

# NYSEARCH Perspective

## Past, Present & Future Leak Detection Technologies

PHMSA Leak Detection Workshop 3/27/12

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# NYSEARCH Members

- **CHG & E\***
- **Con Ed\***
- **Corning**
- **National Grid – Keyspan\***
- **National Fuel Gas\***
- **National Grid (NY) – NMPC\***
- **NYSEG\***
- **O & R\***
- **RG & E\***
- **St. Lawrence**
- **Enbridge Gas\***
- **BG & E**
- **PSE&G\***
- **PECO Energy\***
- **Questar\***
- **Washington Gas Light**
- **SoCal Gas\***
- **PG & E**
- **SouthWest Gas**
- **XCel Energy**
- **El Paso Gas**

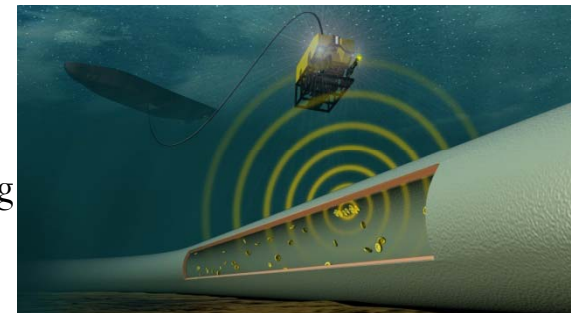
# Past, Present and Future

- Past/Present

- NYSEARCH/PSI/Heath Development of Remote Methane Leak Detector (RMLD) for Walking Survey
- NYSEARCH/GdF testing of RMLD for Mobile Survey
- Development/Testing of Acoustic Leak Pinpointing techniques
- 2007 RFP to Advance Leak Pinpointing
- Several Test Plans developed for applying Aerial Leak Detection to Distribution
- Development/Testing of PerflouroCarbon Tracer Pinpointing (PFT) Technology
- NYSEARCH/PHMSA Development of Mercaptan Sensor/Smart Nose
- NYSEARCH Development/Testing of Low-Cost, Portable Methane Sensor

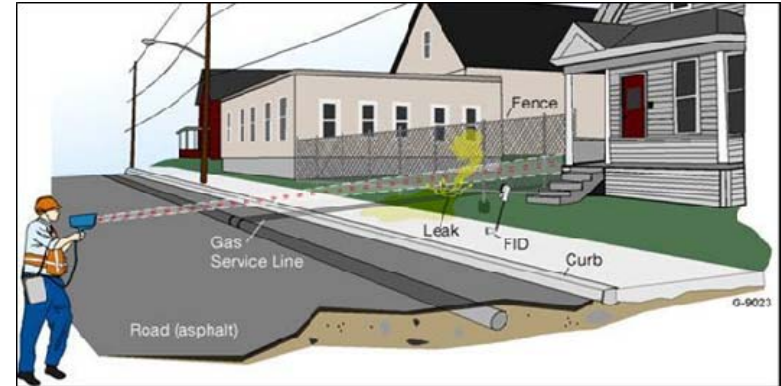
- Present/Future

- Evaluation of new high-speed, high accuracy systems such as Picarro
- Commercial Deployment of Smart Nose
- Additional Technology Searches being renewed related to Pinpointing and Advancing Leak Repair



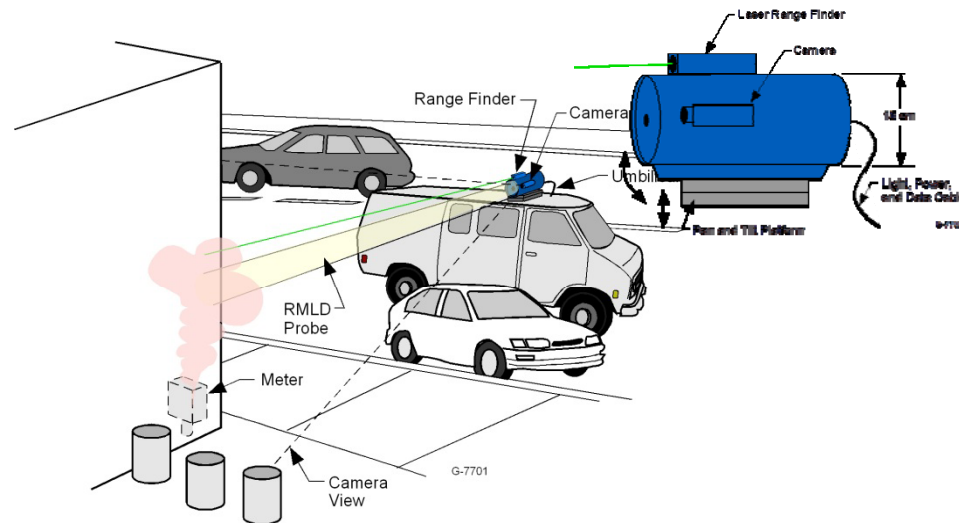
# NYSEARCH Ground-Based Leak Survey Goals

- Remote and Accurate Detection
  - Range up to 100 ft from leak
  - Sensitivity to 5 ppm- m
- Specific to Methane Gas
- Portable Tool (< 6 lbs)
- Fast response time – 0.1 sec
- Field Rugged
- Developed, tested and statistically validated through ‘double-blind test protocol’ RMLD (compared to FI etc)



# NYSEARCH Mobile-Based Leak Survey Goals

- RMLD-based instrument in mobile platform
- Focus on sidewalk and service locations



- NYSEARCH/GdF testing with Prototype
  - Identified issues - upgrade cost was more than NYSEARCH members were interested in supporting given added benefits and other activities

