

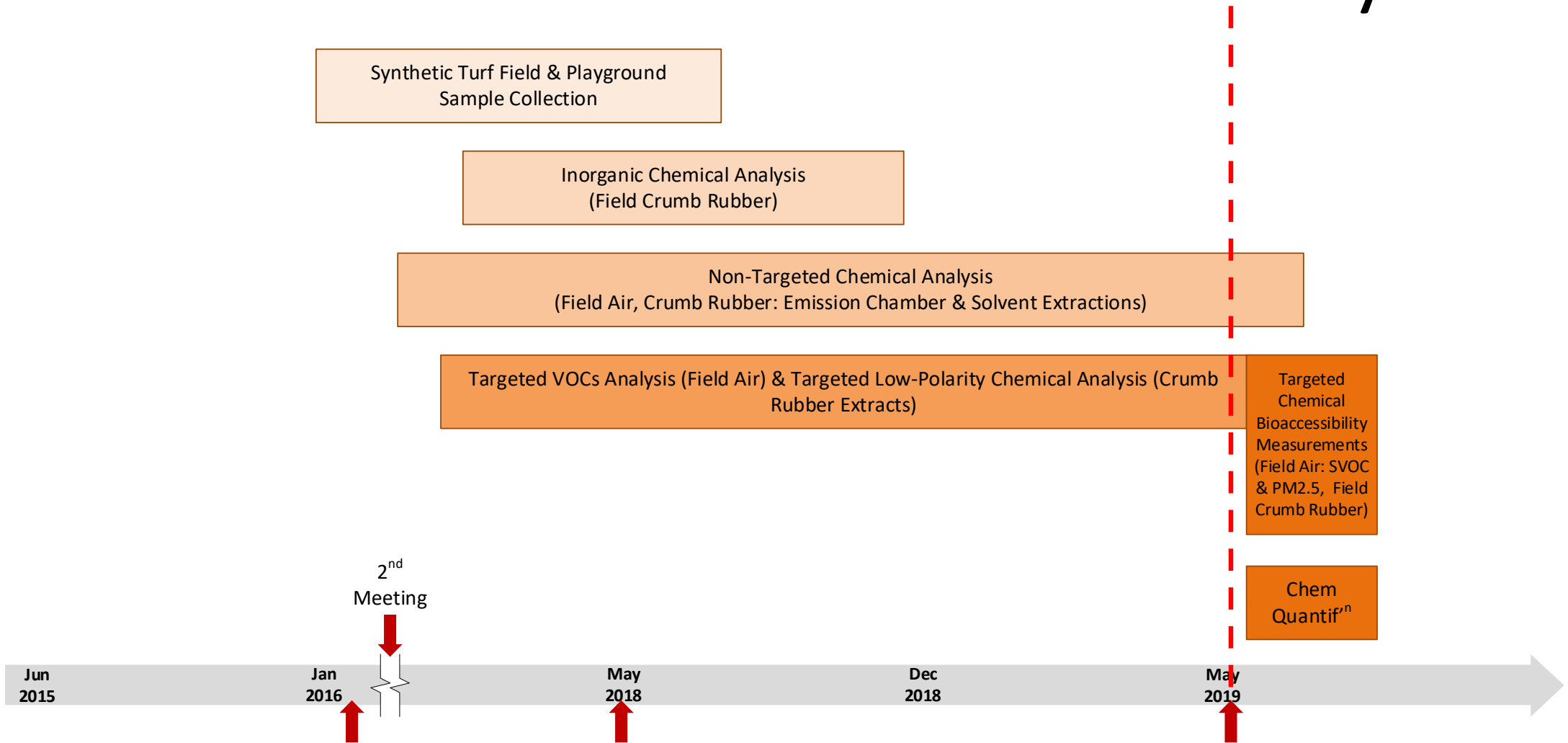
Non-Targeted Chemical Analysis- Field Characterization Study

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Task 4. Field Characterization Study



OEHHA Tire-Related Chemical Database

Sources:

- Chemicals (confirmed or unconfirmed) reported in published tire studies/reports
- Information shared by federal agencies
- Raw materials used in tire manufacturing process provided by the US Tire Manufacturers Association and International Carbon Black Association
- Chemicals advertised for use in manufacturing tires
- Additional chemicals from non-targeted analysis

On-Going Targeted and Non-Targeted Analysis

Goal: To identify chemicals that will be analyzed in all field samples

Chemicals and Samples Subjected to Targeted Analysis:

