

Peak Assignments for C2-C13 Hydrocarbons in Vehicle Exhaust with Varian CP-Sil 5 CB Capillary Column

by Randall Bramston-Cook

Technique: GC Capillary with Flame Ionization Detection

Column: Varian CP-Sil 5 CB, 60 m x 0.25 mm ID, df = 1 μ m, P/N CP8780

Temperature: 150 °C (hold- 1.00 minute), 100 °C/min to -20 °C (hold- 12.15 minutes), 12 °C/min to 10 °C, 2.5 °C/min to 170 °C, 20°C/min to 210 °C (hold- 2.65 minutes)

Carrier gas: Helium, 2.2 ml/min

Injection: Cryotrapping following California Air Resource Board Non-Methane Organic Gas Test Procedures, Method 1003 protocol

Detector: FID, Range - 12

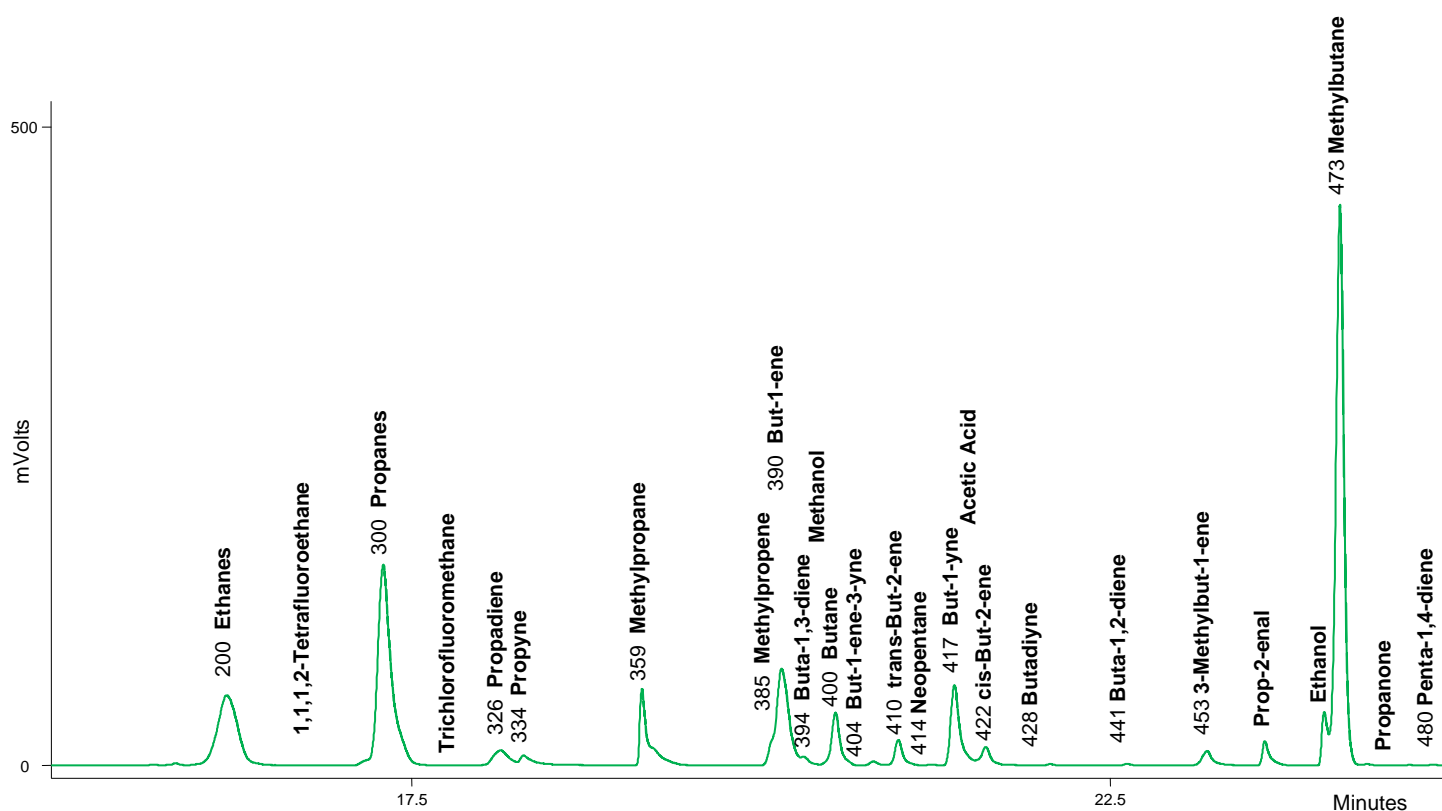
Sample: Vehicle Exhaust

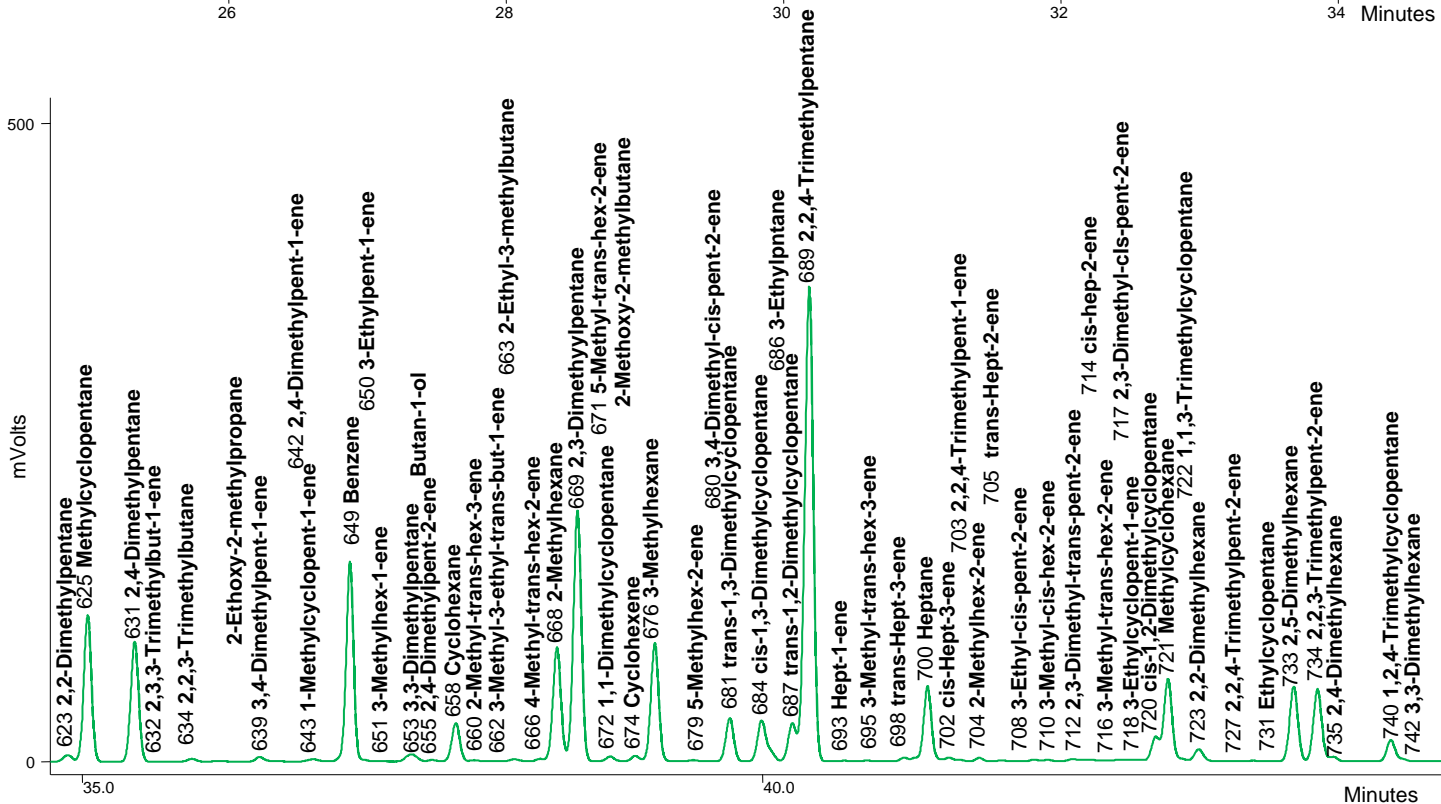
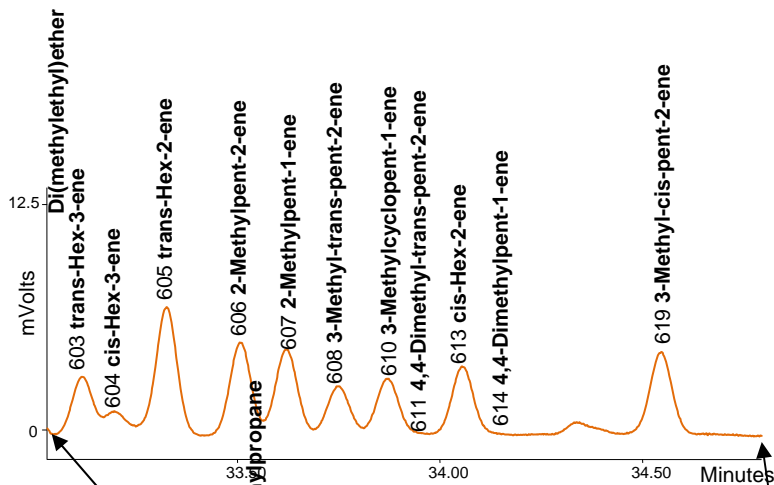
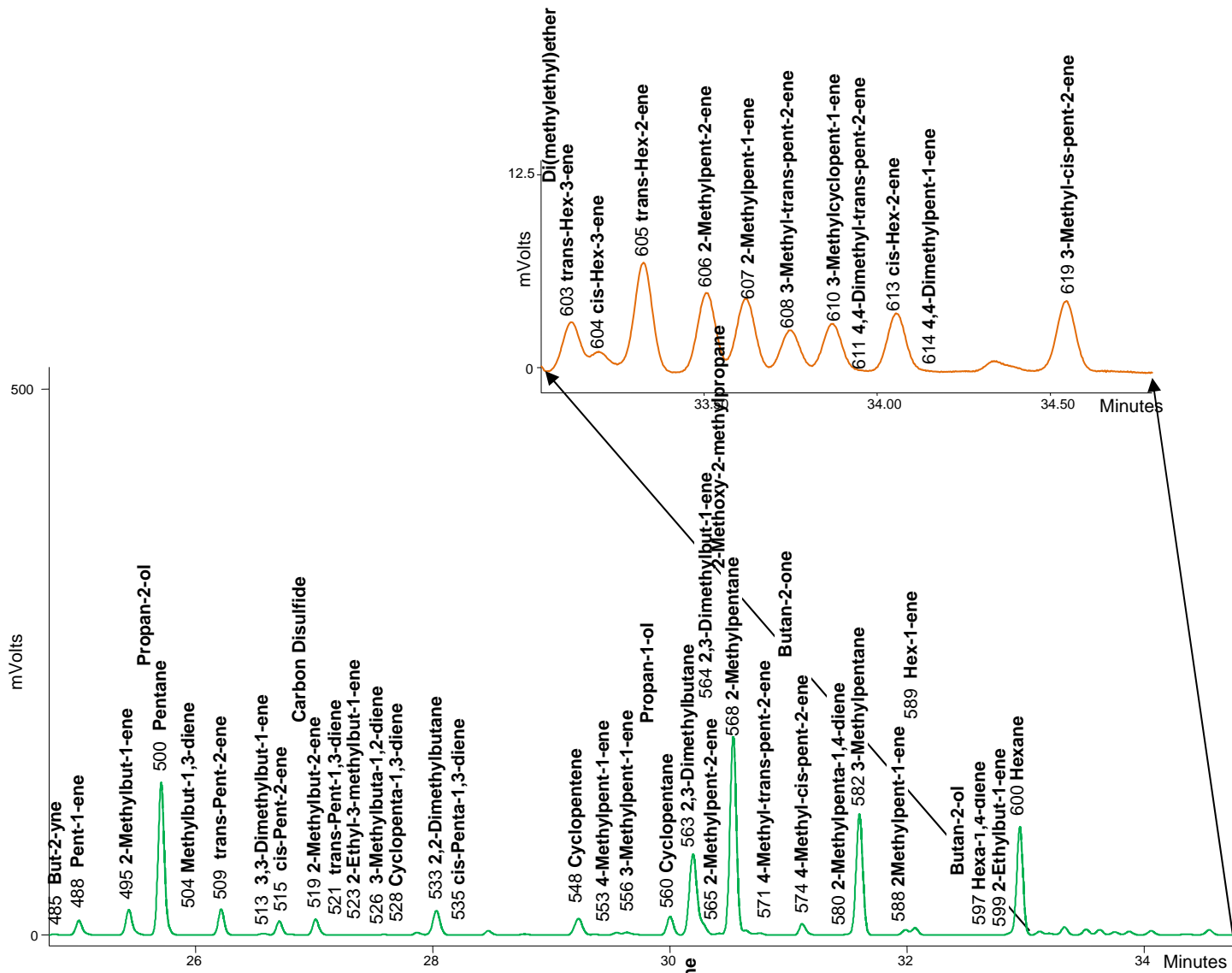
Sample Conc: Variable - from 5 ppbCarbon (Hexylbenzene) to 5,370 ppbCarbon (Methylbutane)

