

U. S. DEPARTMENT OF ENERGY
OFFICE OF SCIENCE -- CHICAGO OFFICE

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

To be completed by "Applicant," i.e., organization receiving funds and/or implementing Federal Actions as defined by 40 CFR § 1508.18. For assistance, refer to "Instructions for Preparing SC-CH F-560, Environmental Evaluation Notification Form."

Solicitation/Award No. (if applicable): DE-FOA-0001019 / DE-SC0009709

Organization Name: GroundMetrics, Inc.

Title of Proposed Project/Research: Borehole-Deployed Electric Field Sources and Sensors for Permanent Monitoring of CO2 Sequestration..

Total DOE Funding/Total Project Funding: \$1,093,585

I. Project Description (use explanation page if additional space is required):

A. Proposed Project/Action (if applicable, delineate Federally funded/Non-Federally funded portions)

GroundMetrics proposes to conduct two electromagnetic surveys at the Big Sky Carbon Sequestration Partnership's Kevin Dome location, one before and one after planned CO2 injection. The CO2 injection is a separate, independent activity not being conducted under this project. The purpose of this project is to demonstrate that electromagnetic measurements can be used to image the propagation of a CO2 plume underground.

The project surveys involve the laying of equipment on top of the ground and the injection of a small amount of electric current into the ground by shallow insertion of commercial copper grounding stakes commonly used in construction hooked up to a commercial geophysical transmitter.

B. Would the project proceed without Federal funding?

Yes No

If "yes," use explanation page.

II. Description of Affected Environment:

The survey will be set up on privately owned, cultivated alfalfa fields near the carbon injection site.

III. Preliminary Questions:

- A. Is the DOE-funded work routinely administrative or entirely advisory or a "paper study?" Yes No

If "Yes", ensure that the description in Section I reflects this and go directly to Section V.

- B. Is there any potential whatsoever for:

Provide an explanation for each "Yes" response.

- | | Yes | No |
|--|-------------------------------------|-------------------------------------|
| 1. Work to be performed outdoors? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Major modification of a building interior? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Threat of violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Siting, construction or major expansion of waste treatment, storage, or disposal facilities? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Disturbance to hazardous substances, pollutants, or contaminants preexisting in the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. The presence of any environmentally-sensitive resources? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Potential for high consequence impacts to human health or the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. The work being connected to another existing/proposed activity that could potentially create a significant impact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. Nearby past, present, and/or reasonably foreseeable future actions such that collectively significant impacts could result? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Scientific or public controversy over whether impacts could be significant? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If "No" to ALL Section III.B. questions, go directly to Section V.

IV. Potential Environmental Effects:

Provide an explanation for each "Yes" response.

- A. Sensitive Resources: Could the proposed action potentially result in changes and/or disturbances to any of the following resources?

- | | Yes | No |
|--|--------------------------|-------------------------------------|
| 1. Threatened/Endangered Species and/or Critical Habitats | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Other Protected Species (e.g., Burros, Migratory Birds) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Cultural or Historic Resources | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Important Farmland | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Non-Attainment Areas for Ambient Air Quality Standards | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Class I Air Quality Control Region | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Special Sources of Groundwater (e.g. Sole Source Aquifer) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Navigable Air Space | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Coastal Zones | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. Areas with Special National Designation (e.g. National Forests, Parks, Trails) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Floodplains and/or Wetlands | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated Items or activities?

	Yes	No
13. Natural Resource Damage Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14. Invasive Species or Exotic Organisms	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15. Noxious Weeds	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. Clearing or Excavation (indicate if greater than one acre)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. Dredge or Fill (under Clean Water Act, Section 404, greater than one acre)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18. Noise (In excess of regulations)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19. Asbestos Removal	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Polychlorinated biphenyls (PCBs)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21. Import, Manufacture, or Processing of Toxic Substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22. Chemical Storage/Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23. Pesticide Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24. Hazardous, Toxic, or Criteria Pollutant Air Emissions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25. Liquid Effluents	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Spill Prevention/Surface Water Protection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27. Underground Injection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28. Hazardous Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29. Underground Storage Tanks	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30. Radioactive or Radioactive Mixed Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31. Radiation Exposure	<input type="checkbox"/>	<input checked="" type="checkbox"/>
32. Nanoscale Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>
33. Genetically Engineered Microorganisms/Plants or Synthetic Biology?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
34. Ozone Depleting Substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
35. Greenhouse Gas Generation/Sustainability	<input type="checkbox"/>	<input checked="" type="checkbox"/>
36. Off-Road Vehicles	<input checked="" type="checkbox"/>	<input type="checkbox"/>
37. Biosafety Level 3-4 Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>

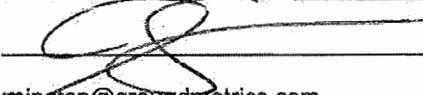
C. Other Relevant Information: Would the proposed action involve the following?

