

# DOE-ID NEPA CX DETERMINATION

## Idaho National Laboratory

**SECTION A. Project Title:** National Oceanic and Atmospheric Administration (NOAA) Birch Creek Canyon Wind Study

**SECTION B. Project Description:**

The National Oceanic and Atmospheric Administration (NOAA) Birch Creek Valley Wind Study would be conducted under the umbrella of the NOAA/Idaho National Laboratory (INL) Meteorological Research Partnership Memorandum of Agreement between NOAA and the Idaho Office of the U.S. Department of Energy (DOE-ID). The project would use a location near the northeast corner of the Test Area North (TAN) perimeter fence just north of the old TAN parking lot adjacent to the road to the Initial Engine Test (IET) facility and a remote site along Birch Creek near the point where Birch Creek crosses Idaho Highway 22. Field setup would occur as soon as the environmental checklist is complete (weather permitting) and last until autumn of 2013 when the equipment would be removed. The project would use equipment that was installed at two locations in Texas near wind turbine farms in support of the DOE-NOAA Wind Forecast Improvement Project. The use of re-purposed equipment would make this project inexpensive, with NOAA providing the labor for installation, maintenance, removal, and data analysis. A third site, not on the INL Site, would also be used in the study and would be instrumented with similar equipment. Thus, the study would be broad in scope.

The purpose of this research is to better understand how wind flows within the Birch Creek Valley interact with the flow in the Snake River Plain. Observations from the NOAA/INL Mesonet--particularly the Blue Dome, Specific Manufacturing Capability (SMC), and San Dunes towers--often show jets exiting the Birch Creek Valley and interacting with flows in the Snake River Plain at the north end of the INL Site. This study would help NOAA in three major areas, all of which have import to the INL Site. First, it would improve atmospheric dispersion calculations for the INL, particularly at the north end of the INL Site. Second, the data collected could be useful for a wind power resource inventory in the Birch Creek Valley. Third, this study would improve understanding of valley flows of this type (how they develop, why they persist, their depth, etc.).

The project would involve the siting of a trailer-mounted radar wind profiler and sodar at the TAN site, and a trailer-mounted solar panel with sodar and sonic anemometer at the Highway 22 site. The equipment proposed for the TAN site is mounted on a dual-axle trailer about 8'x20' in size and is easily towed by a pickup truck (see photo 1). The radar wind profiler measures wind speed and direction in 300 ft. increments up to 10,000 feet above ground level. The wind profiling radar operates at 915 MHz with a maximum output of 500 Watts. The antenna is directed vertically. NOAA has a radio license to operate this equipment and has an identical unit installed on the INL Site at the Grid 3 facility near the Idaho Nuclear Technology and Engineering Center (INTEC). The second piece of equipment that is attached to the trailer is a sodar. NOAA also has an identical sodar installed on the INL Site at the Grid 3 facility. The sodar uses sound pulses to measure wind speed and direction in 30 ft. increments up to 600 ft. above ground level. The pulses are audible and occur about every 10 seconds at a frequency of 4.5 kHz with a duration of 50 milliseconds and at about 100 decibels measured directly above the speaker array. The antenna of this device is oriented vertically and personnel servicing the equipment do not need any hearing protection. With the vertical orientation, it is unlikely that the sodar would be heard within the TAN fenced compound and it would not be heard indoors. Power requirements are small and of the order of a regular meteorological tower, which is 2-3 amps. The trailer would be parked along the side of the road to IET about 25 yards from an air monitor belonging to Battelle Energy Alliance, LLC's Environmental Support & Services (photo 2) in a previously disturbed area with vehicle access available year round. Placing the trailer and foot traffic to access the equipment would constitute the major disturbance of the area.



Photo 1. Equipment proposed for use near TAN.

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The Hwy. 22 site is on an established INL trail that runs along the west side of the original Birch Creek drainage and is used very infrequently to access the power line road that parallels Hwy. 22 (Photo 3). The location of the site is 43 deg. 55.9199' N, 112 deg 46.40106' W. The trailer-mounted solar panel with sodar and sonic anemometer would be installed just off the trail on a site that has been previously disturbed by badgers. There are a number of existing but abandoned badger holes where the vegetation would not be damaged by installation of the equipment. The entire footprint would be approximately 15'x15'. The sodar operates in the same manner as that described above. Access to the site for occasional equipment inspection and maintenance would be via vehicle until the road becomes impassable. Access when the road is snowed-in would be by foot. The site might be located in a flood zone, but the Birch Creek drainage is currently dry and the site is sufficiently high enough above the drainage that flooding is unlikely.



Photo 2. Proposed location of equipment at TAN (the van in the picture represents the approximate location of equipment).