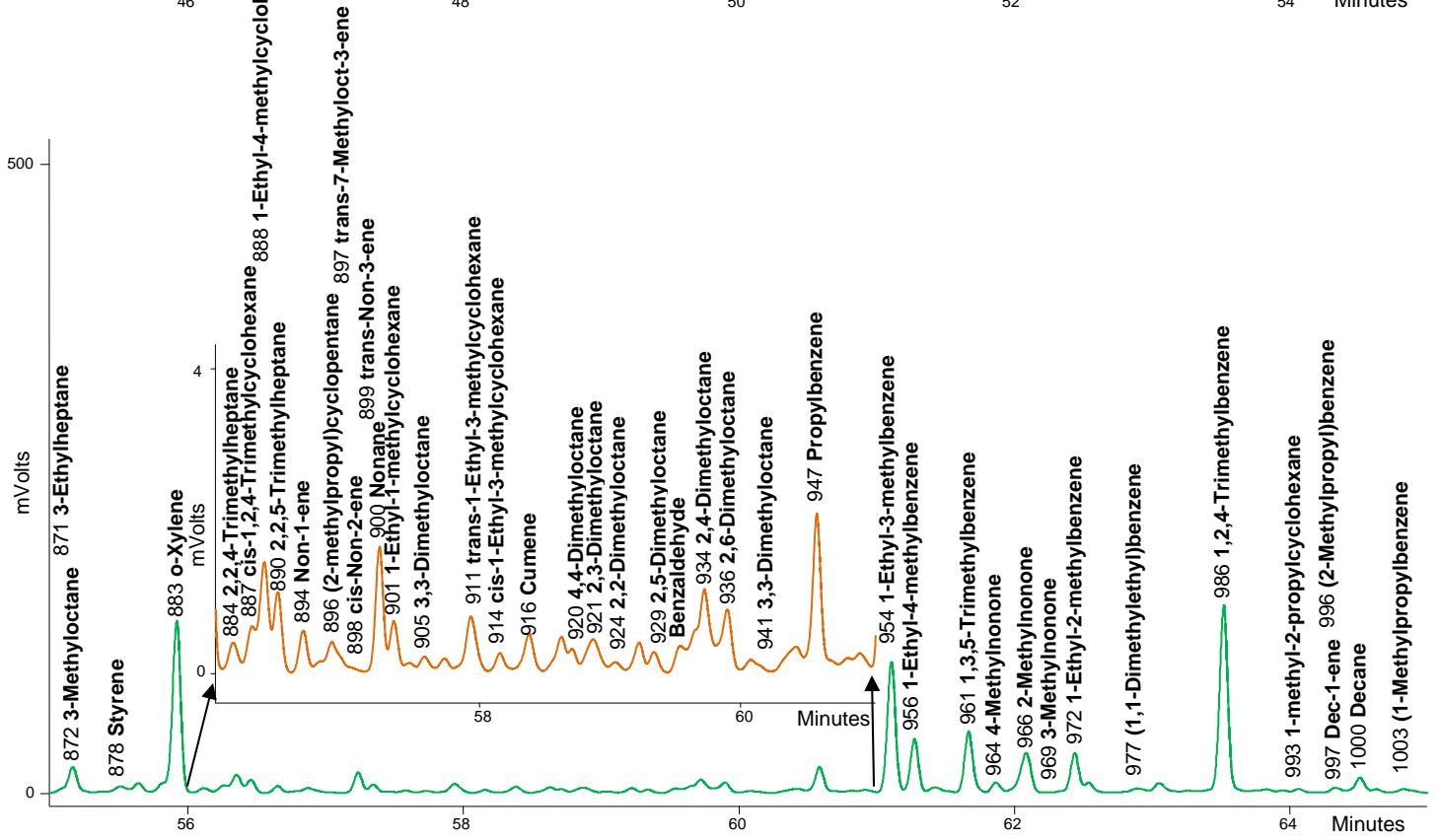
