Department of Energy, National Energy and Technology Laboratory

Award number DE-FE0024357

Utica Shale Energy and Environmental Laboratory

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Project Period: 10/01/2014 – 09/30/2015

Quarterly Reporting Period: 01/01/2015-04/30/2015

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Date: 2015.04.24 15:51:39 -04'00'

2. Accomplishments

a.) Major goals/milestones. The major project milestones are summarized in Table 1. All project milestones are listed, but information is provided only for those scheduled for completion during the previous and current reporting period (01/01/2015-04/30/2015). While all proposed milestones are presently unchanged, unanticipated delays in the initiation of the proposed project have occurred that will impact planned and actual milestones and completion dates. (See Section 6. Changes/Problems.)

Milestone Title/Description	Planned Completion Date	Actual Completion Date	Verification Method	Comments (progress toward achieving milestone, explanation of deviation from plan, etc.)
Project management and planning	12/18/2014	TBD	Approval of final PMP	See Section 6. Changes/Problems
Develop site	1/16/2015	TBD	Approved site access plan	See Section 6. Changes/Problems
Socioeconomic & outreach	--	--	--	--
Community engagement	--	--	--	--
Regional impact analysis	--	--	--	--
Infrastructure impact analysis	--	--	--	--
Regional & site baseline	--	--	--	--
Surface environmental assessment	--	--	--	--
Groundwater analysis	--	--	--	--
Background seismic monitoring	--	--	--	--
3D seismic	--	--	--	--
Drilling vertical offset well	--	--	--	--
Environmental monitoring	--	--	--	--
Borehole geophysics	--	--	--	--
Core acquisition & assessment	--	--	--	--
Drill cuttings, mud, & fluids	--	--	--	--
Wellbore methane migration	--	--	--	--
Surface & subsurface data	--	--	--	--
Surface environmental monitoring	--	--	--	--
Microseismic measurements	--	--	--	--
Fluid & gas sampling	--	--	--	--
Cuttings acquisition	--	--	--	--
Drill fluid acquisition	--	--	--	--
Borehole geophysics	--	--	--	--
Design of optimal cement	--	--	--	--

Table 1. Milestone status report

b.) Major goals/milestone accomplishments. Major activities for this reporting period consisted of project management and planning. In addition, GIS data collection and compilation continued. (See Section 3. Products.)

c.) Opportunities for training and professional development. Nothing to Report.

d.) Dissemination of results to communities of interest. Nothing to Report.

e.) Plans to accomplish goals/milestones during next reporting period. (See Section 6. Changes/Problems.)

3. Products

a.) Publications, conferences papers, and presentations. Nothing to Report.

b.) Website(s) or other Internet site(s). Nothing to Report.

c.) Technologies or techniques. Nothing to Report.

d.) Inventions, patent applications, and/or licenses. Nothing to Report.

e.) Other products. An essential initial activity in any comprehensive environmental and geotechnical project is the collection and compilation of available data, especially GIS geospatial data and datasets. These are necessary for establishing an accurate and consistent format for the presentation of all data generated during completion of project tasks. Initiated during the previous reporting period, additional and updated shape and raster files, and tabulated GIS files were downloaded from U.S. Geological Survey (USGS) and Ohio Department of Natural Resources (ODNR) websites. Available data files include information on conventional and unconventional oil and gas oil activity, hydrography, topography and elevation, land ownership, socio-economics, and orthoimagery coverage. GIS data have been compiled via ESRI® ArcGIS-ArcMAP™ software to produce various topical maps for evaluating potential site-specific and regional baseline study areas adjacent to four lakes within the 8000 mi^2 Muskingum Watershed in east-central Ohio. (See Section 6. Changes/Problems.)

4. Participants & Other Collaborating Organizations

a.) Individuals who have worked on the project.

Name: Dr. Jeffrey Daniels
Project Role: Director
Nearest person month worked: 3
Contribution to project: Dr. Daniels has been involved in overall project management, planning, and administration.
Foreign collaboration: No

Name: Mr. Jeffrey Melaragno
Project Role: Project Manager
Nearest person month worked: 1
Contribution to project: Mr. Melaragno has been involved in overall project management, planning, and administration.
Foreign collaboration: No

Name: Dr. Gerald Allen
Project Role: Ohio State Operations Manager
Nearest person month worked: 3
Contribution to the project: Dr. Allen has been involved in project management, planning, and administration; and collection and compilation of GIS data for site-specific and regional study area delineation and evaluation.
Foreign collaboration: No

b.) Other organizations involved as partners. USEEL is presently leveraging our partnership with the Muskingum Watershed Conservancy District (MWCD) to locate site-specific and regional sampling areas within the 8000 mi^2 Muskingum Watershed. The MWCD owns over 54,000 acres within the watershed encompassing four lakes (Tappan, Clendening, Piedmont, and Seneca) and contiguous land areas.

1. Organization Name: Muskingum Watershed Conservancy District
2. Location of Organization: New Philadelphia, OH
3. Partners Contribution to the project: Presently, only access to properties, but it is anticipated that the MWCD will contribute to some or all of the following categories.
4. Financial support: TBD
5. In-kind support: TBD
6. Facilities: TBD
7. Collaborative research: TBD
8. Personnel exchanges: TBD
9. More detail on partner and contribution: TBD

In addition, because of project changes, the roles of proposed academic and industry partners are currently being reassessed. (See Section 6. Changes/Problems.)

c.) Involvement of collaborators or contacts. Nothing to Report.

5. Impact – Nothing to Report.

6. Changes/Problems

a.) Changes in approach and reasons for change. Changes in approach will occur as the result of the unanticipated delays in the initiation of the proposed project. (See Section 6b.)

b.) Actual or anticipated problems or delays and resolution. Initially, the USEEL was to be hosted at the 760 acre OSU-EARS site in Noble County Ohio. Subsequent to the award, the Kasich Administration's opposition to drilling on Ohio public lands excluded the EARS site as a location for the USEEL. We are confident that EARS site will eventually be viable, but in the meantime alternative sites are being pursued. While maintaining EARS as our base field lab, we are seeking cooperation from landowners and oil and gas operators to identify additional sites. In partnership with MWCD, we are currently evaluating potential site-specific and regional baseline and long-term monitoring locations on their properties in the vicinities of Seneca, Piedmont, Clendening, and Tappan lakes. Our overall project plan is to utilize EARS as the USEEL base and establish Piedmont Lake as a primary field site and Clendening Lake as a secondary site for baseline environmental measurements. Although there will be adjustments to proposed tasks and funding, we envision enhanced opportunities in the development of regional socioeconomic studies and community outreach, and site-specific and regional environmental studies. Minimal or no changes are anticipated in surface and subsurface data collection and analysis during drilling. NETL leadership is encouraging and strongly supportive of this effort.

c.) Changes that have significant impact on expenditures. Nothing to Report. (See Section 6b.)

d.) Significant changes in use or care of human subjects, vertebrate animals, and/or Biohazards. Nothing to Report.

e.) Change of primary performance site location from that originally proposed. (See Section 6b.)

7. Special Reporting Requirements – Nothing to Report.

8. Budgetary Information – The following financial report has been filed with FITS@NETL.