

Integrating EPA sampling Protocols into ISO 17025 Standards for Consistency of Quality of Data for Ambient Air Monitoring Field Laboratories.

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Field Laboratories

Inlet System

Gas Analyzers

Particulate analyzers

Meteorological parameters

QA System

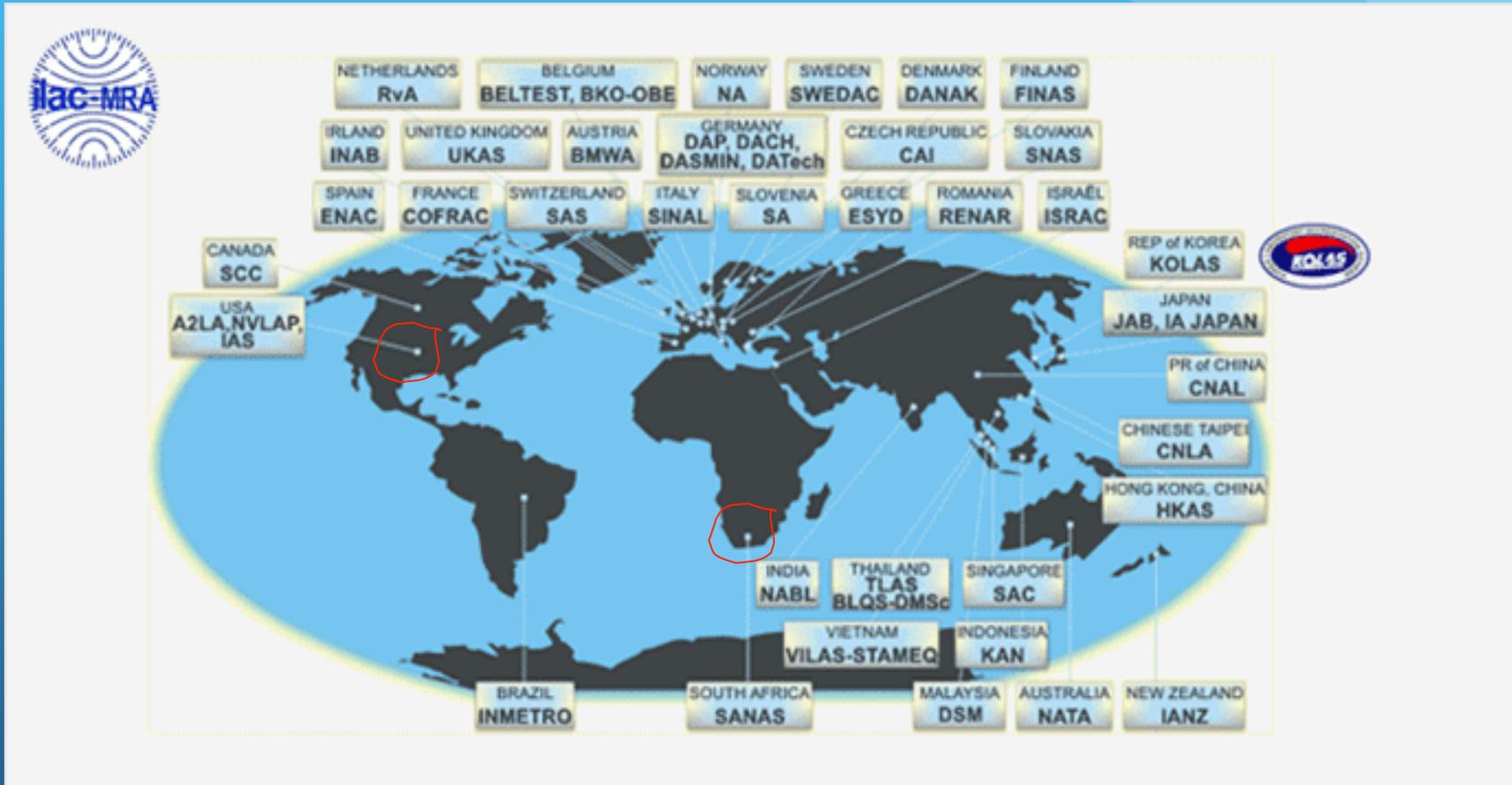
Logging system

Data Transmission

Remote Access



Location



What is the Difference

Community Station (USA)

