



ENERGY INSTITUTE

Colorado State University



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METEC_{H4}

Methane Emissions Technology Evaluation Center

June 19, 2017 Update

METEC's First Months a Success. Since March, METEC has hosted several MONITOR teams for ad-hoc and Round 1 testing. In addition to testing, the site had numerous visitors. Clay and Mike have done a fantastic job working with teams to ensure a smooth and enjoyable testing experience, and providing informational and fun visits for guests. It has been fantastic to see all the different technologies in action.



Annual ARPA-E MONITOR Meeting Held in Fort Collins. On 23-24 May, 2017, ARPA-E held its annual MONITOR meeting in Fort Collins, CO. The event was attended by MONITOR Team representatives, as well as representatives from the Oil and Gas Industry and Regulatory Agencies. In addition to a rich meeting agenda, the meeting provided an opportunity for attendees to tour the METEC facility and network with a wide variety of people from the Energy sector.

Steve Hamburg from the Environmental Defense Fund gave the keynote address, "Synthesis of the EDF Methane

Studies." Each MONITOR team provided a brief update on the progress of their technology, and a panel of Industry representatives provided their perspective on drivers of adoption for new continuous monitoring technologies. A second panel including researchers and representatives of regulatory agencies also provided their perspective on estimating volatile organic compound (VOC) emissions using measurements of methane emissions as a proxy. It was an informative and valuable 2 days.

METEC Site Visits. The METEC site had the honor of several visitors since the last newsletter. Both of Colorado's US Senators expressed an interest in learning about METEC. On 10 April, Senator Michael Bennet, toured the field site and met with Dan Zimmerle and the METEC team to discuss the importance of methane emission detection and quantification. Cory Gardner visited Fort Collins on 17 April to tour the Powerhouse Energy Institute and learn about METEC.



The Department of Energy's Office of Fossil Energy visited METEC on 29 March. The group, led by Christopher Freitas, discussed their vision for the Office of Fossil Energy going forward with the METEC team. During the site tour discussions focused on capabilities of METEC and opportunities to use the site for additional research programs.

Most recently, Bill Bierbower and the ARPA-E General Counsel team visited the METEC site and CSU's Powerhouse on 17 May. It was a great opportunity to discuss the legal and administrative aspects of the site and its future uses and adaptation to life post MONITOR Team testing. It was also helpful to be able to explain the site to the General Counsel and provide clarity in some of the challenges the site might face.



Round 2 Development. The METEC team hosted a meeting with ARPA-E and the Industry Advisory Board in April to review the round 2 design. The current state of the site was reviewed, followed by discussions of the scope and capabilities of additional facilities planned to be completed this summer. The meeting helped develop design criteria for additional systems including the gas mixing systems, subsurface pipeline testbed, and mock mid-stream compressor station.

METEC also met with the representatives from the Colorado Department of Public Health and Environment to discuss considerations for different volatile organic compounds to be used in the gas mixing system. As a regulatory agency, the CDPHE was able to explain some of the issues they face when trying to enact new regulations and accept new measurement technologies for use in meeting those regulations. This sort of input allows METEC to consider what factors might be important to include in different testing scenarios.

Round 2 construction will be complete by September, with testing operations to start in October, 2017. Once complete, Round 2 will provide additional testing configurations to include larger wellpads as well as a mock midstream compression facility and a subsurface pipeline testbed, allowing for the simulation of wet gas and mid-stream operations.

Equipment Donations Still Needed. Industry Partners have been very generous in helping equip the Round 1 site. While we already have donations promised for the Round 2 build-out, METEC still needs some key pieces of equipment to make the site a representative and realistic place to perform emissions testing and technology verification. Currently, we are still looking for donations of:

- 3 vertical separators
- 1 berm stair set
- 3 meter and piping
- 1 inlet separator from a small gathering station
- 1 engine/compressor skid
- 2 pigging launch/receivers

If you know of equipment being retired or scrapped and you think it might be useful for the site, please do not hesitate to contact us!

METEC Key Staffing and Responsibilities.

Dan Zimmerle – Director and PI for METEC
Kristine Bennett – Project coordination & communication
Clay Bell – Overall design and construction oversight
Mike McGuire – Field site manager
Tim Vaughn – Measurement systems oversight

The METEC team is also supported by several undergraduate students helping to outfit the test site.

Site Scheduling. METEC is accepting requests to schedule testing at the site including MONITOR performers and non-MONITOR clients. MONITOR testing will currently take priority. Contact us for pricing, and available use times. Prior to accessing the site, all users must have a CDA and Site Access Agreement in place. Please contact us for further information on this as well.

Contact Us. The METEC team would love to hear from you, and we are happy to answer questions. We can best be reached via email until we can set up an interactive website to schedule your testing at the METEC field site.

Email: METEC@colostate.edu

Website:

<http://www.energy.colostate.edu/p/metec-program>