

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



RECIPIENT: Energy DELTA Lab

STATE: VA

PROJECT TITLE: Energy DELTA Lab - Project Oasis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
FY23 Congressionally Directed Spending	DE-EE0010779	GFO-0010779-002	GO10779

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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) is proposing to administer Congressionally Directed Spending to Energy DELTA Lab to test the feasibility of a water circulation system that provides data center cooling via water from abandoned underground mines located in Virginia.

A previous NEPA Determination (ND; GFO-0010779-001; A9, A11, B3.1; 05/02/2024) was completed for Tasks 1, 2, 3, and 8. Tasks 4, 5, 6, and 7 were not previously reviewed because the field test sites were unknown at the time of writing the original ND. Since that time, three different field sites have been identified for the Task 4-7 activities. This ND applies to Task 4-7 activities and the three newly chosen sites.

Proposed Task 4-7 activities would include preparing points of access, surface infrastructure installation, monitoring component installation, and drill pumping, injection, and observation holes. Once the holes would be drilled, water pump and circulation tests would take place. Lastly, Data Center Ridge visits and follow-up would be performed.

Award activities including planning, coordination, research, and outreach would be carried out by Energy DELTA Lab (Bristol, VA), with engineering design assistance provided by Marshall, Miller, & Associates (Blacksburg, VA). Penn Virginia Operating Company (Laurel, VA) would carry out well pad creation, well drilling, pumping, and piping water for injection at three sites within their Bullitt Complex. The Virginia Department of Energy would provide engineering support, inspection and monitoring, security, and financial accounting and reporting.

The three proposed drilling locations are situated on the existing Bullitt Complex, a former unreclaimed coal mining site. Activities at these three sites would include pumping water up from the mine, injecting water back into the mine, and monitoring. Pilot holes would be drilled with approximately a 6-inch (in.) diameter bit typically used for this type of drilling. Full diameter pumping and injection wells would be approximately 18 in. in diameter and would be drilled into existing pilot holes. Pilot holes would be drilled within a 50-foot (ft.) radius to minimize ground disturbance. The maximum depth for the holes would be roughly 550 feet, as the holes would be drilled to intersect existing mineshafts. Additional booster pumps may be needed on the surface dependent on the system design. Surface piping of approximately 5,000 ft. would be installed along the existing road. Drill pads of up to 150x150 ft would be installed.

The U.S. Fish and Wildlife Service's Information for Planning and Consultation database (IPaC) shows ten threatened or endangered species, including the Gray Bat, Indiana Bat, Northern Long-eared bat (NLEB), Tricolored Bat, Appalachian Monkeyface, Finerayed Pigtoe, Shiny Pigtoe, Slabside Pearlymussel, and Monarch Butterfly. There are 11 migratory bird species known to frequent the area. There is no critical habitat located in the area. Additionally, as the drilling sites are on unreclaimed former mines, the area is heavily disturbed and not thought to be prime habitat for endangered or threatened species.

Suitable summer habitat for the Indiana bat and NLEB would be affected by clearing for array construction and shading effects; however, clearing would be limited to the following months: October 14-April 1 for the Indiana bats and Tricolored Bats, and August 15-May 14 for NLEB when the bats would not occupy forest habitats. Therefore, the proposed development of the project site may affect, but is unlikely to adversely affect any federally listed bat species.

Based on the proposed award activities, stream impacts would be avoided or minimized. Each hole would be drilled as far away as possible from the stream areas. Drill cuttings and associated water would be controlled and mitigated by a sump area that may include temporary evacuation and/or temporary surface structures. Temporary sediment control measures including, but not limited to, silt fences, straw bales, berms, ditches, water bars, and or sumps may be utilized to control runoff. Any water from the drilling with sediment/cuttings would be directed into the temporary sediment control structures and channeled away from nearby streams. Drill sites would be graded and revegetated upon completion of drilling activity. If the streams would be affected, coordination with the US Fish and Wildlife Service (USFWS) and the US Army Corps of Engineers (USACE) would be required, as well as reaching out to the DOE Program Point of Contact.

Individuals working on this project could be exposed to physical hazards associated with well drilling. Existing corporate health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, and monitoring. Drilling into old mines would have the possibility to encounter gases, so appropriate gas monitoring would be conducted, and gas venting would occur if needed. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified. Drilling of wells would be done with compressed air, biodegradable drill bits, and rod lubrication. A standard cleanup plan exists in place of leakage, with absorbent equipment on hand. Any soil adversely impacted would be excavated and disposed of off-site at a suitable facility. Local sediment and drainage control permits would be pursued as needed.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

If the Project would have no impacts to wetland or waters and would not trigger federal or state permitting, then formal coordination with the USFWS and the USACE is not required. However, if the plan development evolves, coordination with the USFWS for federally listed species and coordination with state agencies for state listed species may be required, as well as reaching out to the DOE Program Point of Contact.

Any tree clearing would be limited to the following months: October 14-April 1 for the Indiana Bats and Tricolored Bats, and August 15-May 14 for NLEB when the bats would not occupy forest habitats.

Notes:

Geothermal Technologies Office (GTO)
This NEPA determination requires a tailored NEPA provision.
Review completed by Alex Colling on 7/18/2024.

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, 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 facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 8/1/2024
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager