

INVESTIGATION OF OIL & GAS FACILITIES

CITY OF LONGMONT COLORADO

APRIL 17TH, 2018

Presented by:

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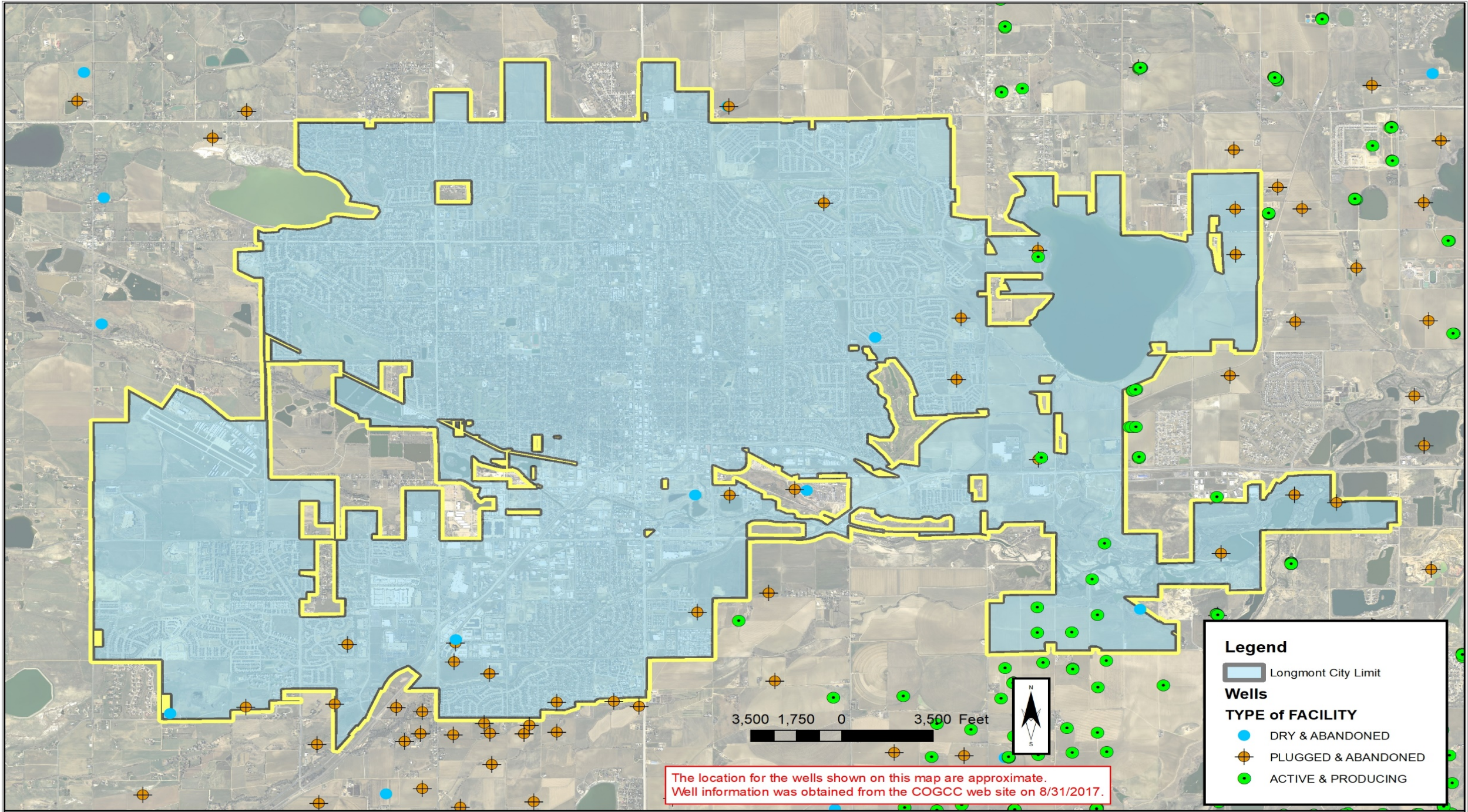


AGENDA

- History of Site Investigations
- Scope of Site Investigations
- Investigation Costs
- Investigation Results
- City of Longmont Available Information

INVESTIGATION OF OIL & GAS SITES IN LONGMONT

- 2012 City conducted historical records investigation into all P&A wells within city limits
 - P&A Research Summary Report issued in 2013
 - Report located on City website
- 2013 City conducted site investigations of active wells and installed water quality monitoring wells
- Site investigations now being conducted on all P&A wells
- City hired Terracon to conduct thorough investigation
- City partnering with local universities and researchers to develop new real-time monitoring tools



SCOPE OF OIL & GAS SITE INVESTIGATIONS

- Locating wellhead, flow lines, former location of production equipment, circulation pits, etc.
- 2 soil vapor points (permanent feature)
- 3 groundwater monitoring wells (permanent feature)
- 3 soil sample tests
- 2 soil vapor tests
- 3 groundwater sample tests

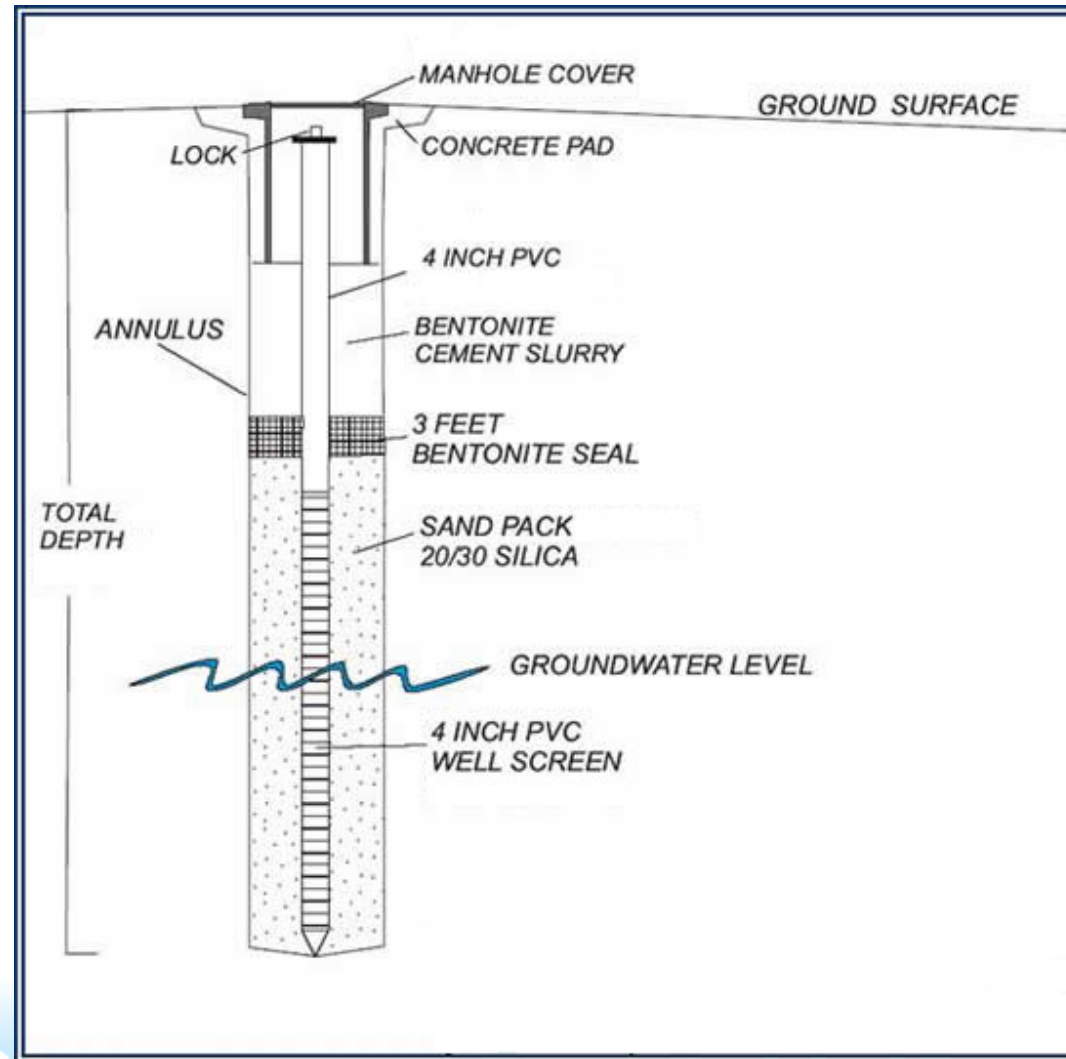
INVESTIGATION COSTS

- 9 Active Wells
- 18 Plugged and Abandoned
- 5 Dry and Abandoned
- 4 Tank Batteries
- 3 Pit Locations
- Average cost of \$16,000/site
- Total Expected Cost: ~ \$500k

CONTAMINANTS BEING TESTED FOR

- TPH (total petroleum hydrocarbons)
- VOCs (volatile organic compounds)
 - Benzene
 - Toluene
 - Ethylbenzene
 - Xylene
- Methane
- Chlorides
- Sulfates
- Many other constituents...

MONITORING WELL DIAGRAM



DRILLING RIG



SOIL BORINGS

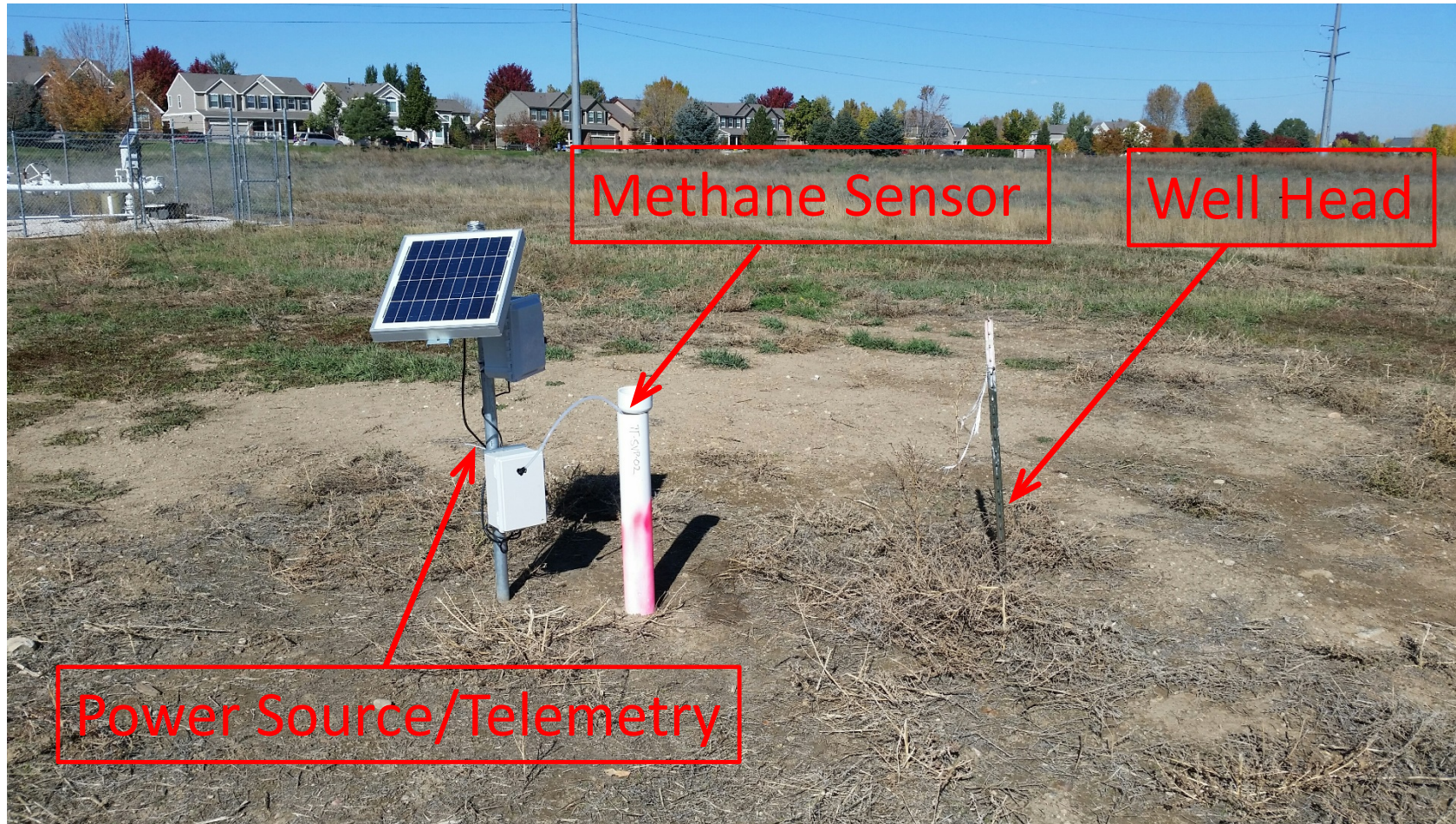
Contaminated Soil



MONITORING WELL



REAL TIME MONITORING



INVESTIGATION RESULTS TO DATE

Rider #1

