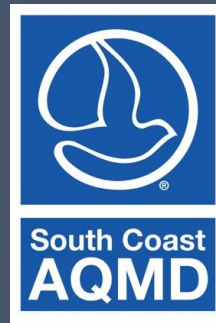
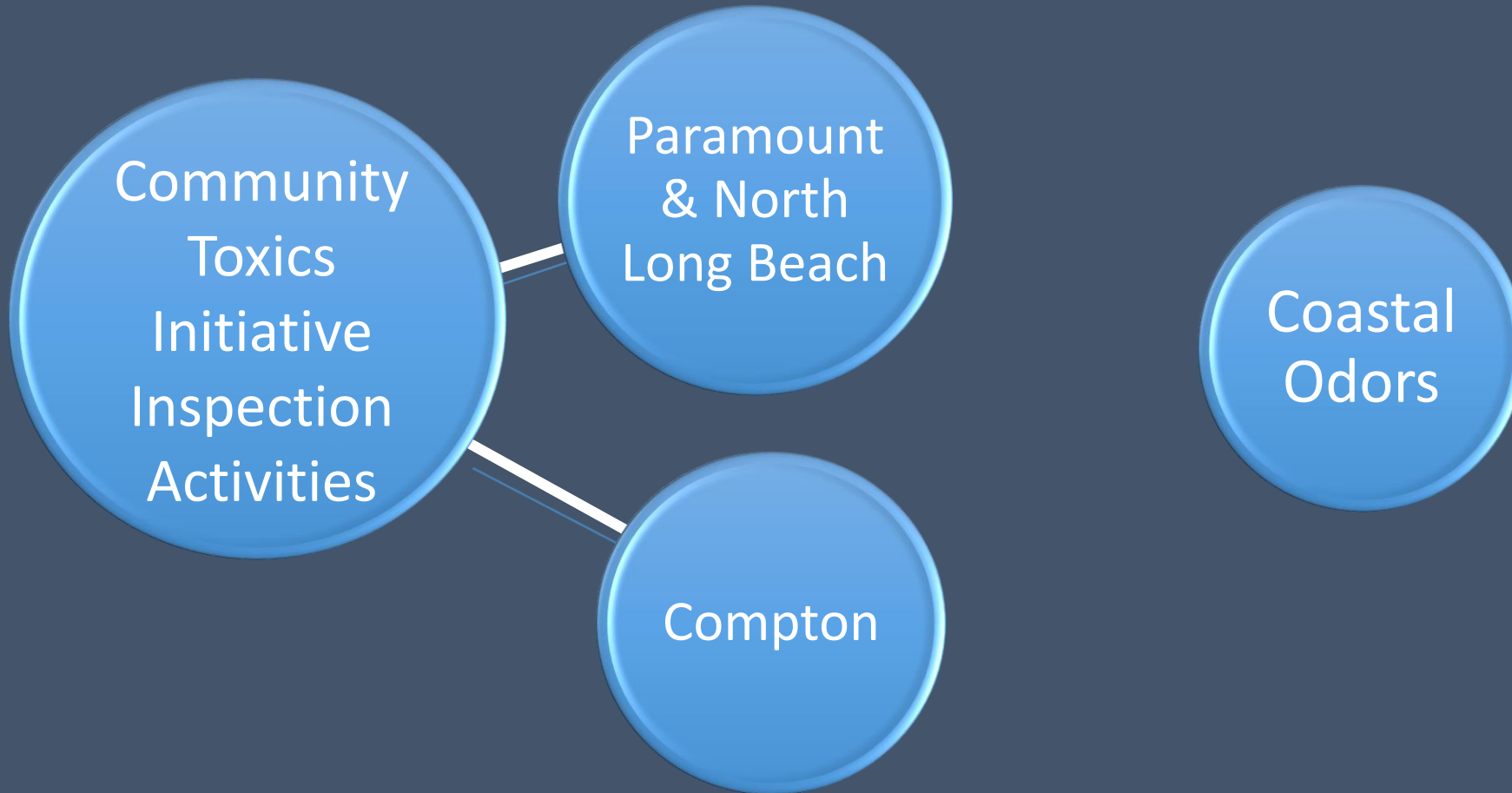