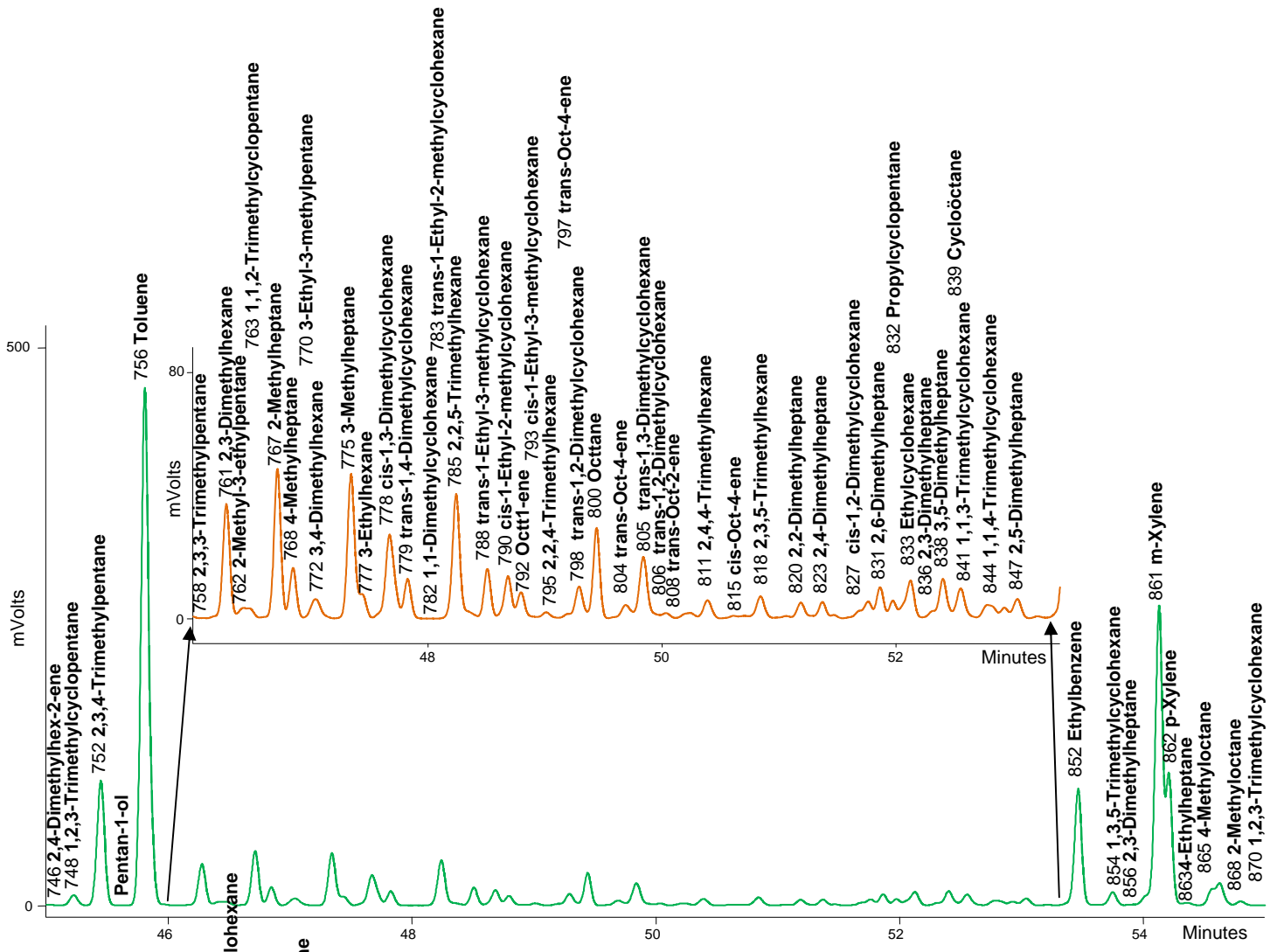
Sample Vol: 30 ml

