

DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

SECTION A. Project Title: Unmanned Aerial System Support To Idaho State University

SECTION B. Project Description:

The purpose of the proposed action is for Idaho National Laboratory (INL) to aid Idaho State University (ISU) in hyperspectral data acquisition to determine the feasibility of using precision agriculture in the detection of pale cyst nematodes (PCN) in potato fields. The current method for observing PCN is to walk the fields. The proposed action would use unmanned aerial systems (UAS) to detect signs of PCN using special cameras capable of detecting wavelengths not visible to the human eye. The project would provide ISU access to a UAS and camera that is otherwise outside of their ability to acquire, and INL is able to showcase its UAS capabilities and aid an Idaho university in advancing its program deliverables. INL has been conducting research and development (R&D) using UAS for several years and has the experience and ability to support ISU in this research effort. Work will take place at off-INL locations in south-eastern Idaho potato fields.

This activity would include the operation of rotary wing aircraft (RWA) under remote control (R/C), supervised (pilot in the loop, trim adjustments, stick mode, or jog mode), and autonomous control (auto pilot controlled flight). The aerial platforms could include radio controlled, remotely piloted, and autonomous helicopters.

This would take place April - November of 2015 and cost about \$30,000-\$50,000.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions - Air Emissions may be emitted by fossil-fuel powered UAS. These are emissions from a mobile source and are exempt under Idaho Air regulations.

Generating and Managing Waste - UAS will be prepared and serviced at Battelle Energy Alliance, LLC (BEA) facilities located in Idaho Falls. Spent batteries may be recharged or recycled via Waste Generator Services (WGS). Repairs may include solvent-wipes or other solid waste. Pollution prevention/waste minimization would be implemented where economically practicable to reduce the volume and/or toxicity of waste generated. All waste generated would be transferred to WGS for appropriate disposition.

Using, Reusing, or Conserving Natural Resources - All material would be reused or recycled where economically practicable. All applicable waste would be diverted from disposal in the landfill when possible. Project personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible. The project would practice sustainable acquisition, as appropriate and practicable, by procuring construction materials that are energy efficient, water efficient, are bio-based in content, environmentally preferable, non-ozone depleting, have recycled content, and are non-toxic or less-toxic alternatives (see <https://sftool.gov/green-products/0?agency=7>).

SECTION D. Determine the Recommended Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 Code of Federal Regulation (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 Comprehensive Environmental Response, Compensation, and Liability Act (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 that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: National Environmental Policy Act (NEPA) Implementing Procedures, Final Rule, 10 CFR 1021, Appendix B to Subpart D, Categorical Exclusion B3.2 "Aviation Activities."

Justification: The proposed activities are consistent with CX B3.2 "Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations."

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: 3/16/2015