Comparison of EPA 8260B to EPA TO-15

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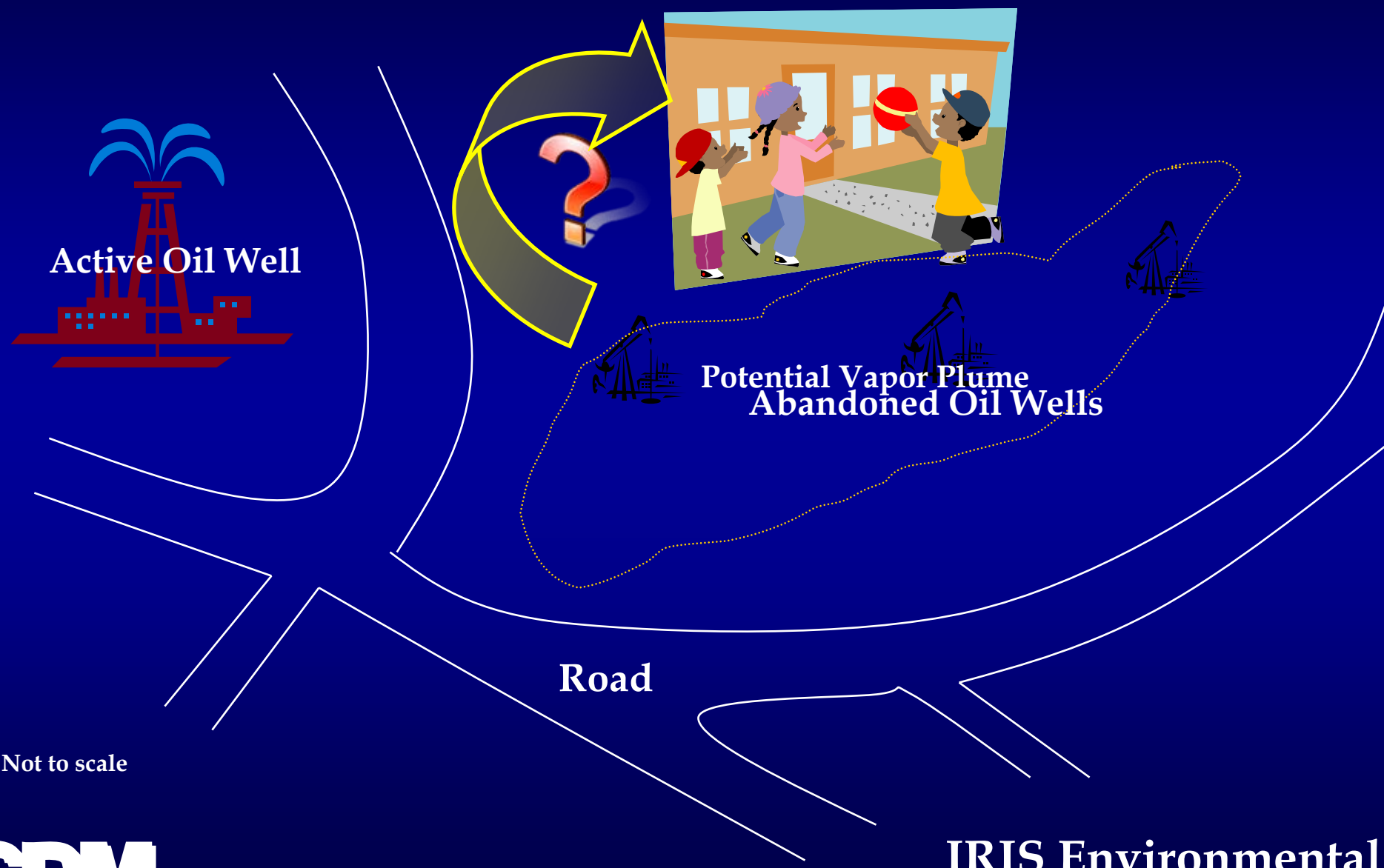
This presentation focuses on data quality challenges associated with differences in data sampling techniques and analytical methods