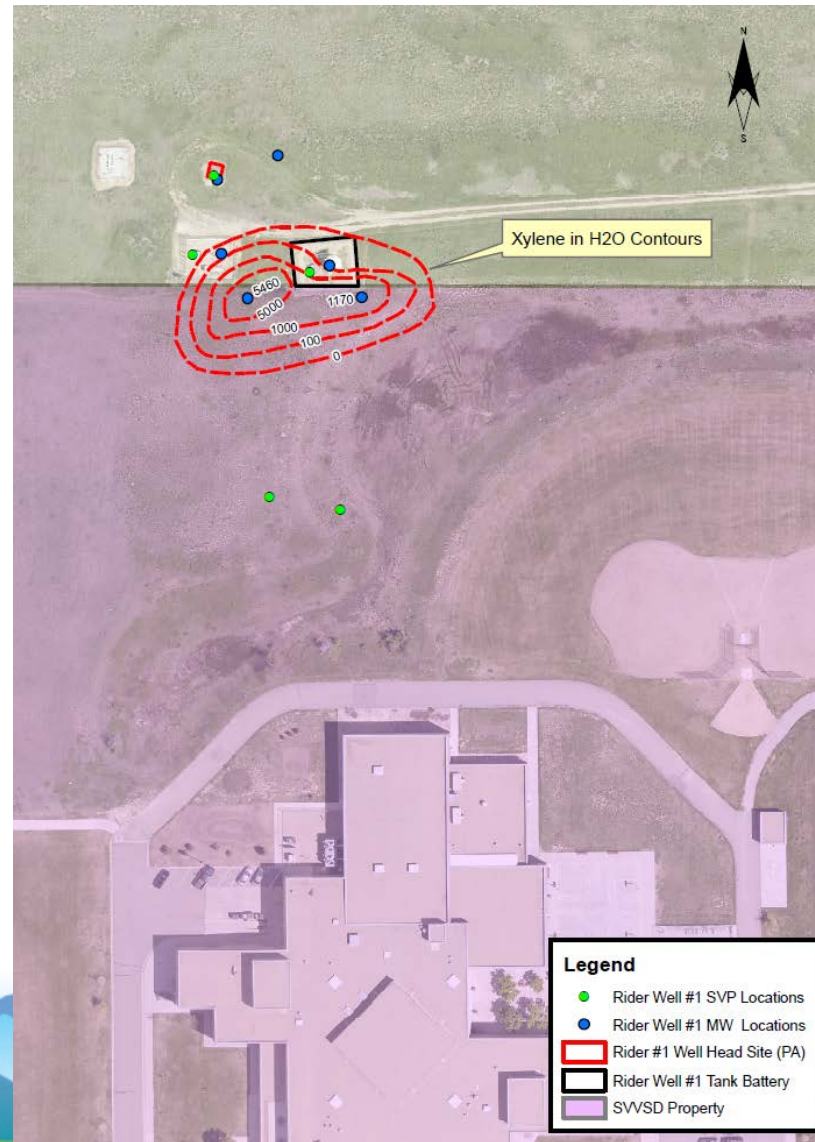
- Records investigation complete
- Site investigation complete
- Soil, groundwater, and soil gas at the site HAS BEEN impacted by a potential release...further investigation is required