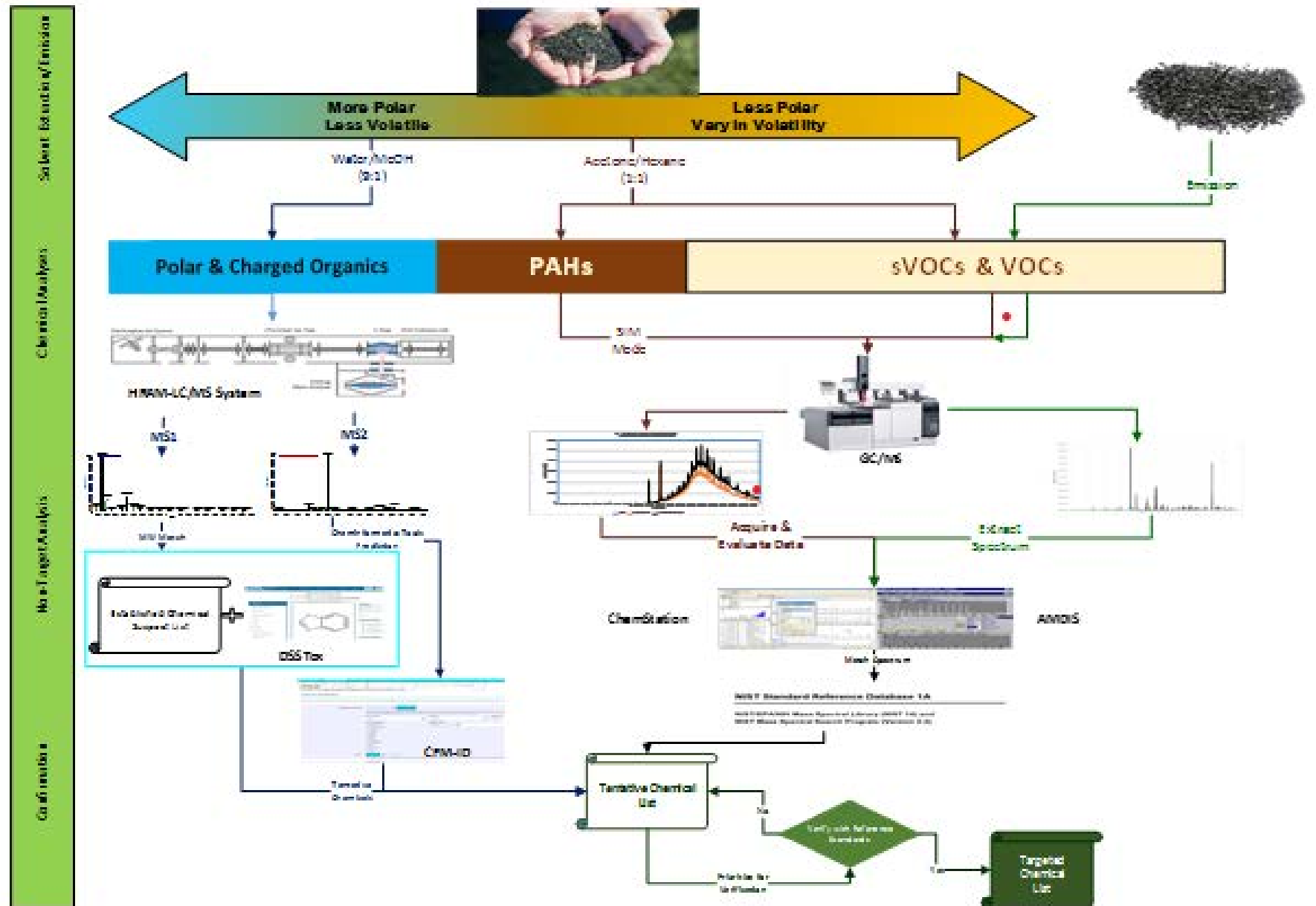
- Polycyclic Aromatic Hydrocarbons (PAHs) analysis by Gas Chromatography/Mass Spectrometry in Selective Ion Monitoring (GC/MS-SIM)
- Chemicals identified in non-targeted analysis, e.g., selected volatile organic chemicals
- Inorganic analysis of crumb rubber sampled for all fields

Chemicals and Samples Used for Non-Targeted Analysis:

- GC/MS analysis of VOCs, semi-volatile organic chemicals (SVOCs), PAHs in emissions from crumb rubber samples or organic solvent extracts of crumb rubber
- LC/MS analysis of polar organic chemicals in polar solvent extracts of crumb rubber



Non-Targeted Analysis Workflow



Chemical Analysis Categories

Chemical Class/Matrix	Instrumental Analysis
Polar Extract	LC/MS
Non-Polar Extract	GC/MS
PAHs	SIM-GC/MS
Aldehydes/Ketones in Field Air	HPLC
VOCs in Field Air	GC/MS

*Some of these chemicals were detected in multiple matrices or by different instruments.

†One chemical was detected in both polar and non-polar extracts of crumb rubber

- Questions...