Understanding the problem



Not to scale

CDM

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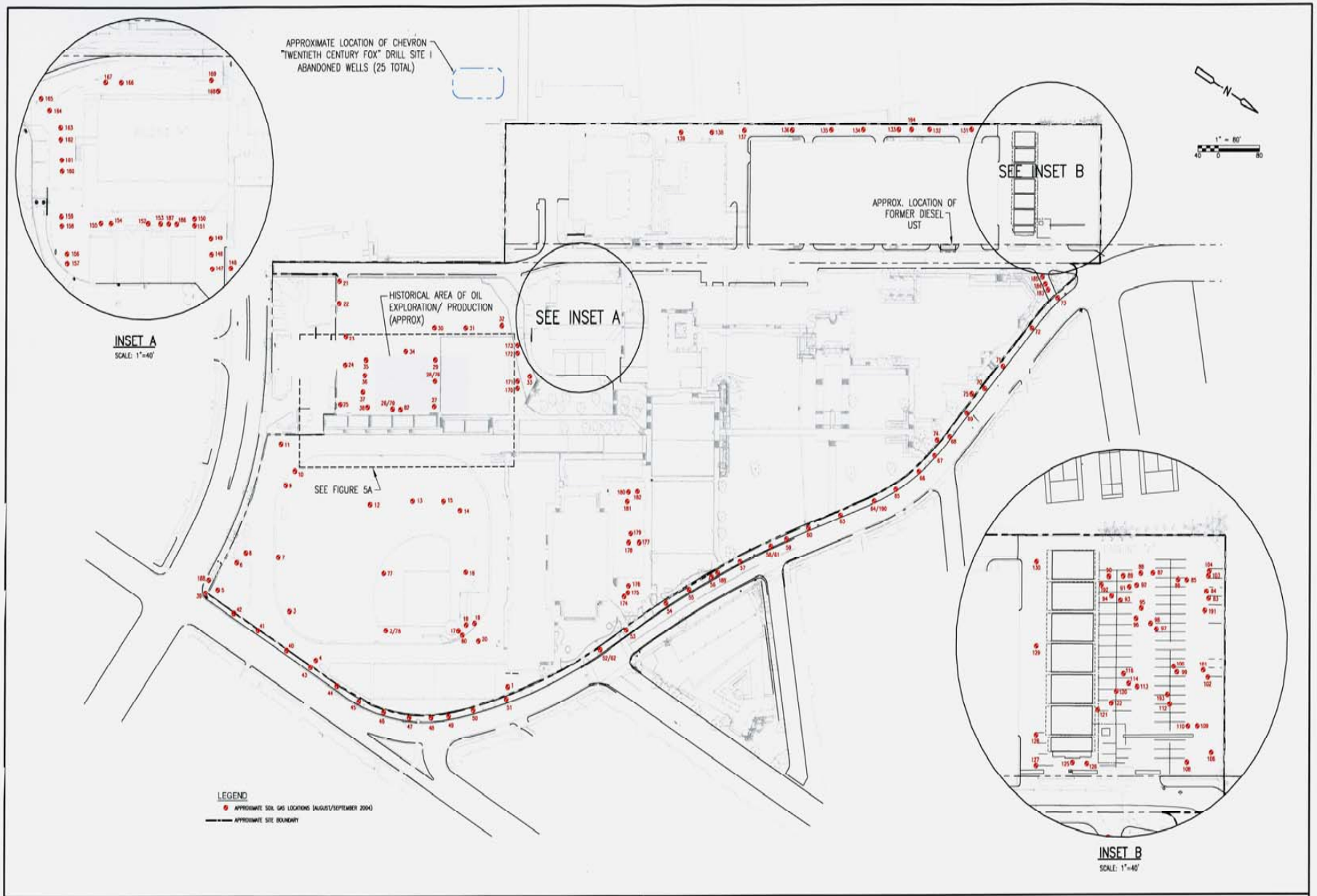


Soil Gas Locations (September 2004)

Figure 1

Difference in Installation and Sampling Techniques

172 Soil Gas Sample Locations

Collection:	Syringes	Summa Canisters with flow controllers
Method:	On-Site Mobile Laboratory	Off-Site Fixed Based Laboratory
Analysis:	EPA 8260B	EPA TO-15

Field Observations inconsistent with current advisory

No site-specific lithological information was collected prior to the soil gas investigation