Update on Local Toxics Investigations and Coastal Odors



SCAQMD Governing Board Retreat
May 2018

Focused Investigations



Internal Collaboration

Compliance and Enforcement

Information Management
and Finance

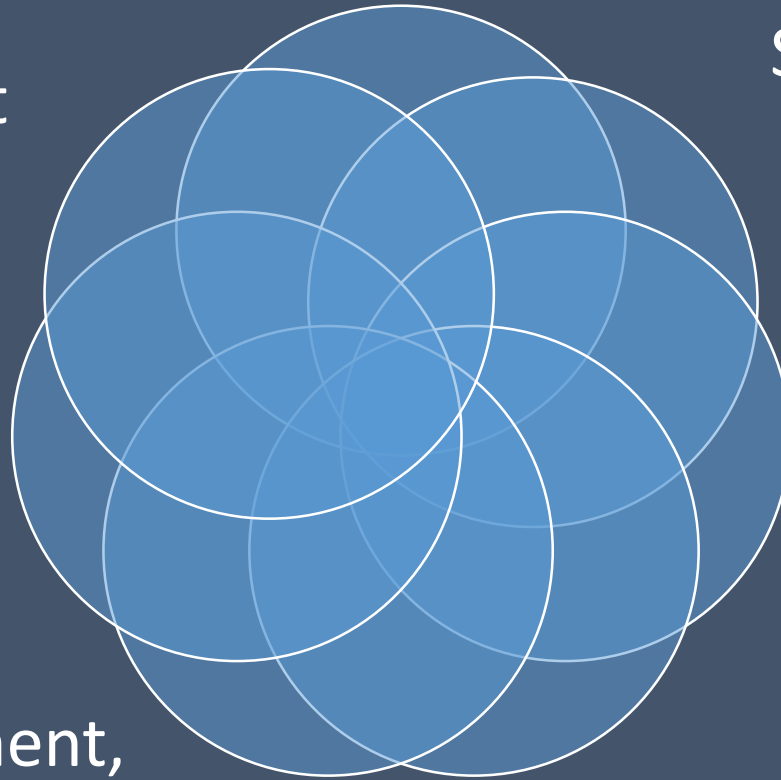
Science and Technology
Advancement

Legal

Legislative, Public
Affairs and Media

Planning, Rule Development,
and Area Sources

Engineering and
Permitting



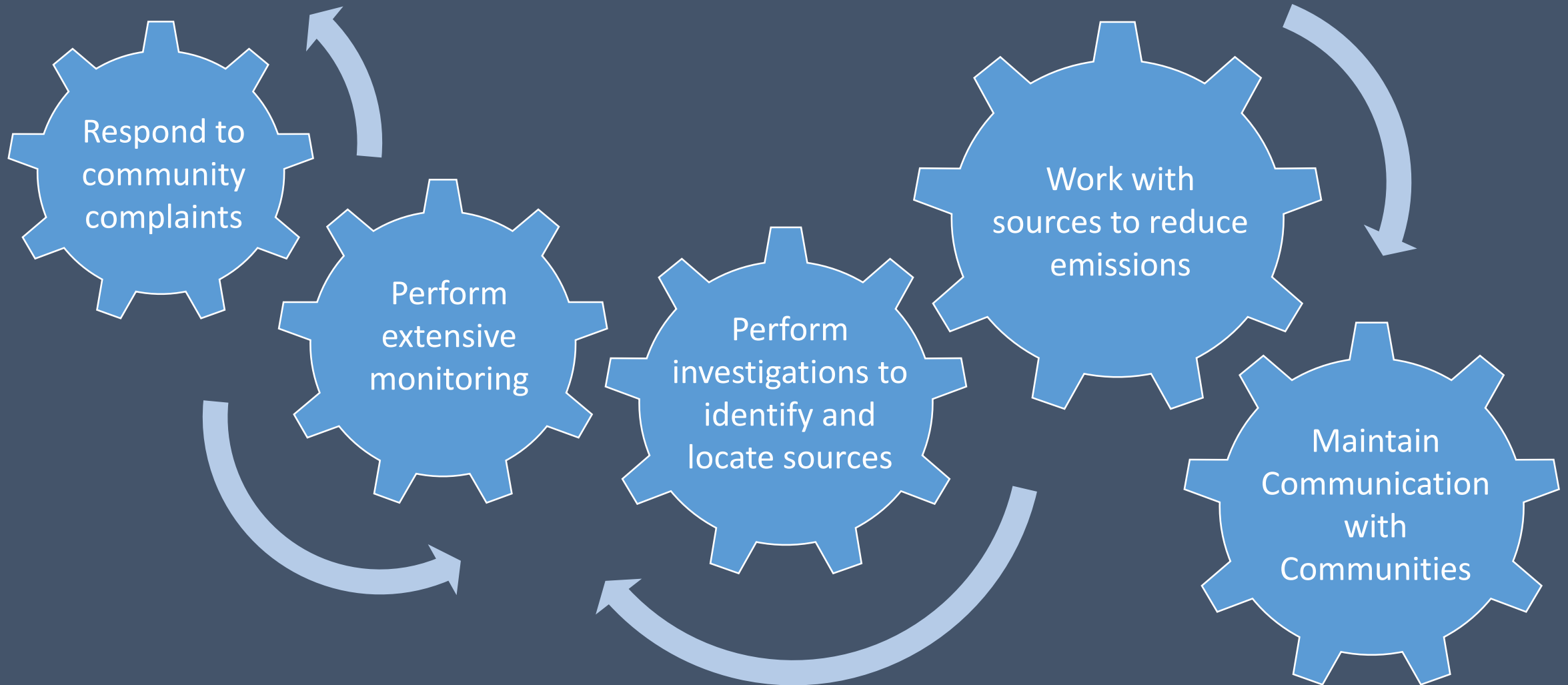
External Collaboration



- Multi-Agency Task Force
- Agency Complaint Referrals
- Cross-Training
- Information Sharing
- Developed all City Notice Sharing
- Weekly Agency Calls
- Town Hall Meetings
- Website Updates
- Ad-Hoc and Committee Meetings



Strategies for Hexavalent Chrome Investigations





Inspection Activities

Inspection Activity	Paramount and Long Beach (North)	Compton
Active Facilities with SCAQMD Permits	907	165
Concentrated Efforts	November 2016 – April 2017	June 2017 – April 2018
Facility Inspections	1,956	322
Survey Inspections	56	99
Complaints	4,159	272
Notices to Comply	815	178
Notices of Violation	237	61

