New Technology: Forward Looking Infrared (FLIR) Cameras

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Inspections of Volatile Organic Compound (VOC) Sources

• Valley’s challenges in meeting federal air quality standards unmatched due to unique geography, meteorology and topography
• As a result, businesses subject to toughest air regulations in the nation including for VOC sources
• The San Joaquin Valley is home to approximately 80% of oil and gas operations as well as a large number of wineries, bulk plants, landfills and other VOC sources
• The District is continually evaluating technology that will improve the quality and efficiency of inspections and complaint investigations
FLIR Camera
What is the FLIR Camera

• FLIR cameras is a thermographic camera that senses infrared radiation
• Uses sensors that detect infrared radiation to create an image for video output
• Many different types and uses for FLIR cameras
  – The District uses ones that are designed to only detect methane, hydrocarbon and VOCs
Benefits of Using FLIR

• Ease of use
• Small and lightweight
• Allows faster surveys of large areas
  – Oil and gas facility may have tens of thousands of inspection points
  – Ability to see leaks from areas that would otherwise be inaccessible
• Visualize gas leaks in real-time
• Ability to capture and record photos and video
Fugitive Emissions
Pressure-Vacuum Relief Valve
Riveted Tanks
Riveted Tanks
Effluent Scrubbers
Considerations and Limitations

• FLIR cameras are costly, approximately $100,000 per device
• Depending on use, may need to have multiple lenses (long and short range)
• It is a qualitative device and for documentation of leaks under District rules, need to verify with a quantitative device in accordance with EPA Method 21
• Some of the devices are not intrinsically safe
  – District recently purchased a newer version that is intrinsically safe, however, cannot change out the lens of the intrinsically safe unit
Questions?

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