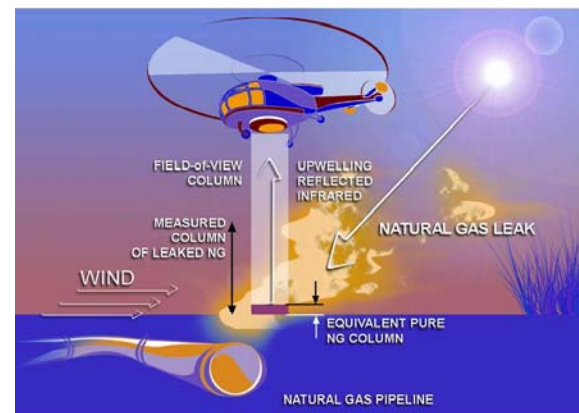
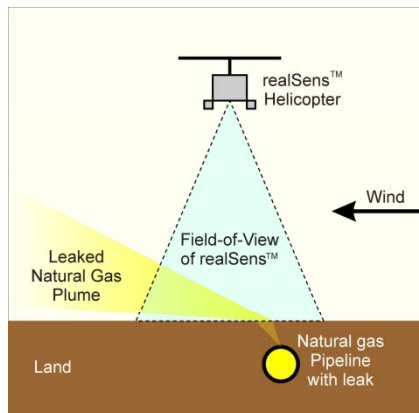
# Aerial Leak Detection Technologies Considered for Distribution Applications

- LaSen Alpis



- Synodon

RealSens™ IR Imaging



# NYSEARCH/PHMSA 'Smart Nose' for Sensing Mercaptans

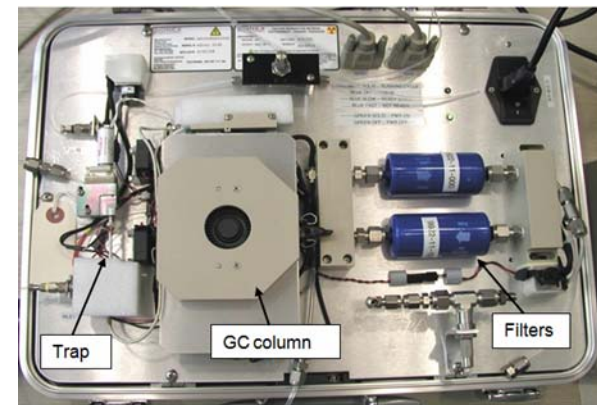
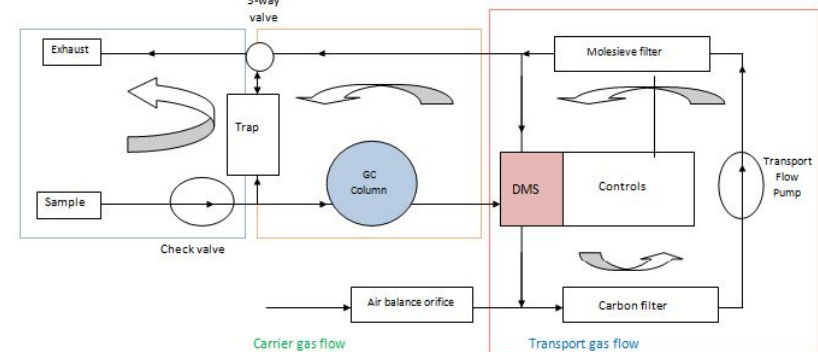
- Goals

- Measure mercaptans in natural gas at 1 – 5 ppm (1/10 of LEL reqt)
- Develop technology into portable tool for in-line measurement and ultimately handheld measurement
  - Provide an alternative to gas chromatograph instruments
- Use instrument to ensure that minimum levels of mercaptans are present and to aid in leak detection

- Status

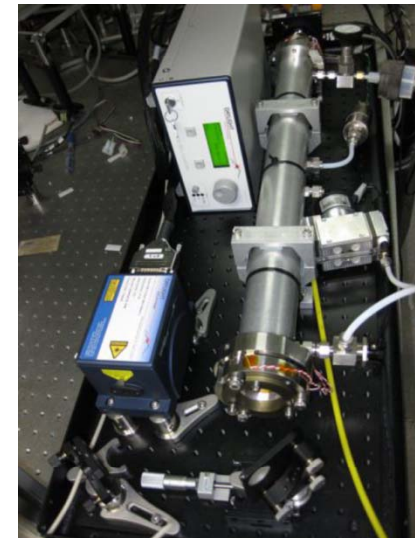
- Laboratory testing successful and completed
- Field testing of Alpha prototype underway
- Commercialization discussions being initiated

MERCAPTANS INSTRUMENT SCHEMATIC DIAGRAM



# Advanced Leak Pinpointing & PFT Project

- NYSEARCH RFP 2007 – Goals
  - Identify innovative technology
  - Select technology that makes leak pinpointing process independent of operator experience
  - Find instrument with sensitivity in range from 0.5% to 100% gas
  - Technology requirements include:
    - Field rugged and safe
    - User friendly & cost effective
    - Accurate
  - **RFP Action**
    - Several proposals evaluated; committee decided that no proposal fully met needs; no projects were funded
- Through NYSEARCH, NGrid & CHG & E fund PFT for Leak Pinpointing Project with BNL
  - Devt/Testing determine approach is good for air pressure testing prior to putting new lines into service





# Present/Future Work

- Evaluation of Systematic Implementation of New Technologies e.g. Picarro
- More defined application of NYSEARCH/ANI's Methane Sensor (low cost/lightweight sensor) – for use with field technician in residence, etc?
- Searches for non-industry solutions to advancing leak pinpointing and repair