Statistics From 1/1/2013 – Present

Instrumentation Used

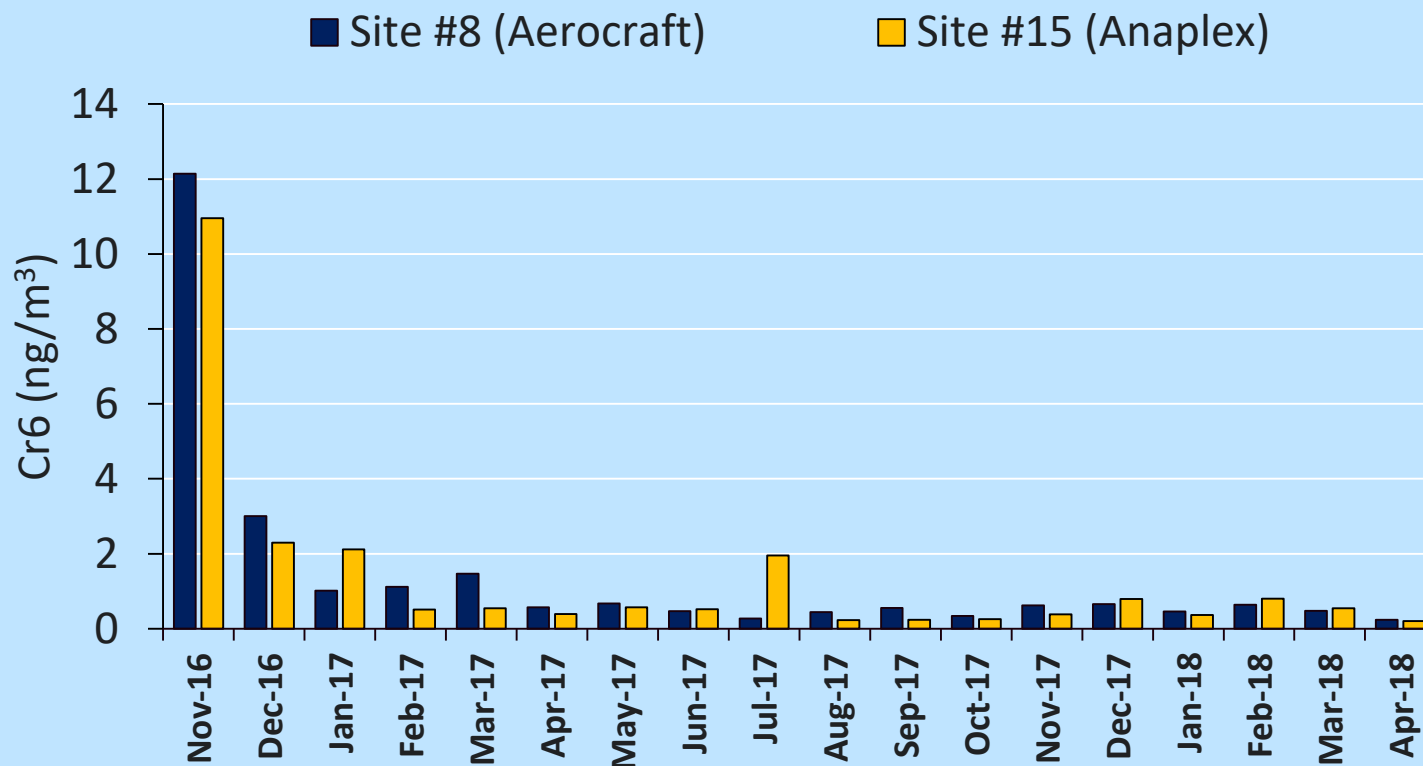
X-Ray Fluorescence (XRF) Analyzer



- Used as a screening tool to identify concentrated areas
- XRF identifies total chromium, not hexavalent chromium
- Elevated levels prompt further investigation

Paramount Air Monitoring

Monthly Average Hexavalent Chromium Levels



As of April 25, 2018

3657

Samples analyzed for hexavalent chromium at 48 sites since Oct 2016

21

Individual sources tested at 8 facilities to quantify their emissions

3

Companies (Anaplex, Aerocraft, and Lubeco) signed a Stipulated Order for Abatement

9

Curtailment orders (cease operations):
Anaplex: 5 times
Aerocraft: 4 times

Compton Air Monitoring

Average Hexavalent Chromium (June 2017 – April 2018)



As of April 25, 2018

719 Air samples analyzed for hexavalent chromium since June 2017

12 Air sampling sites located upwind and downwind of target facilities

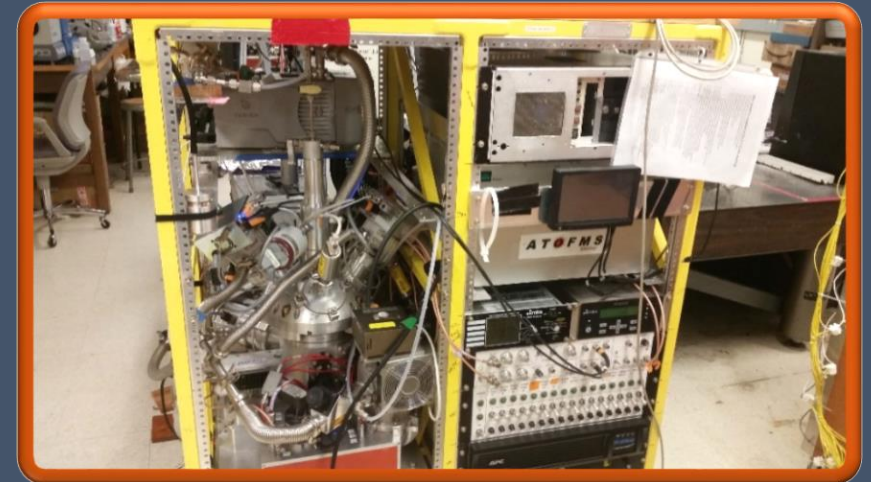
9 Individual sources tested at 2 facilities to quantify their emissions

