

TASC Soil Gas Analysis Technique

CASE HISTORY TWO

DELINEATION OF SUBSURFACE HYDROCARBON CONTAMINATION

AT A SITE LOCATED IN THE CANADIAN NORTH

In 1996, with support from the National Research Council (IRAP Program), the TASC technology was tested for applicability in the permafrost of the Northwest Territories.

The test site was a facility (confidential client) located in Fort Norman. The site was suspected to have subsurface hydrocarbon contamination of unknown composition. Fort Norman is located in the continuous permafrost zone of the Canadian Arctic and the ambient temperature at the time of the investigation was -40 degrees Celsius.

The results obtained using the TASC technology were compared with the results obtained using the conventional drill and sample investigation.

RESULTS OF THE INVESTIGATIONS

The conventional technology included obtaining soil samples by drilling and subsequent submission of those samples to a laboratory, whose purpose was to determine the concentration of total hydrocarbon content.

The TASC samplers were installed in close proximity to the drill site locations, and were left in place for 21 days. Following their retrieval, the collectors were subsequently analysed according to the standard C5 Plus Group Ltd. protocol.

The TASC technology was able to identify the presence of benzene, toluene, ethyl benzene and xylenes (BTEX), alkane mixture (C5 -C15+) and the chlorinated hydrocarbons, dichloromethane and dichloroethane. Sources were believed to be cleaning solvents which were known to be used in the day to day operations.

The results of the conventional investigation showed total hydrocarbon contamination which was consistent with the TASC results. However, the scope of the laboratory budget did not allow identification of the contaminant species.

The cost of the conventional investigation was estimated to have been approximately 10 to 15 times higher than the TASC investigation.