INVESTIGATION RESULTS TO DATE

Rider #1

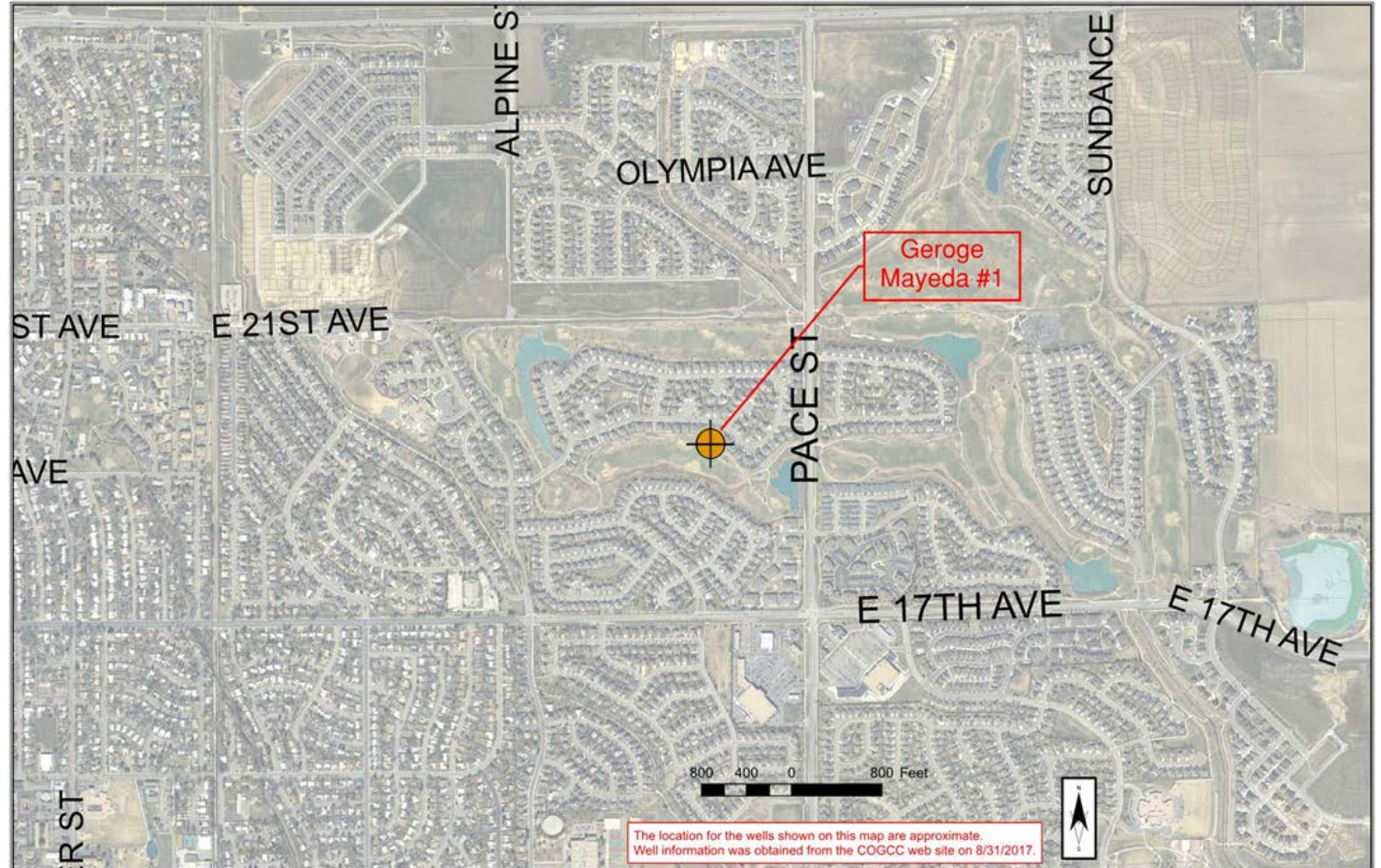
- Soil impacted by TPH, concentration of 1,490 mg/kg (500)
- Groundwater impacted by
 - Ethylbenzene 738 µg/L (700)
 - Naphthalene 140 µg/L (140)
 - Xylenes 5,460 µg/L (1,400-10,000)
- Soil vapor impacted by VOCs
 - Ethylbenzene 49.1 µg/m³ (37)
 - 2-Propanol (isopropyl alcohol) 62,800 µg/m³ (7,000)