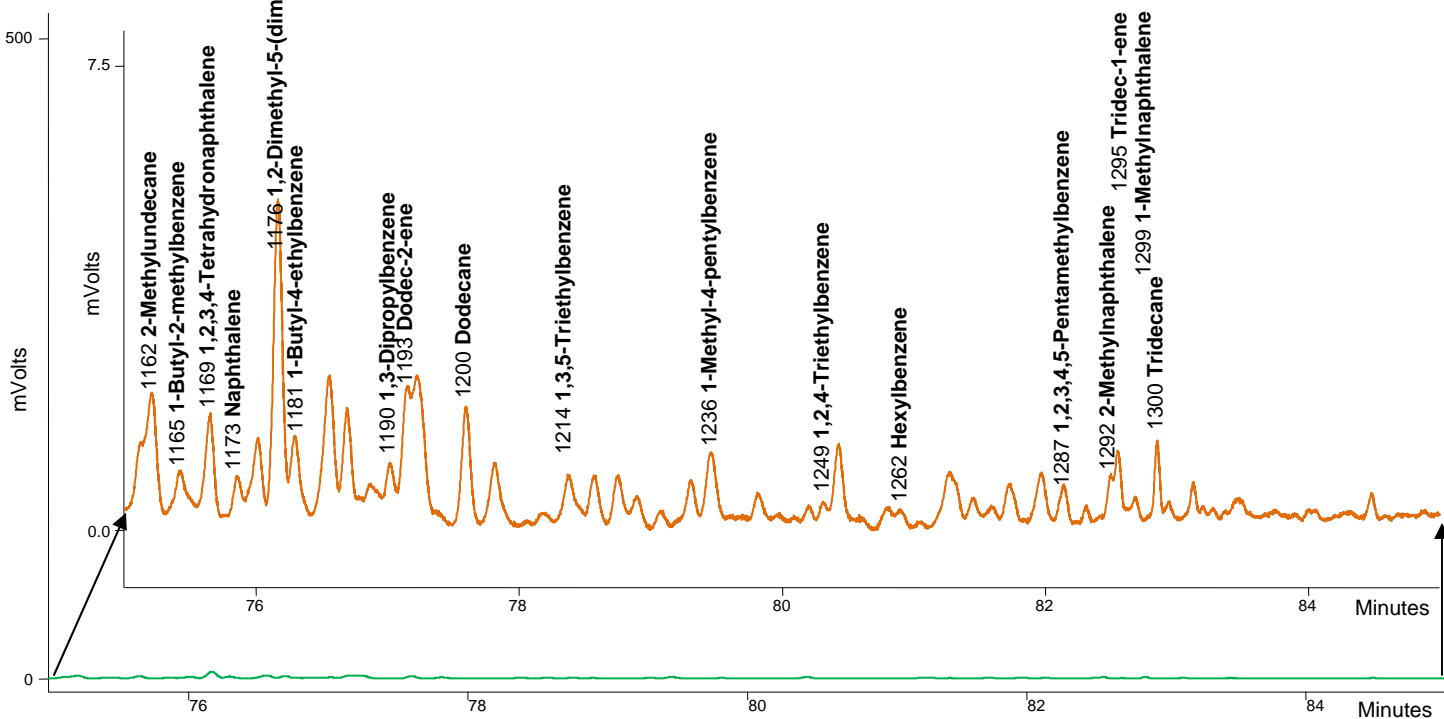
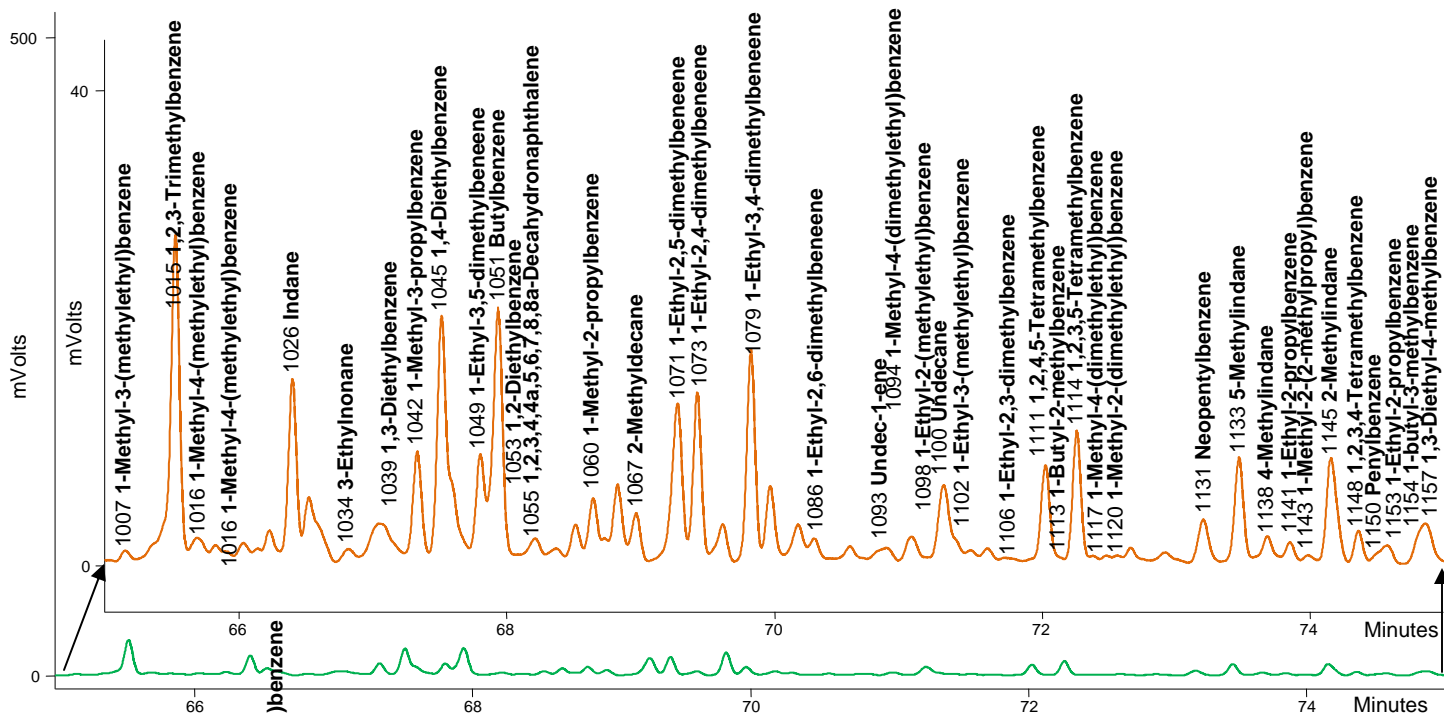
Notes:

1. On-column injection performed at 12.00 minutes. Prior interval involves trapping processes.
2. All compound labels are per IUPAC protocol.
3. Numbers in front of compound names are average Kovats Indices from 15 chromatograms to aid in location of peaks.
4. Oxygenates and halocarbons are not assigned Kovats Indices here, as these peaks tend to move dramatically with adjustments in temperature programming and changes in columns.
5. This column has difficulty separating apart Ethane/Ethene/Ethyne and Propane/Propene, so these peaks are labeled as Ethanes and Propanes, respectively.









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