2 Multi-metals survey conducted around target facilities using a mobile monitoring platform

Additional Efforts to Find Metal Sources

- Real-time Mobile Monitoring of Total Metals (UCSD/ CARB)

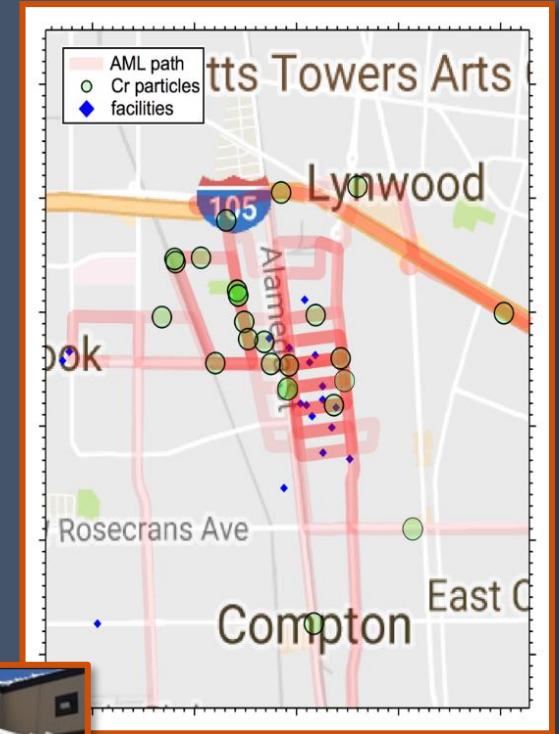
- 7-day monitoring campaign in July and September, 2017 in Compton and Paramount
- Total Cr and other metal particles were found throughout Paramount and Compton
- Highest numbers of Cr detected in the industrial area of Compton (These results are still preliminary)



Aerosol Time-of-Flight Mass Spectrometer

Additional Efforts to Find Metal Sources

- Real-time Mobile Monitoring of Total Metals and Cr6+ (Aerodyne Research/ Desert Research Institute)
 - Conducted a 5-week monitoring campaign during March-April, 2018
 - Variety of fast time response instruments for the measurement of gas and particle phase species
 - More than **50 facilities** were monitored in **~10 different communities** including Paramount and Compton



*Areas visited by
Aerodyne/DRI between
03/03 and 03/09*

Additional Efforts to Find Metal Sources

- Concrete Construction Pilot Study
 - Samples collected during various concrete processes: **grinding, cutting, breaking, pouring**
 - Some elevated levels of Cr6+ observed
 - Highest during concrete cutting
 - Not exceeding OSHA threshold
 - Continue to gather more information for determining next actions

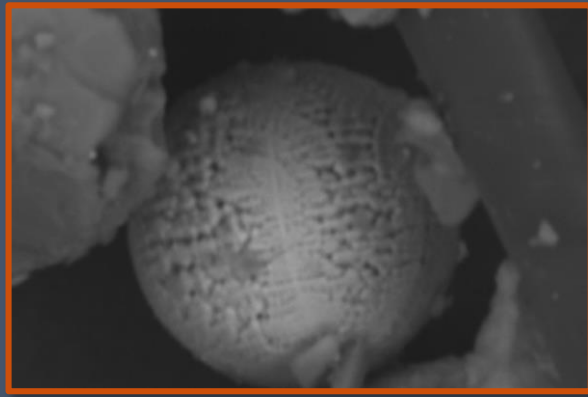
Additional Efforts to Find Metal Sources

- Furnace Study to Characterize Sources of Cr6+ (UCR)
 - Many industrial furnaces in the Basin
 - Several mechanisms may be causing increased production of Cr6+ at heat-treating furnaces
 - Characterize, quantify and perhaps identify the specific mechanisms that lead to Cr6+ production from industrial furnaces

