AirScience TT
CLEAN AIR IS EVERYONE'S BUSINESS

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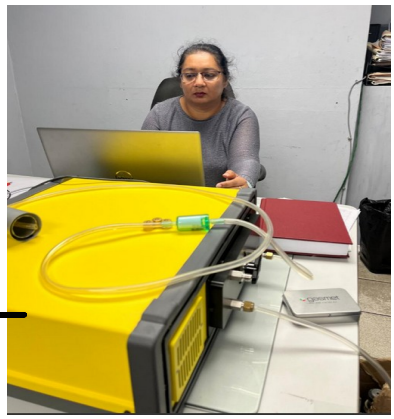
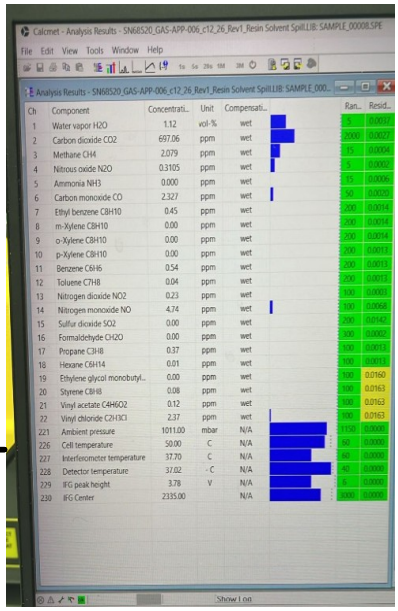
WAREHOUSE AIR QUALITY– Chemical Spill

Storage spaces with shifting and assorted cargo implies many different substances that pass through the storage. Forklifts, myriad cargo, cardboard boxes, floor staff and members of the public offer many instances for accidents to occur. Once such incident occurred on October 31st, resulting in a punctured chemical barrel, causing spillage of such chemical in the warehouse. The spill was quickly covered with chemical sorbent (Stardust), however, strong chemical odour persisted. It was reported that several members of staff suffered general malaise (headache, light-headedness, nausea) as a consequence. On investigation, the label on the barrel only indicated the product brand, and possibility of exposure to ethylene glycol and styrene, with no chemical composition listing anywhere on the barrel. Chemical odours persisted for several days, till November 3rd 2025 when expertise was bought to scan for possible contaminants in the ambient air.

Chemical scan of the air inside the work area was conducted using a high-tech portable FTIR, capable of identifying and quantifying unknown chemical air contaminants based on their spectral signature.
Screening results indicated levels of vinyl chloride, benzene and ethyl benzene (likely originating from the chemical spill), and carbon monoxide, nitrous oxide, nitrogen monoxide and nitrogen dioxide (likely from hot, poorly ventilated indoor air spaces vehicle exhaust gases).





RECOMMENDATIONS

-Use clay/ chemical sorbent to remove spillage.
-Implement mitigation measures to improve the air quality inside the office and work-floor spaces to disperse volatile organic and inorganic contaminants before staff let back into the workspace.
-Vinyl chloride (exceeds ACGIH-TWA of 1ppm), benzene and ethylbenzene are cancer-causing.
-Ensure staff are checked for discontinuation of chemical exposure symptoms.