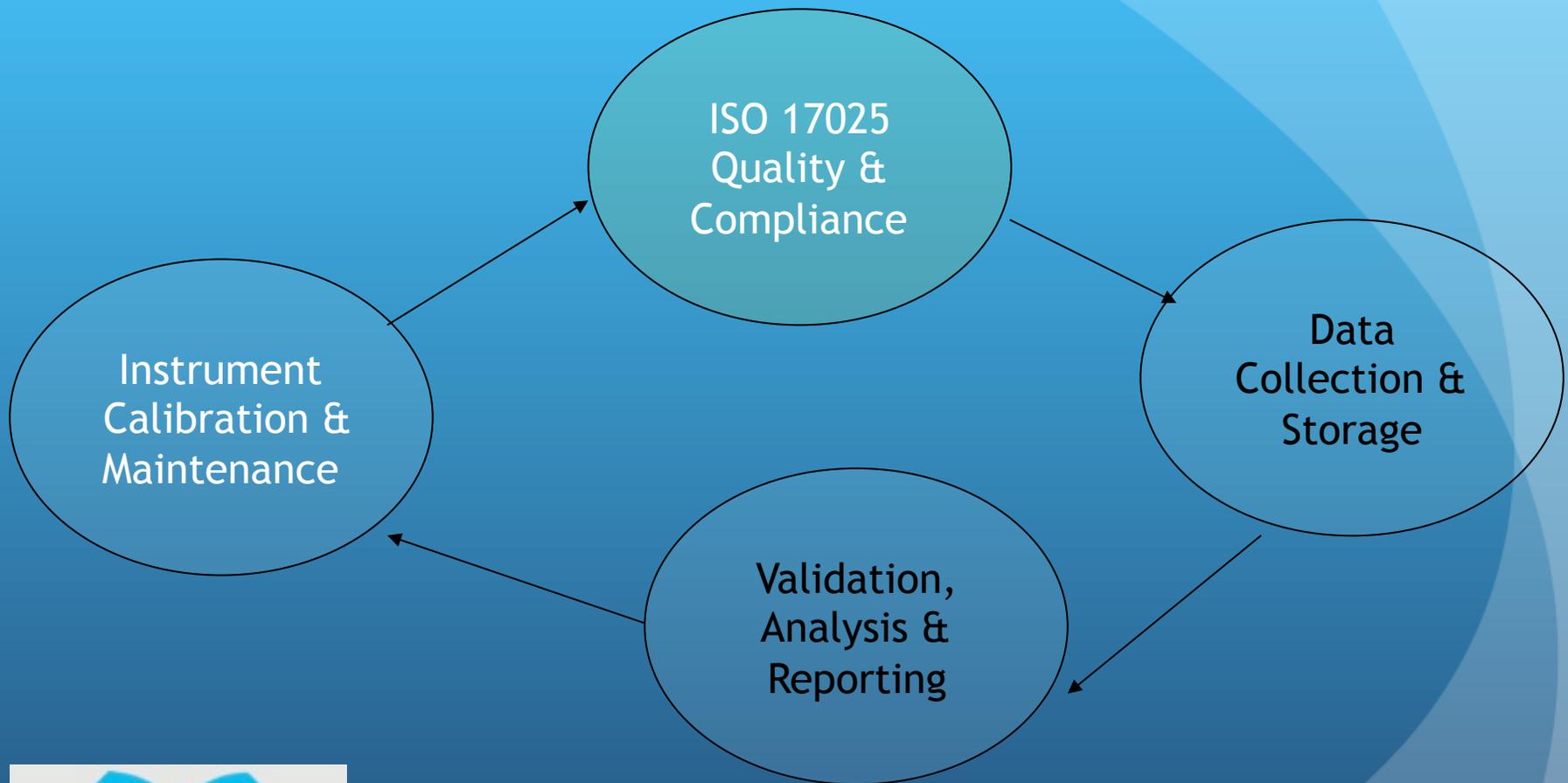
- Monitoring in communities
- Run by Private Company for communities
- Assess impact on communities
- Needs mechanism for proving data quality