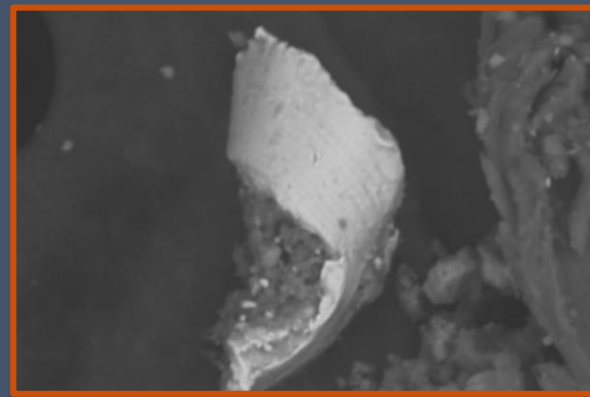


Additional Efforts to Find Metal Sources

- **Additional Laboratory Capability: Scanning Electron Microscope with Energy Dispersive Spectrometer (SEM-EDS)**
 - SEM-EDS provides information that can identify potential sources of toxic metals emissions
 - Identifies the morphology, size, and metal levels of particles



Spherical Metal Particle
Contains Titanium



Shaved Metal Particle
Contains Chromium, Iron, Nickel and Aluminum

Coastal Odor Complaint Investigations



- Complaint Area: Huntington Beach, Seal Beach, Long Beach
- Between 1/1/2016 to Present Approximately 1,376 Complaints have been Received Describing a Petroleum / Sulfur / Chemical Type Odor
- Enhanced Complaint Response



Coastal Odor Complaint Challenges

- Multiple potential sources (complaints report petroleum/sulfur/chemical odors)
- Odors are reported to originate on the shoreline and quickly dissipate
- More odor events are reported in warmer months
- Odor event frequency and intensity has been increasing in the last two years (more events of 5 or more complaints)

Instrumentation Used for Investigations

- Toxic Vapor Analyzer (TVA) with flame ionizing detector (FID) and photoionization detector (PID)
- Optical Gas Imaging Camera