	Yes	No
38. Existing, Modified, or New Federal/State Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39. Disproportionate Nearby Presence of Minority and/or Low Income Populations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
40. Action/Involvement of Another Federal Agency (e.g. license/permit, funding, approval)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
41. Action of a State Agency in a State with NEPA-type law	<input type="checkbox"/>	<input checked="" type="checkbox"/>
42. Public Utilities/Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>
43. Depletion of a Non-Renewable Resource	<input type="checkbox"/>	<input checked="" type="checkbox"/>
44. Other Pertinent Information Which Could Impact Human Health or the Environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>

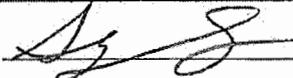
V. Applicant Certification that to the best of their knowledge all information provided on this form is accurate:

Does this disclosure contain classified, confidential, or other exempt information that DOE would not be obligated to disclose pursuant to the Freedom of Information Act? Yes No

A. Organization Official (Name and Title): Jeffrey Symington VP of Operations

Signature:  Date: 9/11/14
 e-mail: jsymington@groundmetrics.com Phone: 858.381.4143

B. Optional Secondary Approval (Name and Title): Gayle Guy, Proposal Manager

Signature:  Date: 9/11/14
 e-mail: gguy@groundmetrics.com Phone: 858.381.4147

Remainder to be completed by DOE

VI. DOE Concurrence/Recommendation/Determination:

A. DOE Project Director/Program Manager or Contract/Grant Management Specialist:

	Yes	No
Has the Applicant completed the Form correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does an existing Generic Categorical Exclusion apply?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If yes, indicate: _____

Name and Title: William Fernald, Sr. Program Mgr., Office of Carbon Capture & Storage Research

Signature: William Fernald Date: September 22, 2014

B. DOE NEPA Team Review:

	Yes	No
Is the class of action identified in the DOE NEPA Regulations (Appendices A-D to Subpart D (10 CFR § 1021))?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If yes, specify the class(es) of action: B3.1, B3.6

Name and Title: _____

Signature: _____ Date: _____

C. DOE Counsel (if requested):

Name and Title: _____

Signature: _____ Date: _____

D. DOE NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR § 1021.400.

- Action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for Categorical Exclusion referenced above.
- Action requires approval by Head of the Field Organization. Recommend preparation of an Environmental Assessment.
- Action requires approval by Head of the Field Organization or a Secretarial Officer. Recommend preparation of an Environmental Impact Statement.

Comments/limitations if any:

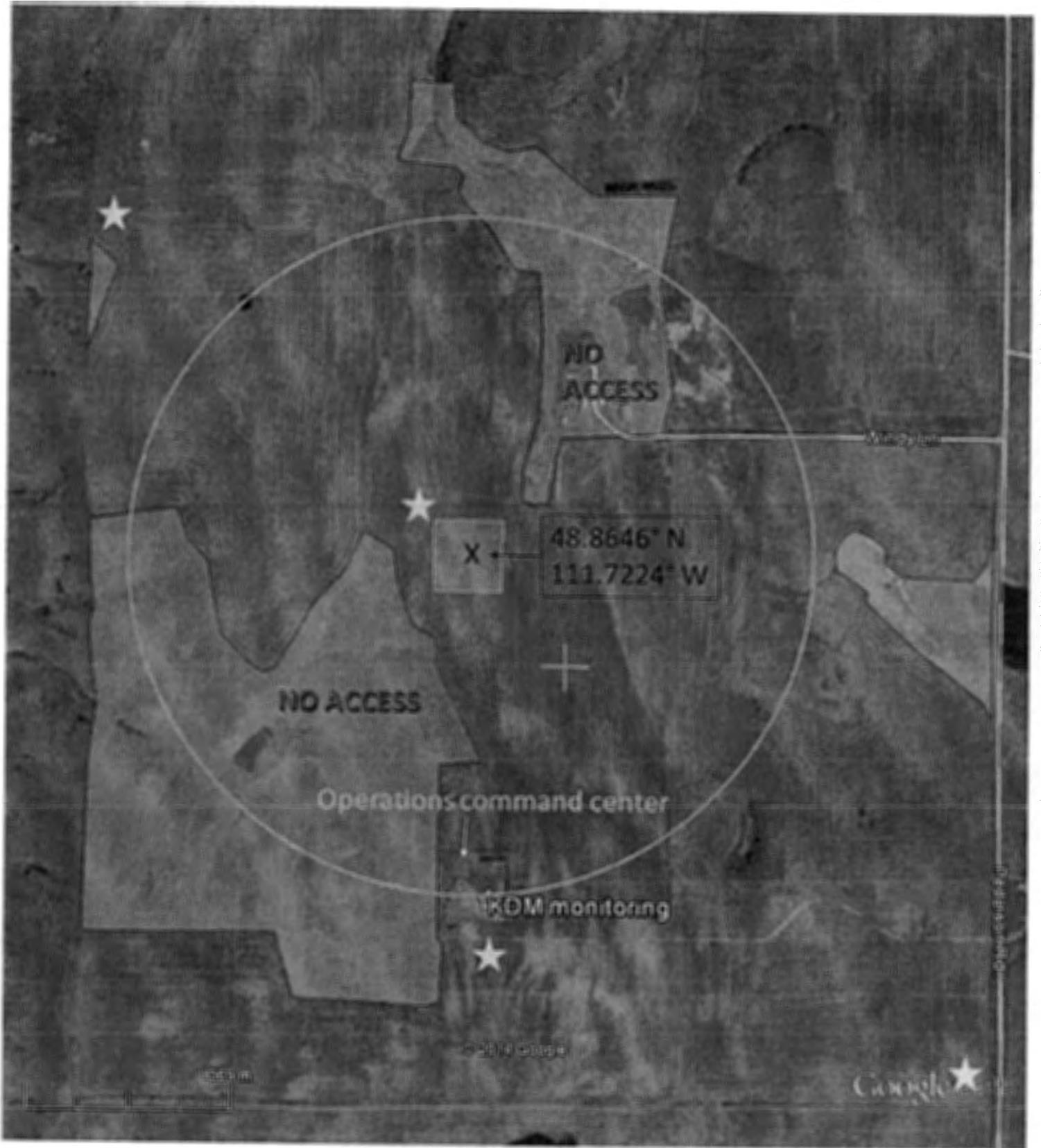
NEPA Compliance Officer:

