

Microbial Source Tracking

GAP EnviroMicrobial Services is an environmental microbiology laboratory with over 30 years of environmental investigation. The Director of GAP EnviroMicrobial Services, Garry Palmateer was the principle investigator for the Walkerton Inquiry and also was the Senior Microbiologist for the Ontario Ministry of Environment.

With an emphasis on identifying the sources of contamination impacting the St. Joseph's beach the following study is being proposed.

- ✓ Physically walk the ravine to determine potential sources (i.e. tile drains, farms, manure piles, sewage outfalls, lagoons, etc.)
- ✓ Collect sediment samples at the potential sources to determine the concentration of *E. coli*
- ✓ Isolated *E. coli* cultures are fingerprinted by rep-PCR, and entered into database
- ✓ Source samples are collected during dry and wet periods (after heavy rainfall and during dry period)
- ✓ Routine monitoring of sediment and water at St. Joseph's Beach.
- ✓ *E. coli* cultures are isolated and fingerprinted, then compared to fingerprints in the database.
- ✓ Results interpreted and final report prepared linked to historical data such as previous antibiotic resistance studies, past *E. coli* levels and physical observations such as wave height, previous bacteriological results, etc.

Further details such as sampling, appropriate training for field staff can be determined at a later date.