INVESTIGATION RESULTS TO DATE

George Mayeda #1

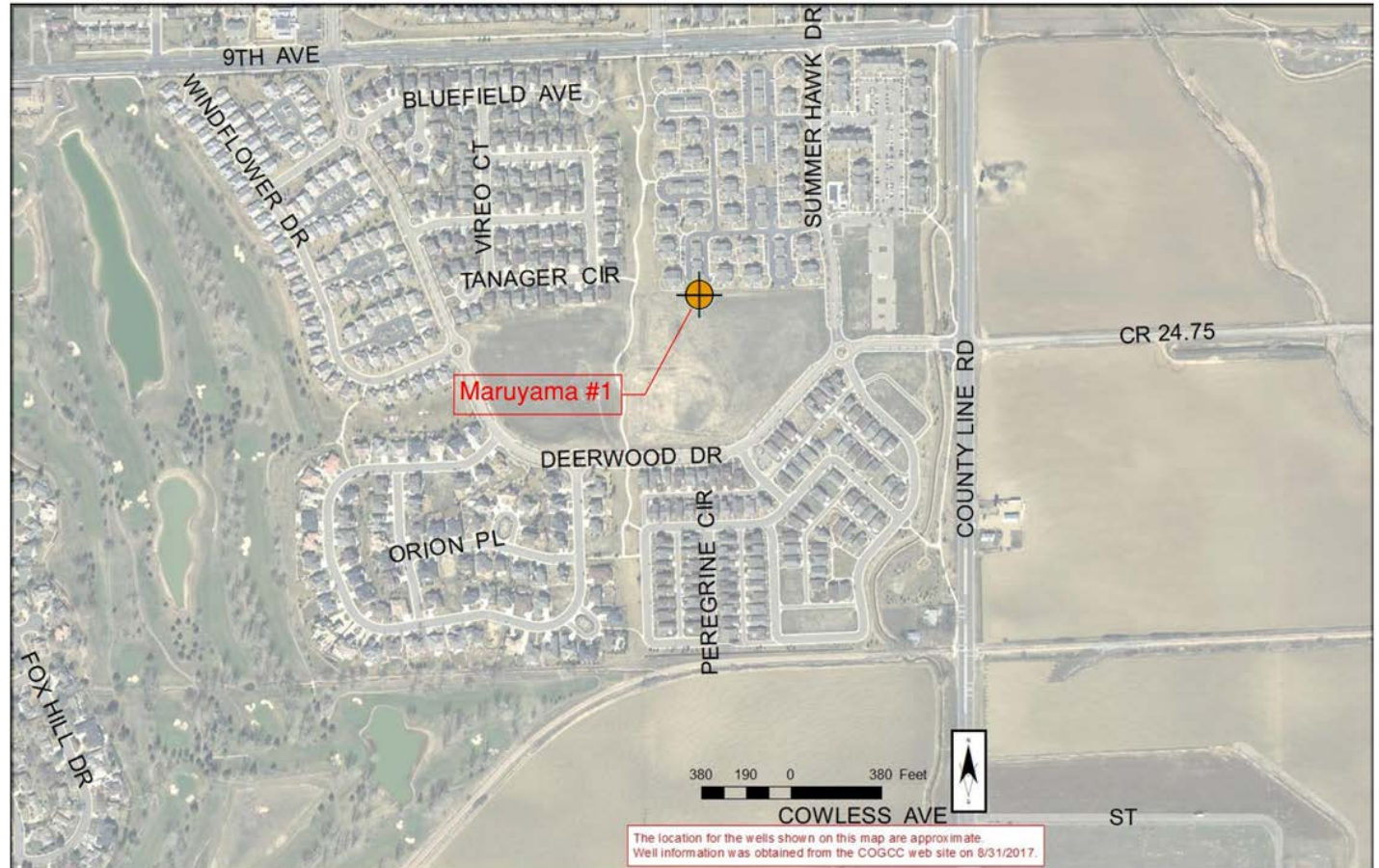
- Records investigation complete
- Site investigation complete
- Results are pending, further investigation is required
- Ground Penetrating Radar (GPR) used to locate any remnants of flow/gathering lines