No leak test or si

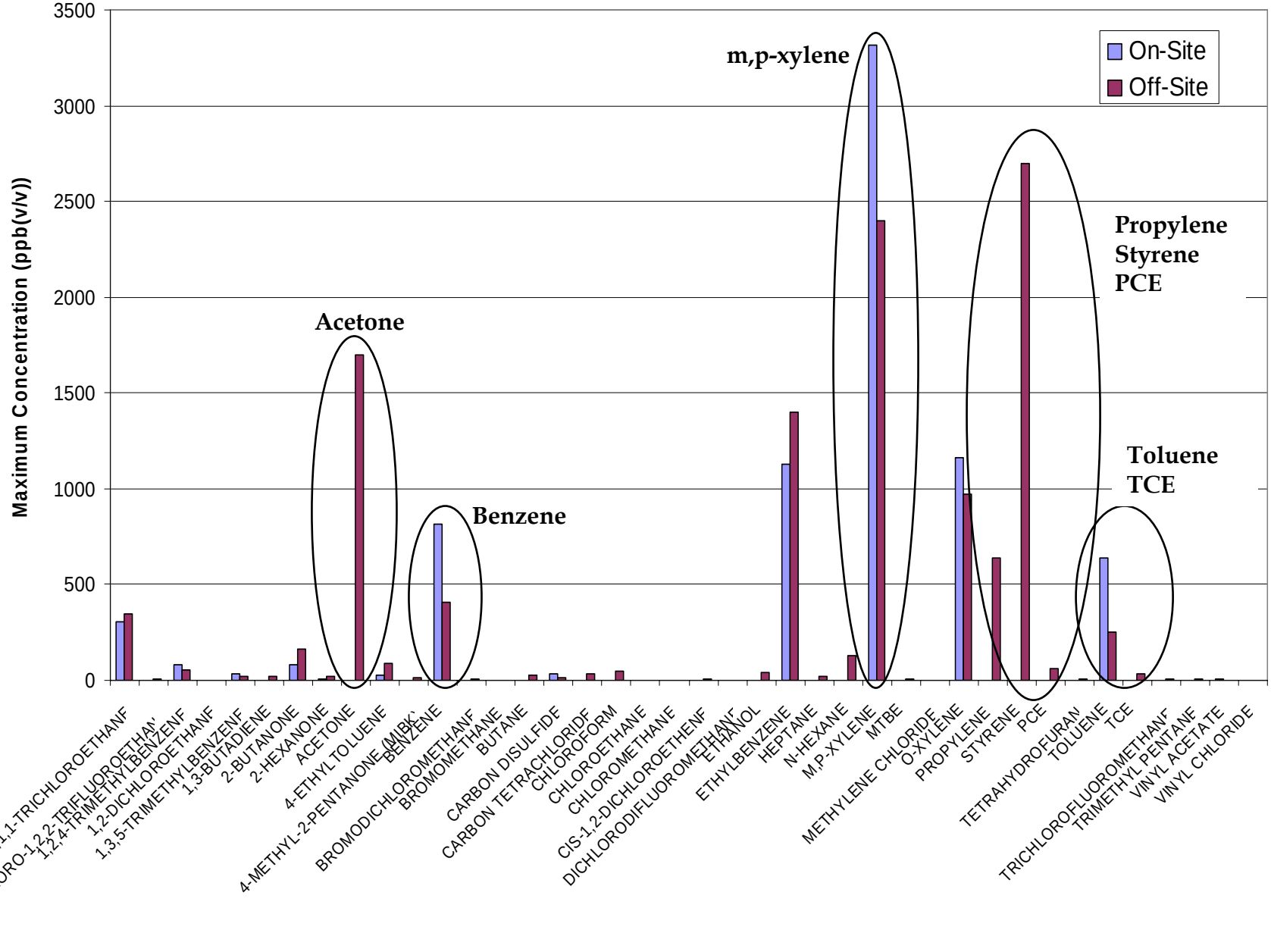
Sample locations e
Sampling equipm
foot below groun
petroleum/diesel