Name: Peter R. Siebach

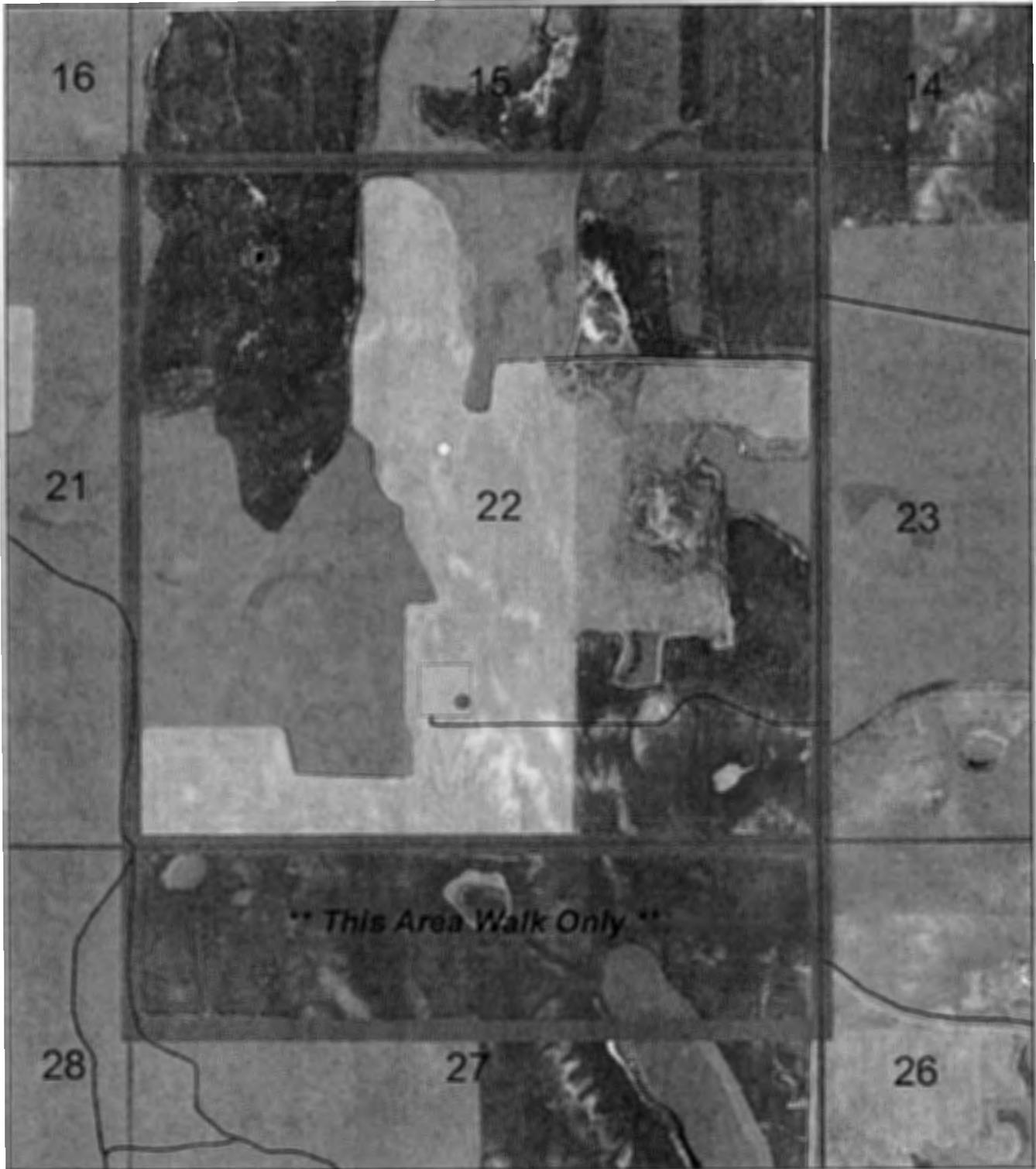
Signature: Peter R. Siebach Date: 9/23/2014