Regulatory Station (SA)

- Monitoring impact in community
- Run by private company for Regulators
- Assess impact on communities
- SANAS TR07-03



Integrated AQM System



Define Objectives

- What are we sampling for
- Where are we sampling
- What are we sampling
- How are we sampling
- How often do we need to collect data
- How do we define quality

How are we Sampling



Quality Assurance Handbook for Air Pollution Measurement Systems

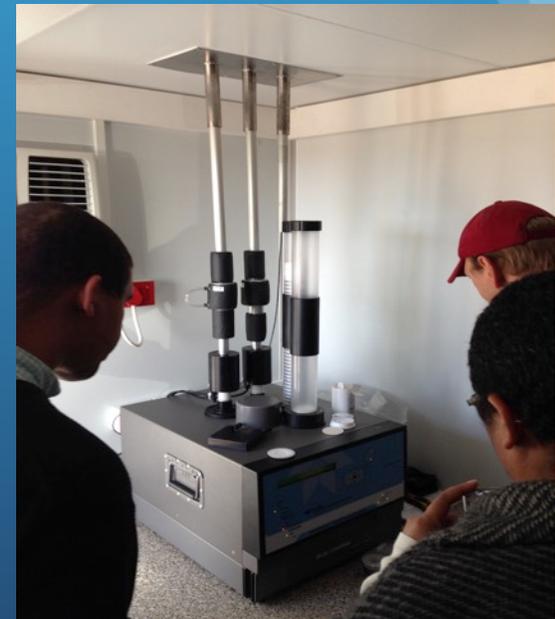
Volume II

Ambient Air Quality Monitoring Program

Requirement	Frequency	Acceptance Criteria	Action
Bias	Annually	Coefficient of Variance (CV) \leq 10%	Calculate according to 40 CFR Part 58 App A sec 2.1.
Precision	Quarterly as per SOP_CHEV_CO_1	Linear regression correlation > 96 %, zero \pm 2 ppb	Adjust analyzer if not within acceptance criteria
	Monthly Zero/Span	zero < 2ppb, span < 15 %	Recalibrate if analyzer not within acceptance criteria
Completeness	N/A	80%	If below 80 % institute quality control measures

Operational

- Routine Maintenance (Daily)
 - Inspection of Data for possible analyzer faults
 - Inspection of Data for errors and outliers
- Technician callout
- Quality Maintenance
 - Weekly site visits
 - Two weekly zero/span checks
 - Quarterly multipoint calibration



