PMC-ND

(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: NREL **STATE:** CO

PROJECT TITLE : FRAPPE and DISCOVER-AQ Experiments – Monitoring Equipment at NREL Mesa Top Facility; NREL Tracking No. 14-012

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-14-012	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
A11 Technical advice and assistance to organizations	Technical advice and planning assistance to international, national, state, and local organizations.
B3.1 Site characterization and environmental monitoring	Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Rationale for determination:

The U.S. Department of Energy (DOE) proposes to provide property access and logistical support to two atmospheric air quality studies to be conducted by various federal and state agencies and organizations at the DOE National Renewable Energy Laboratory's (NREL's) South Table Mountain (STM) campus in Golden, Colorado.

PROPOSED ACTION

For years DOE has allowed the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD) to operate a long-term ozone monitoring station on DOE-property immediately west of the fence line of the NREL mesa top facilities. Given this monitoring location's unique position, it has exhibited some of the highest ozone concentrations in the Colorado Front Range airshed. The proposed two atmospheric air quality studies would seek to further investigate the air quality data at this location and correlate this data with that collected from sites throughout the airshed.

The CDPHE APCD in collaboration with the National Center for Atmospheric Research (NCAR), National Aeronautics and Space Administration (NASA), the U.S. Environmental Protection Agency (EPA) Region 8, the National Science

Foundation (NSF) the National Oceanic and Atmospheric Administration (NOAA), and the University of Maryland would conduct two experiments to better understand ozone and other air quality issues along the Colorado Front Range. NCAR's experiment, the Front Range Air Pollution and Photochemistry Experiment (FRAPPE), funded by the State of Colorado and CDPHE would utilize one NCAR-owned aircraft as well as a number of ground-based sites and mobile equipment. The second experiment, "Deriving Information on Surface Conditions from Column and Vertically Resolved Observations Relevant to Air Quality" (DISCOVER-AQ) would be run by NASA and would utilize several ground-based monitoring and sampling locations, as well as two NASA-owned aircraft. Both studies, in combination, would collect the necessary measurements for several key air pollution constituents including ozone (O3), carbon monoxide (CO), carbon dioxide (CO2), methane (CH4), nitrogen oxides (NOx), trace gases, and volatile organic compounds (VOCs). Measurements and samples collected at the ground-based sites would be correlated with measurements and samples collected from the dedicated aircraft to better understand the chemical and physical variability of atmospheric pollutants in the complicated flow structure that occurs from mountain induced circulation along the Front Range. The project would occur from approximately mid-June 2014 to mid-September 2014, including station set-up and breakdown periods, and would include approximately 15 flight days. DOE involvement would consist of project coordination, providing property access to DOE-owned property on the mesa top of South Table Mountain for monitoring equipment and support equipment, as well as providing temporary electrical service to support the experiment.

Equipment to be placed on DOE-owned property in support of these experiments would include up to 4 equipment trailers. Specifically, these trailers would include a 25' long trailer owned by the EPA, a 12' long LIDAR (Light Detection and Ranging) trailer owned by NASA, and a 30' long trailer owned by the University of Maryland. Air quality instrumentation would be placed both inside and on top of the trailers. Additional air monitoring equipment would be added to the rooftop of the existing CDPHE air monitoring station. In addition, a SODAR (Sound Detection and Ranging) owned by NOAA, a vertical profiler that uses sound waves, requiring a 25'x25' area would be placed in the vicinity of the trailers. Power needs for the trailers and profiler would be met by running a temporary connection from the NREL mesatop facilities electrical power infrastructure. The temporary power connection from NREL would be supplied through an overland conduit with no trenching or earth disturbance would be required. A port-a-potty would also be located on DOE-property during the duration of the experiment.

