

OVERALL ASSESSMENT SUMMARY

NAME OF THE WATERWORKS SYSTEM: TYPE OF WATER SOURCE (Surface, Ground or GUI): PREDOMINANT CHALLENGE ('S' for source, 'T' for treatment or 'O' for operations and monitoring): OVERALL RANK (1, 2, 3, 4 OR 5):

COMMENTS:

System Overview: The Town of Milk River has slow sand water treatment system that draws supply from the Milk River. Raw water is drawn from the source via a river bed infiltration gallery (which is in the process of being upgraded) and pumped via low lift pumpstation to a 32 ML raw water storage settling basin situated at an elevated location north of Town. Settled water is treated via two slow sand filtration basins. Chlorine, fluoride and copper sulphate chemicals are used at the facility.

Source Assessment: There are no major concerns. Installation of a river based bed infiltration gallery will be undertaken in 2004 to address past capacity issues. Water quantity and quality appear to be adequate.

Treatment Assessment: There are no major concerns. A series of upgrades were undertaken throughout the 1990's, which have equipped the Town with an up-to-date facility that is producing regulatory compliant water.

Operations & Monitoring Assessment: There are no major concerns. State-of-the-art instrumentation and SCADA is employed at the facility, which provides operations with timely information to treatment and production issues. Biggest challenge is attracting and retaining certification personnel in a support capacity at the current salary scales.

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Note: The purpose of the above overall "rank value" is to highlight what is deemed to be the predominant issue for follow-up review, action or further evaluation. The assessment results are not intended to supersede the conclusions and findings of more comprehensive engineering evaluation studies undertaken by communities. Site-specific engineering studies, based on more comprehensive terms of reference, may indicate the challenges to be more or less pronounced than concluded in this assessment.

SOURCE ASSESSMENT SUMMARY

Source	Ranking Criteria					Assigned Rank	Comments
	1	2	3	4	5		
Quantity	Assessment done. Adequate for present and future needs	No assessment done. Appears to be adequate for present needs	Assessment done. Adequate for present needs but not for future needs	No Assessment done. Appears inadequate for present needs	Assessment done. Inadequate for present and future needs.	2	Milk River is fed from Lake Sherburne and Lower St. Mary Lake located in the States. The chain of lakes, dams and canals is referred to as the "St. Mary Storage Unit" which is also understood to be the principal source for the St. Mary irrigation canal network. According to operations, the river has never run dry at the intake location.
Quality	Water quality assessment done, no problems confirmed	Water quality assessment done, no apparent problems	No water quality assessment done, no apparent problems	No water quality assessment done, problems evident	Water quality assessment done, confirmed problems	1	Review of 2002 data shows water to have low organic content (TOC 2.6) and low turbidities.. The attractive aspects of this water source are also reflected to some degree in the very low DBP values.
Source Protection	Assessment done, no mitigative measures needed	Assessment done, but action taken to mitigate issues	No assessment done, no apparent concerns	No assessment done, problems evident but no action taken	Assessment done, problem confirmed, no action taken to alleviate problems identified	3	It is understood that various studies have been undertaken by government agencies over the years. However, no Source Protection Assessment document was available for review at the time of assessment - hence the reason for a "3" ranking
Overall						2	Major problems are not evident. Both quantity and quality are deemed satisfactory. Milk River is in the process of upgrading the river infiltration gallery and low lift pump system. As such, no additional upgrades are envisioned in the near future.
Estimated costs for source improvements							\$0



TREATMENT ASSESSMENT SUMMARY

Treatment	Ranking Criteria					Assigned Rank	
	1	2	3	4	5		
Design criteria	The plant meets the design standards	<i>Rating not used</i>	<i>Rating not used</i>	<i>Rating not used</i>	One or more critical component not meeting design criteria	1	Plant was upgraded in 1997
Capacity	Evaluation done, the plant operates within design capacity at present and for future needs.	Evaluation done, the plant operates within design capacity at present but would not meet future needs.	No evaluation done, no immediate concerns.	Evaluation done, intermittent shortages identified, nearly at 90% capacity	Evaluation done, plant has exceeded capacity, persistent shortages at present.	1	Peak day flow in 2003 equated to 54% of filtration capacity. This calculation is based on assumption that one filter is running and one is being scraped. Percentage of taxed capacity is only 27% if 2 filters running are factored in calculation.
Performance Turbidity (Surface & GUI)	Meets 0.1 NTU criteria (100%)	Meets 0.3 NTU criteria (100%)	Meets 0.5 NTU criteria (100%)	Does not meet 0.5 NTU consistently	Does not meet 0.5 NTU at all	3	Typical slow sand filtration turbidity requirements are production of water at < 1.0 NTU. 2003 annual report shows average turbidity reading of 0.09 and max value of 0.48 for this system. Note: system is equipped with on-line turbidimeters
Performance Groundwater	Meets 0.05 mg/L manganese & 0.3 mg/L iron	<i>Rating not used</i>	Meets only one parameter (iron or manganese)	<i>Rating not used</i>	Does not meet 0.05 mg/L manganese & 0.3 mg/L iron	n/a	
Performance (Surface & GUI) - Disinfection 3-log Giardia, 4-log virus at t_{10}/T of 0.1 (unless demonstrated higher)	Meets CT and THM guideline	<i>Rating not used</i>	Meets CT but not THM guidelines.	<i>Rating not used</i>	Does not meet CT guidelines and THM guidelines	1	Operations calculates and records CT on a daily basis.
Performance (GW)- Disinfection 4-log virus at t_{10}/T of 0.1 (unless demonstrated higher)	Meets CT and THM guideline	<i>Rating not used</i>	Meets CT but not THM guidelines	Meets THM but not CT guidelines	Does not meet CT guidelines and THM guidelines	n/a	
Overall						1	System has adequate capacity and is producing good treated water quality on a consistent basis.
Estimated costs for upgrading treatment							\$0



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MONITORING & OPERATIONS ASSESSMENT SUMMARY

Operations Management	Ranking Criteria					Assigned Rank	
	1	2	3	4	5		
Monitoring turbidity	Online, individual filter and combined filter (if applicable)	<i>Rating not used</i>	Online, combined filter only	<i>Rating not used</i>	Grab, combined filter only	1	On-line individual turbidimeters are in place
Monitoring Disinfection (at point where CT is estimated)	Continuous, online	<i>Rating not used</i>	Grab, daily	<i>Rating not used</i>	Grab, less than daily	1	On-line Cl residual analyzer is in place
Operations (Facility)	Certified operator at appropriate level, coveroff, succession plan available	<i>Rating not used</i>	Certified operator at appropriate level, no coveroff, no succession plan available	<i>Rating not used</i>	No certified operator at appropriate level, no coveroff, no succession plan available	1	
Operations (SOP/ERP)	SOP/ERP in place	<i>Rating not used</i>	Either SOP or ERP in place but not both.	<i>Rating not used</i>	SOP/ERP available not	3	
Overall						1	Solid record keeping is in place. Some of the latest on-line water quality instrumentation and system alarming is in place.
Estimated costs for upgrading monitoring & operations							\$0

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