Optional Additional Narrative: (add additional detail to description to Sections I and II or explanations to responses in Sections III and IV.

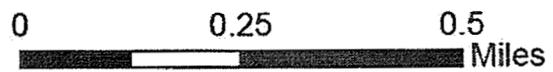
IIIB8. The first survey we will conduct could take place at any time; its purpose is to image the area for a "before" electromagnetic snapshot. The second survey can only be conducted after CO2 injection and thus is scientifically connected to this injection process.



GroundMetrics Field Work



- | | |
|---------------------------|-------------|
| Wells | — Roads |
| ● Monitoring Well | ▭ Sections |
| ○ Proposed Injection Site | ▨ Well Pad |
| ▭ Work Area | ▩ No Access |



Siebach, Peter

From: Fernald, William <WILLIAM.FERNALD@HQ.DOE.GOV>
Sent: Monday, September 22, 2014 11:17 AM
To: Siebach, Peter
Cc: Neff, Michael; Aljoe, William (NETL); Ackiewicz, Mark (HQ); Rodosta, Traci (NETL); Mahajan, Kanwal (NETL)
Subject: GroundMetrics' Environmental Evaluation Notification Form
Attachments: NT42587_FONSI EA.pdf; NT42587_Executed PA 10-03-13.pdf; NEPA Questionnaire_GroundMetrics_2.pdf

Peter Siebach
Team Leader
Environmental Protection
U.S. DOE Office of Science - Integrated Support Center - Chicago Office

Hello Peter,

Attached is an SBIR Phase II Renewal recipient's (GroundMetrics, award no. DE-SC0009709) NEPA questionnaire. I have completed the first two questions on page 4 in Section VI.A, signed and dated it. My "Yes" response to question VI.A needs to be qualified. Under Section III.B, and Section IV., the instructions require an explanation for each "Yes" response. However, GroundMetrics has checked "Yes" for items III.B.1, III.B.8, and IV.B.36, but did not provide explanations as required. I am providing the following explanations on behalf of GroundMetrics.

For Item III.B. 1. : "The work will be performed outdoors as described in Section I. A. and Section II., of this form."

For Item III. B. 8.: "The work will be performed in connection with an existing DOE activity, the Big Sky Regional Carbon Sequestration Partnership – Phase III: Kevin Dome Carbon Storage Project (DE-FC26-05NT42587) for which a Final EA and FONSI (DOE/EA-1886) has been received by the project performer, Montana State University (MSU). The work performed under the proposed project will be a relatively insignificant addition to the other activities described under the EA and FONSI, and will abide by all the provisions of the EA and FONSI, including adherence to the Programmatic Agreement between DOE and MSU for the protection of cultural resources in the project area. This will ensure that the proposed work will not have any of the Potential Environmental Effects described in Section IV. of this form. Copies of the EA/FONSI and the Programmatic Agreement are included with this form for reference purposes."

For Item IV.B.36: "Small off-road vehicles will be used to emplace and remove the equipment and copper grounding stakes described in Section I.A. of this form. Travel of these off-road vehicles will be limited strictly to existing landowner 2-track roads and previously cultivated areas to avoid any potential disturbance to cultural resources."

I have checked "No" for the second question under Item VI.A. Again, I refer you to the EA/FONSI and Programmatic Agreement that is attached to this response.

Thank you,

William Fernald
Senior Program Manager
Office of Carbon Capture and Storage Research (FE-223)