Optical Gas Imaging Camera Footage

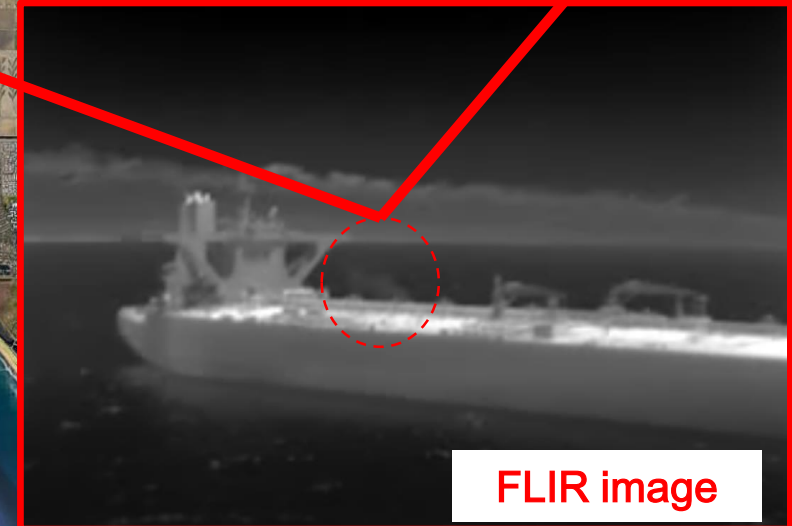
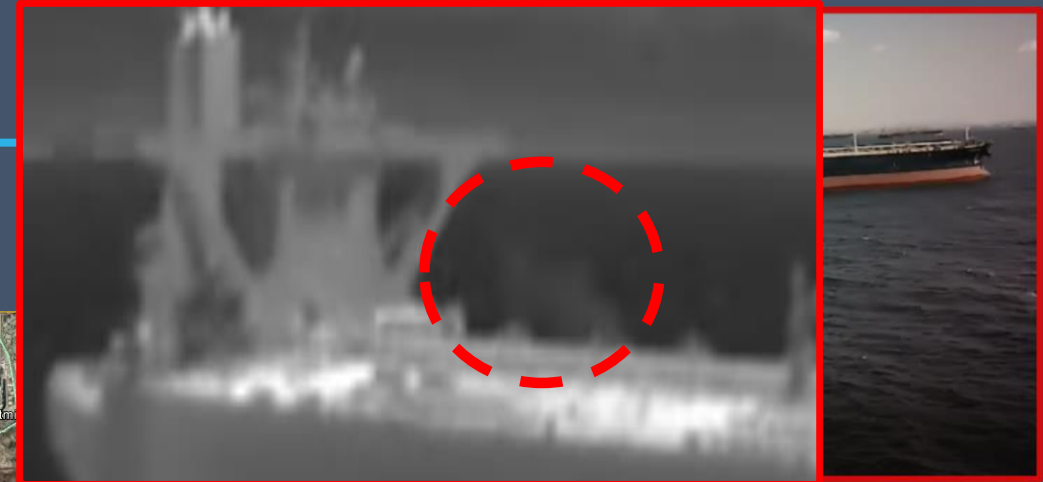
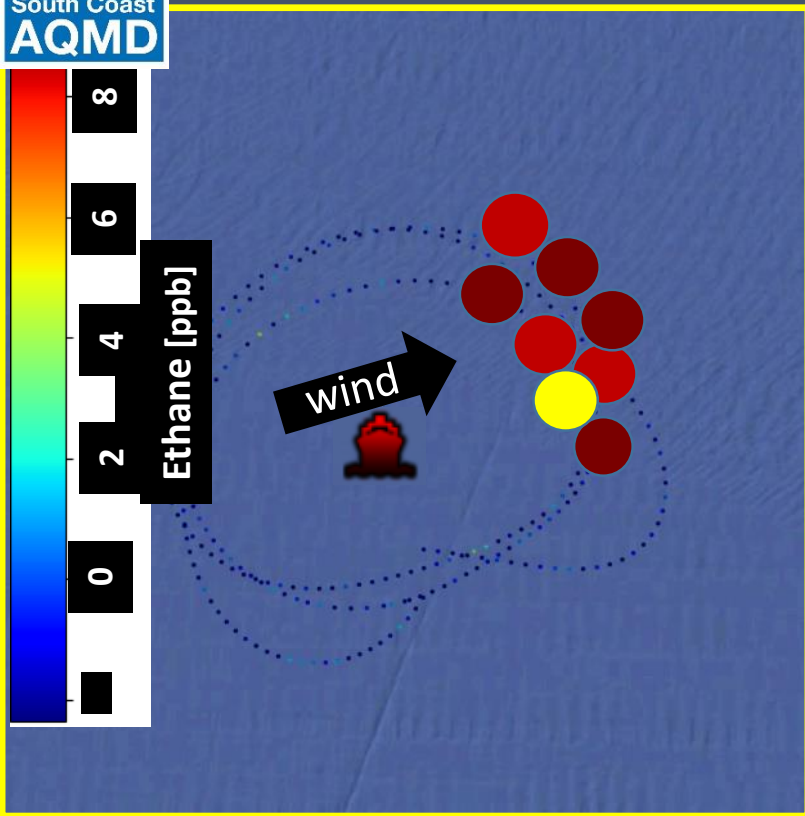


Monitoring Efforts for Coastal Odors

- Air samples are collected in SUMMA canisters and Tedlar bags during the odor investigations
 - Air samples are analyzed for the presence of volatile organic compounds and total reduced sulfur
 - Indicative of petroleum source
 - Final results are available online at www.aqmd.gov
- SCAQMD provided three hands-on training sessions for local fire departments and community residents on sample collection
- Meteorological models used to estimate the location of the odor source



Airborne Monitoring



FLIR image

- Elevated methane and ethane measured downwind of an oil tanker ship

Data CSUMB SFML, CA OP
Data USGS
© 2018 Google

April 19, 2018



Next Steps

- Respond to air quality complaints and perform periodic surveillance to investigate potential sources of hexavalent chromium and coastal odors
- Continue air monitoring surveys to further assess potential sources
- Work Collaboratively with Other Agencies
- Post Updates on our Website at www.aqmd.gov

Questions?