INVESTIGATION RESULTS TO DATE

Maruyama #1

- Records investigation complete
- Site investigation complete
- Soil, groundwater, and soil gas DO NOT appear to have been impacted by potential constituents of concern



INVESTIGATION RESULTS TO DATE

Longmont #8-10k

- Well recently plugged & abandoned
- Records investigation complete
- Site investigation complete
- Soil, groundwater, and soil gas DO NOT appear to have been impacted by potential constituents of concern



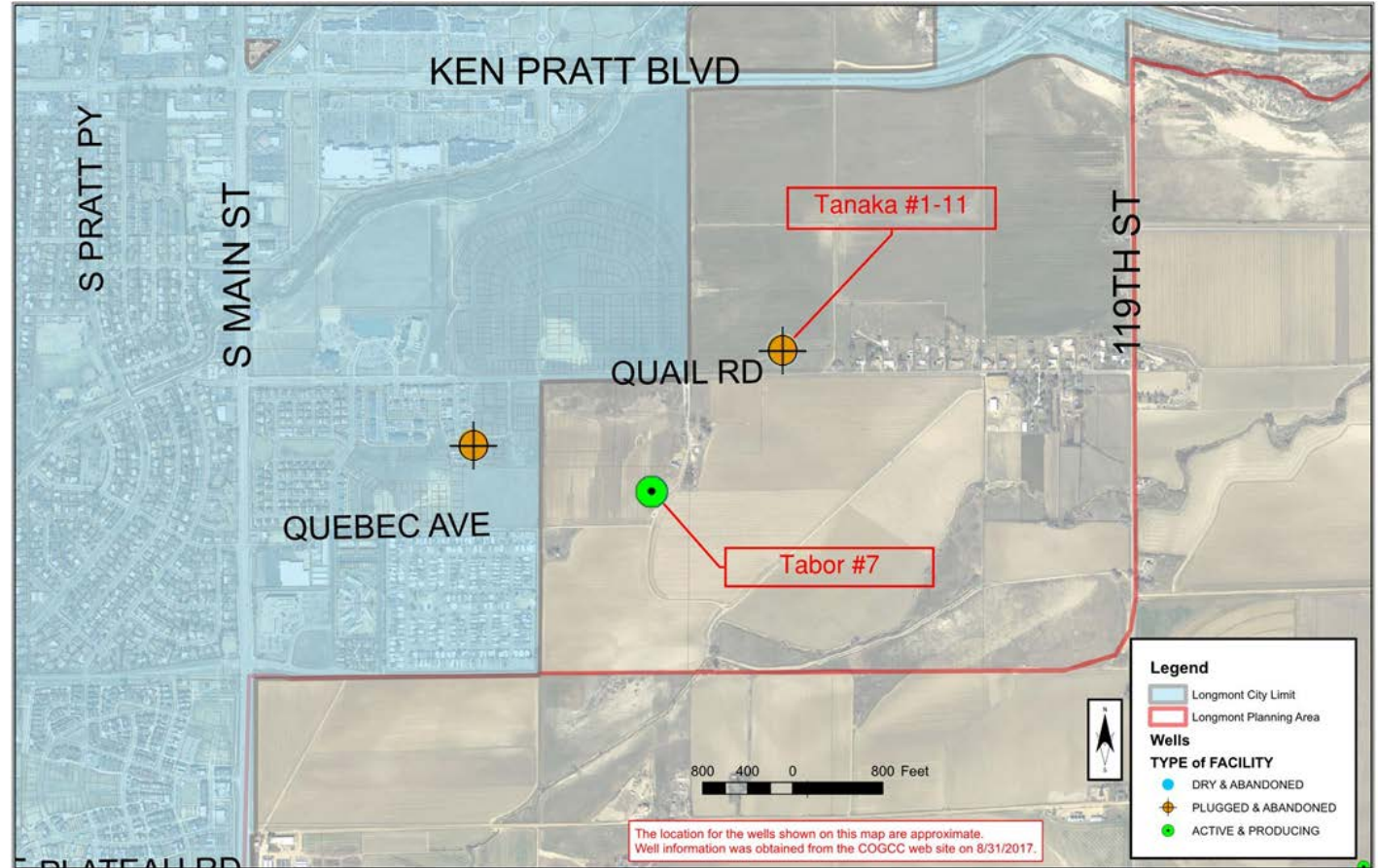
EXISTING WELLS ON LANDS CURRENTLY BEING ANNEXED

Tabor #7

- Active well
- Records investigation complete
- Site investigation complete
- Soil, groundwater, and soil gas DO NOT appear to have been impacted by potential constituents of concern

Tanaka #1-11

- Plugged & Abandoned
- Annexation recently approved by Council



CITY OF LONGMONT WEBSITE

<https://www.longmontcolorado.gov/departments/departments-n-z/public-information/oil-and-gas-information/oil-and-gas-regulations-in-longmont>

Abandoned Wells and Locations