Other activities in support of these two air quality studies would occur off of DOE-property and without DOE or NREL involvement including:
1) A NASA turbo prop plane would fly transects throughout the North Front Range study area, including over the NREL mesatop facilities, collecting air quality data.
2) A second NASA turbo prop plane would fly a 5km spiral (either ascending or descending) directly over the ground-based monitoring stations, also including the NREL mesatop facilities, collecting similar air quality data.
3) The NCAR plane would also fly transects throughout the North Front Range area. This plane would fly between 1,000 to 20,000 feet above ground surface over their targets.
4) A sampling balloon would be used to obtain pollutant concentrations at different levels in the atmosphere. The measurements will focus on ozone, and will also include wind speed, wind direction, temperature relative humidity and pressure. The balloon would be located approximately 2,800 feet to the northwest of the NREL SRRL, to the west of the Colorado State Patrol training track gate on the west side of Quaker St. The balloon would be deployed to a maximum height of 1,500 feet above mesa top per the FAA license. The balloon would be deployed during daylight hours on a daily basis, weather permitting, between July 15 and August 15, 2014 and would be stored on the ground overnight.

The equipment would be put in place beginning the second week of June 2014. Monitoring would occur from July 13, 2014 to August 16, 2014. It is estimated that removal of equipment would be completed by mid-September 2014 at the latest. No night work would occur. Should weekend work be required, CDPHE staff would coordinate with NREL security. At the conclusion of the project all equipment would be removed from DOE-property except the existing CDPHE air monitoring station. The temporary electrical connection would be removed.

IMPACTS OF PROPOSED ACTION
The proposed project would not require any ground disturbance activities; therefore no stormwater quality or erosion impacts are anticipated. There are no floodplains, wetlands, or Waters of the United States in the vicinity of the proposed project area.

Some minor fugitive emissions of particulate matter and airborne pollutants would occur from the use of gasoline and diesel engine trucks to transport and set up the trailers, vertical profiler, and equipment. Once trailers and equipment are in place, no emissions of air pollutants are anticipated. The aircraft flights occurring throughout the two-week experiment would also result in air emissions, but would be periodic and minor compared to existing aircraft traffic in the Colorado Front Range. Temporary generators or other stationary sources of air pollutants would not be used as part of these experiments.

Per the 2010-2011 site-wide wildlife survey, no threatened, endangered, or candidate wildlife species were observed at STM, nor was habitat for such species identified. Similarly, the vegetation survey during the same time period found no rare plants or habitat that may support federally protected plant species in the area proposed for this project. A

migratory bird nesting survey would be conducted prior to project deployment on DOE property. If nests or eggs are found, the particular area would be cordoned off with a proper buffer until nestlings fledge. This would ensure that no migratory birds, nests or eggs are destroyed during the proposed project.

Archeological and cultural resources on STM site were assessed in DOE/EA-1440 and its two subsequent Supplemental Environmental Assessments (DOE/EA-1440-S-I and DOE/EA-1440-S-II), including Section 106 consultations with the Colorado State Historic Preservation Officer. The proposed project would not impact known cultural resources at the STM site.

The SODAR equipment, used to measure wind speed at various heights, releases sound waves into the atmosphere. While noise levels immediately in the vicinity of the equipment would be temporarily elevated above background, there are no sensitive receptors in the vicinity (e.g. houses, schools, apartments, etc.) and noise levels would be less than applicable regulatory standards. The intensity of the SODAR noise levels would dissipate quickly with distance from the unit due to the open topography of the mesa top.

No use of hazardous materials or generation of hazardous waste is anticipated. Minor amounts of regular trash and sanitary waste would be generated and would be properly disposed of by the project participants.

The project equipment to be staged on DOE-property would not be on the edge of the mesa and would not be visible from lower vantage points or neighborhoods in Pleasant View. Public interest may be generated as a result of the transect and spiral aircraft flight patterns that would occur over the NREL mesatop facilities and the deployment of the monitoring balloon from non-DOE property on the mesa. This impact would be mitigated by the early public information dissemination that has already begun by the project participants. A media day is planned at Jeffco Airport on July 15, 2014, to further inform the public of the experiment. In addition, NREL Public Affairs has been involved in the project planning and is prepared to provide information regarding the experiment if contacted by members of the public.

NEPA DETERMINATION
DOE has determined based upon the information above, there are no extraordinary circumstances presented by this proposed action. DOE has determined the proposed project is consistent with the actions contained in DOE categorical exclusions A9 "information gathering, analysis, and dissemination," A11 "technical advice and assistance to organizations," B3.1 "site characterization and environmental monitoring," and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

ND prepared by Robert Smith on 06/13/2014.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 6/17/2014
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.