Three-stage wash and rin of drilling rods and oth

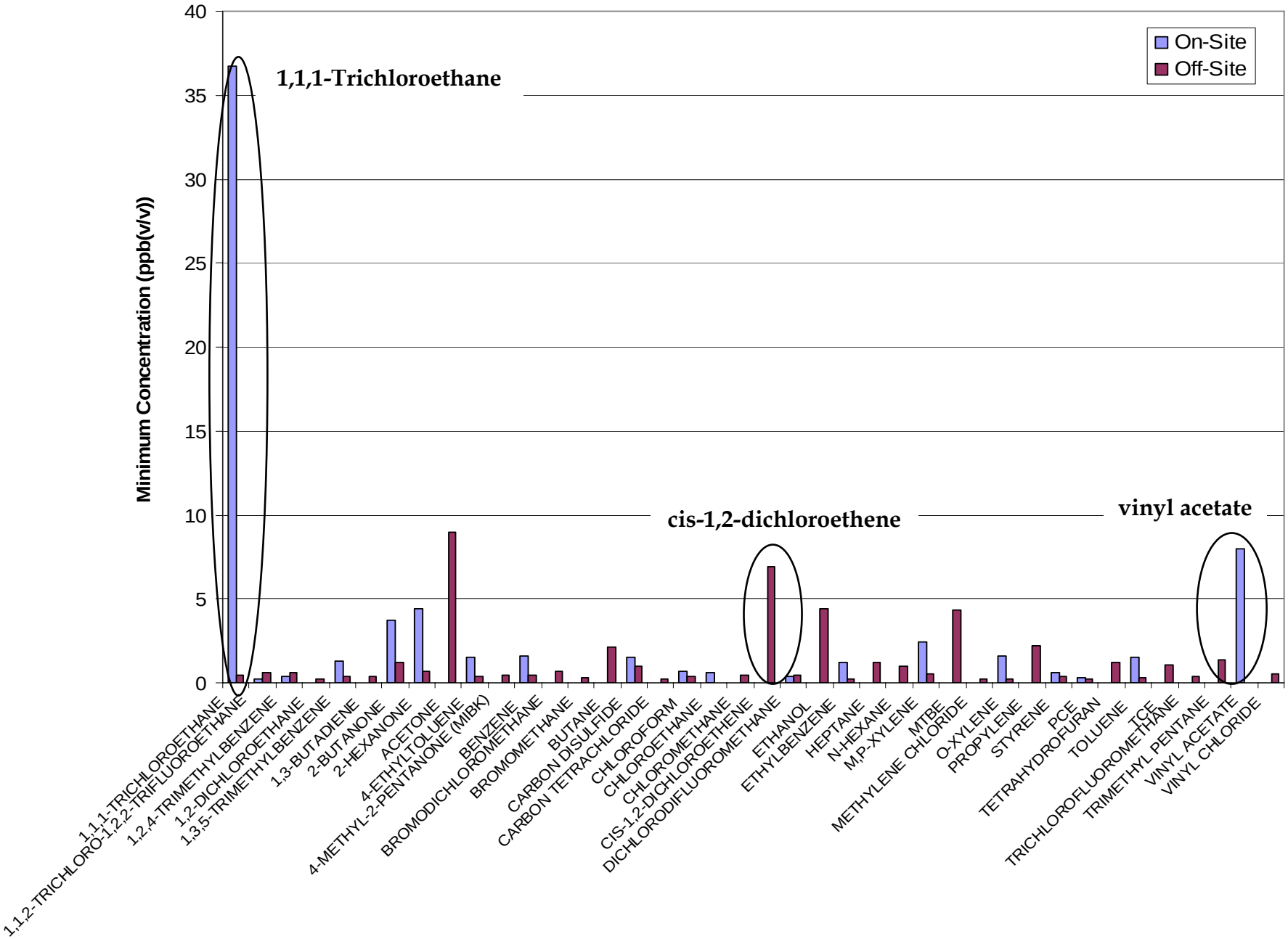
Results

- Tracer compound was detected in three of the on-site samples at values ranging from 17 to 7,200 parts per billion by volume (ppbv)
- Benzene was detected in blank samples by on-site mobile laboratory at <0.08 to 0.14 micrograms per liter (µg/l)
- VOCs results for off-site samples had larger number of detections and higher maximum concentration values for majority of the compounds

Maximum Concentrations Comparison



Minimum Concentrations Comparison



Conclusion

- Data quality objectives were not defined
- Recommended guidelines were not followed
- Variability in analytical and sampling techniques did not produce reliable and defensible data sets.

Discussion

- How significant are confirmation samples?

  - Appropriate selection of sampling techniques and analytical methods as defined by data quality objectives is a MUST

    - Need for protocols to address discrepancies with data sets collected with different analytical techniques