There are currently 17 plugged and abandoned wells, five dry/drilled and abandoned wells, and 21 abandoned locations (never drilled) within the City limits. The City retained Terracon Consultants, Inc. to assess abandoned wells within the City - see map below (use the plus and minus symbols to zoom in and out of the map):

- [Longmont oil and gas wells map](#)
- [Terracon's report](#) addresses 14 plugged and abandoned wells and three dry/drilled and abandoned wells.

Oil and Gas Historical Reviews and Site Investigations

- [George Mayeda #1 OG Historical Review Final](#)
- [George Mayeda #1 OG Site Investigation Report Final](#)
- [Longmont 8-10K Historical Write Up Final](#)
- [Longmont 8-10K OG Site Investigation Report Final](#)
- [Maruyama #1 OG Site Investigation Report Final](#)
- [Maruyama #1 OG Historical Review Final](#)
- [Rider #1 OG Historical Review Final](#)
- [Rider #1 OG Site Investigation Report Final](#)
- [Tabor #7 OG Historical Review Final](#)
- [Tabor #7 OG Site Investigation Report Final](#)

Ground Water and Air Quality Monitoring Reports

-  [2017 Ground Water Qual Monitoring Report](#)
-  [2016 Ground Water Qual Monitoring Report](#)
-  [2015 Ground Water Qual Monitoring Report](#)
-  [2014 Ground Water Qual Monitoring Report](#)
-  [2013 First Q Monitoring Report](#)



QUESTIONS?