Raw Data

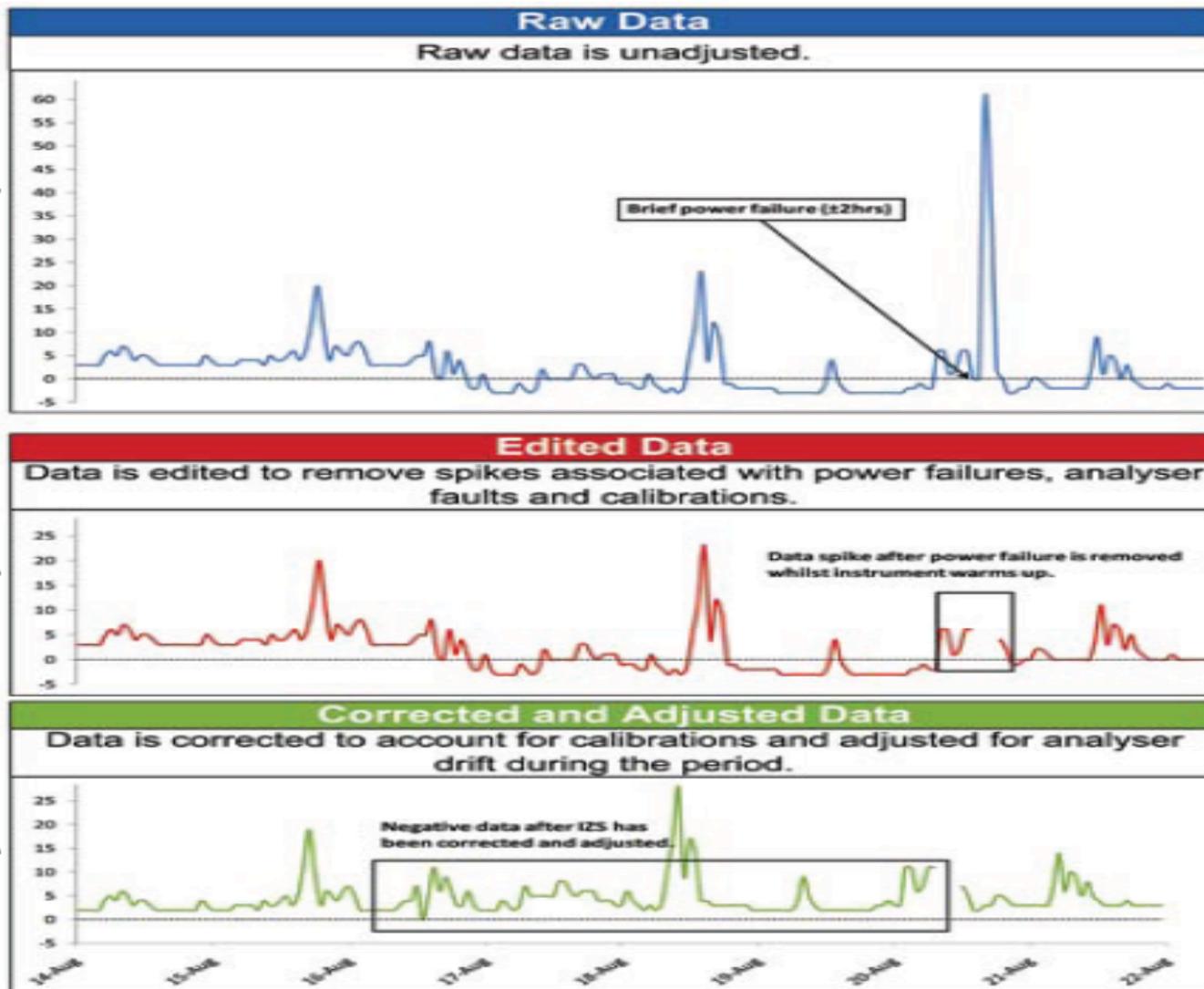
fenceline.org

Atchison Village Area

Refinery Fence Line Location Community Location

Chemical	Concentration (PPB)	Weather Conditions	
<u>Ammonia</u>	3.68	 Clear 	
<u>Benzene</u>	Nothing detected		
<u>Black Carbon</u>	0.054 (µg/m3)		
<u>Ethylbenzene</u>	Nothing detected		
<u>Hydrogen Sulfide</u>	Nothing detected		
<u>3-Methylpentane</u>	Nothing detected		
<u>N-Heptane</u>	Nothing detected		
<u>N-Hexane</u>	Nothing detected		
<u>N-Octane</u>	Nothing detected		
<u>PM 2.5</u>	8 (µg/m3)		
<u>Toluene</u>	Nothing detected		
<u>1,2,3-Trimethylbenzene</u>	Nothing detected		
<u>1,2,4-Trimethylbenzene</u>	Nothing detected		
<u>1,3,5-Trimethylbenzene</u>	Nothing detected		
<u>2,2,4-Trimethylpentane</u>	Nothing detected	Temperature (°F): 57	Wind Speed (MPH): 8
<u>m,p-Xylene</u>	Nothing detected	Humidity (%): 79	Wind Origin: S
<u>o-Xylene</u>	1.21	Dew Point (°F): 51	Wind Direction (°): 175

Monthly Validated Data





Field Lab

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