensure that operators can visually determine the position of the valve stems in the fully closed position.

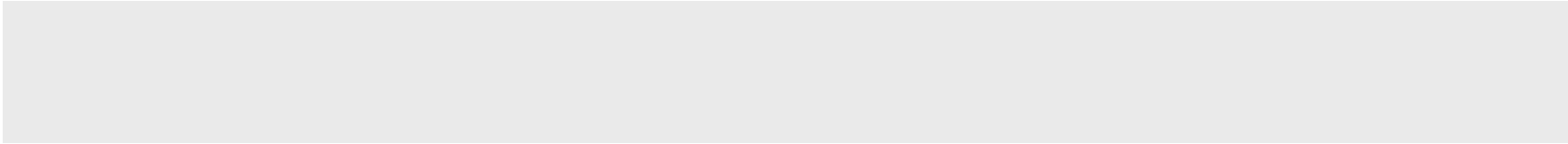
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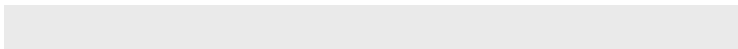
Recommendations

- 6 All problems with major valves should be investigated by removing them from service and making necessary repairs.
- 7 A program should be developed to exercise all major valves on a routine basis to ensure proper functioning.

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Questions



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