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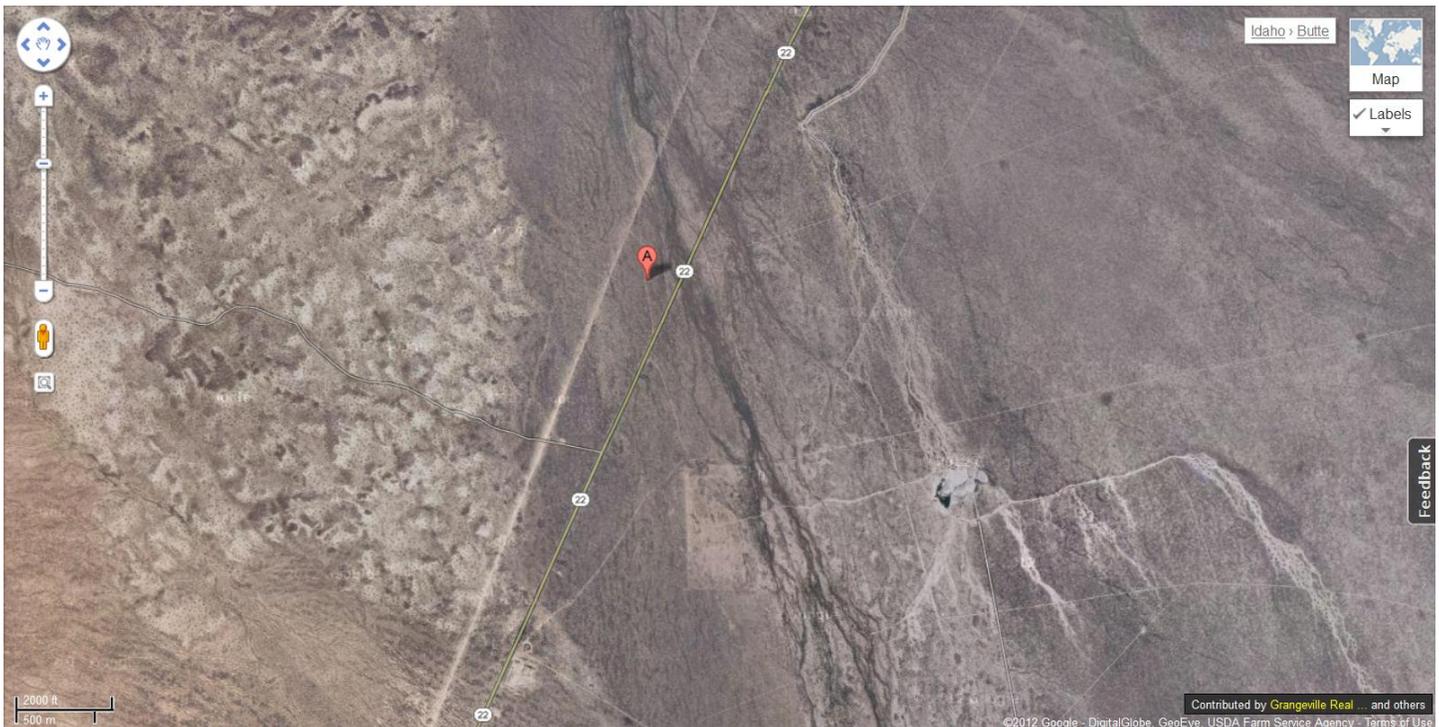


Photo 3. Proposed location of equipment at the Highway 22 site.

### SECTION C. Environmental Aspects or Potential Sources of Impact:

**Air Emissions** - Minor amounts of fugitive dust would be generated while traveling to and from the study locations on existing gravel roads and two track trails.

#### **Disturbing Cultural or Biological Resources** -

**Cultural Resources** - Prior to locating equipment, cultural resource surveys and/or clearance in writing from the Cultural Resource Management (CRM) office would be completed to ensure that potential cultural resources would not be impacted. Project activities would be organized to minimize impacts to any culturally sensitive materials identified during these surveys. Brenda Pace (526-0916) of the INL CRM office should be contacted to arrange for a cultural resource review. Impacts to any identified resources would be minimized using existing roadways, placing equipment in previously disturbed areas whenever possible, and avoidance of ground disturbance in any sensitive areas identified. If objects of potential archaeological or historical significance (e.g., arrowheads, flints, bones, etc.) are encountered during project activities, personnel would discontinue disturbance in the area and contact the CRM office [Brenda Pace (526-0916)].

**Biological Resources** - The SODAR to be placed along Highway 22 is within the Sagebrush Steppe Ecosystem Reserve and would be within the Sage Grouse Conservation Area (SGCA). The location within the SGCA would be subject to time of day and some seasonal restrictions, which could affect monitoring activities depending on the final language within the Candidate Conservation Agreement. In addition, the SODAR trailer would be within a grazing boundary and equipment may be affected by livestock.

There is the potential for this work to impact desert vegetation and for project personnel to interact with various animal species, two of which (pygmy rabbit and sage grouse) may soon be listed as threatened or endangered species. The potential for impact would be minimized by the short duration, small footprint, infrequent access to equipment, and the commitment of the project to use existing roadways and previously disturbed areas whenever possible. Within two weeks of the initiation of any activities that might disturb soil or vegetation, an ecological evaluation including a nesting bird survey would be completed. Jackie Hafra (525-9358) at Gonzales-Stoller Surveillance should be contacted two weeks prior to beginning work to arrange for biological resource review.

**Generating and Managing Waste** - Project activities are expected to generate only minor amounts of uncontaminated industrial waste. The small amount of waste that may be generated could include uncontaminated garbage such as plastic water bottles or other miscellaneous waste. All waste would be disposed of in appropriate recycling containers at INL facilities or in the INL Landfill Complex through Waste Generator Services (WGS). Project personnel would incorporate waste minimization measures by using reusable materials where practical.

**Using, Reusing and Conserving Natural Resources** - Fuel would be used in vehicles while traveling to and from the study locations. Project personnel would carpool and/or use alternative fuel vehicles when appropriate. Project personnel would incorporate waste minimization measures by using reusable materials and recycling where practical.

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**SECTION D. Determine the Recommended Level of Environmental Review (or Documentation) and Reference(s):** Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of DOE or Executive Orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

**References:** 10 CFR 1021, Appendix B to Subpart D item B3.1, "Site characterization and environmental monitoring"

**Justification:** The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D categorical exclusion B3.1, "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... Specific activities include, but are not limited to: (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources);

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act)  Yes  No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 12/17/2012