

North Battleford Case Study:

The small community of North Battleford, Saskatchewan is home to almost 14,000 people. The water source for the community is the North Saskatchewan River. The surface water is treated by the surface water treatment plant and is chlorinated, flocculated and settled.

In March 2001, the solids contact unit in the surface water treatment plant was emptied and all the sludge removed from the bottom in order to inspect, clean and repair a crack that had formed in the cement floor. This type of repair should normally be done in February, so that the spring breakup and runoff will not affect the system.

The repair was completed in the afternoon of March 20, 2001. A night employee was left with instructions to run the water to waste until the turbidity level was less than 5 NTU and the chlorine residual level was 2.0 free chlorine. He followed these instructions and when the turbidity level was 2.29 and free chlorine was 2.15, the employee pumped the water into the clear well (the water used by the community is drawn from this well).

However, there was no settling of solids in the solid contact unit. The plant employees tried different chemical doses but nothing seemed to work. The turbidity levels fluctuated and the filters required backwashing more often but this water was not run to waste. The plant manager was informed of the lack of settling and approved the purchase of bentonite to aid in settling. Even with this new chemical settling did not occur until April 24, 2001. The turbidity levels during this time were over 0.5 for 9 days and over 0.3 for 13 days. The maximum turbidity level is 0.3 NTU.

From March 20 to April 24, the people of North Battleford drank the water, not knowing there was a problem. The first people to become ill were the elderly and the children. All had similar symptoms including nausea, vomiting, and diarrhea. Over 7,000 people became ill. The majority of these people lived in the North Battleford- Battleford area but because the water was contaminated over the Easter break, people from outside the community became ill too. There were no deaths associated with the contamination.



An inquiry was held and the source of the contamination was found to be *Cryptosporidium*. The city of North Battleford contested that the outbreak was not linked to the water because some people became ill on or slightly before March 20th. However, the inquiry ruled that the water was indeed the source of the outbreak and recommended that the city build a new water treatment facility no later than 2003. The city was also to write a safe drinking water policy. The province was to standardize their water treatment guidelines for all Ecoregions.

Some people were not satisfied with the result and launched a lawsuit naming the city of North Battleford and the provincial government as responsible for the contamination. The lawsuit was settled out of court and the 700 claimants received \$3.2 million for pain and suffering, loss of income, out-of-pocket expenses and legal fees.