

Technical Reviewers' Rating Summary

Proposal Number Application Title Submitted By
 Request For Total Project Costs

Section A. Scoring

Statement	Weighting Factor	G-52-02A	G-52-02B	G-52-02C	Average Weighted Score
1. Objectives	9	2	3	3	18
2. Achievability	7	2	2	1	7
3. Methodology	8	3	4	1	16
4. Contribution	8	2	2	3	16
5. Awareness / Background	5	2	2	4	10
6. Project Management	3	1	4	1	6
7. Equipment / Facilities	2	1	3	1	2
8. Value / Industry - Budget	4	1	2	1	4
9. Financial Match - Budget	4	2	3	1	8
Average Weighted Score		99	137	99	111
Total: 50		250 possible points			

OVERALL RECOMMENDATION

FUND

FUNDING TO BE CONSIDERED

DO NOT FUND

X

X

X

Section B. Ratings and Comments

1. The objectives or goals of the proposed project with respect to clarity and consistency with North Dakota Industrial Commission/Oil and Gas Research Council goals are:

The proposal was not clear as the authors(s) jumped from some science, then on to history and legal briefs and accusations then back to some science. The goal of the Council is to further the responsible development of oil and gas and to educate the public. The proposal has the potential to educate the public but personal opinion should be omitted and more time spent on how their objective(s) will be accomplished.

- Reviewer: G-52-02A

- Rating: 2

No comment

- Reviewer: G-52-02B

- Rating: 3

There objectives were mostly clear.

- Reviewer: G-52-02C

- Rating: 3

2. With the approach suggested and time and budget available, the objectives are:

The use of gypsum to remediate brine impacted soil is not a new concept to North Dakota. The proposed remediation has been employed in North Dakota starting in the early 70's with mixed success. As put forth in the proposal, proper site characterization is key to success but so is picking the correct treatment for site conditions. Treatment with gypsum amendment is not always the correct treatment. The author(s) should consider other proven technologies available. Consider a review of historic OGRP funded studies for new treatment options and site characterization methods used in North Dakota.

- Reviewer: G-52-02A

- Rating: 2

There is a very long time table for the project with many parts.

- Reviewer: G-52-02B

- Rating: 2

Based on the proposal, the authors were not clear on how they were going to achieve Objective 3. I also could not tell if they have them expertise to achieve Objective 3 (they never described the methods and how they were going to complete this objective).

- Reviewer: G-52-02C

- Rating: 1

3. The quality of the methodology displayed in the proposal is:

The use of electromagnetic induction, areal surveillance, and soil chemistry for site characterization are commonly employed by environmental professionals. The proposal lacks some key constituents/tracers unique to oil and gas produced water (i.e. boron and bromide). Elevated concentrations of these compounds are not ubiquitous in natural undisturbed soils.

- Reviewer: G-52-02A

- Rating: 3

The proposal has great detail and explains the future plans of the project beyond the initial funding.

- Reviewer: G-52-02B

- Rating: 4

They never described the methodology to achieve objective 3.

- Reviewer: G-52-02C

- Rating: 1

4. The scientific and/or technical contribution of the proposed work to specifically address North Dakota Industrial Commission/Oil and Gas Research Council goals will likely be:

The scientific contribution of this proposal, as written, is small. It has the potential to be very significant if it is successful at quantifying oil and gas impact to surface and groundwater in 16 oil producing counties. Consider employing the contaminant index (i.e., chloride concentration/specific conductivity). This index was successfully used by the USFWS and MBMG - Environmental Contaminants Program during the MT- Impacts of Oil Exploration and Production to the Northeast Montana Wetland Management District. I have included the link to the full report below. I am not aware of a study such as this being conducted in North Dakota. There is significant value in such a study.

https://www.fws.gov/montanafieldoffice/Environmental_Contaminants/oil_impacts_NE_MT_WMD_Final%20Report.pdf

- Reviewer: G-52-02A

- Rating: 2

I gave a lower contribution rating because there have been studies in the past that have been close to the same as this project that have already proven that step 3 (remediation part) works.

- Reviewer: G-52-02B

- Rating: 2

Some parts of the proposal actually would provide a very signature contribution, while other parts (objective 3) not sure based on the poor description of the methods and what they were going to actually do. There is no doubt we need to keep looking for better remediation techniques, but I am not sure this project will achieve this kind of outcome.

- Reviewer: G-52-02C

- Rating: 3

5. The background of the principal investigator and the awareness of current research activity and published literature as evidenced by literature referenced and its interpretation and by the reference to unpublished research related to the proposal is:

The proposal contained limited reference to published or unpublished literature on site characterization or remediation options including the use of gypsum as a soil amendment for saline-sodic soils. The principal investigators Dr. Kerry Sublette and Ken Carlson are both highly qualified individuals on brine characterization and remediation. Unfortunately, the proposal as written doesn't fully explain how their knowledge will be utilized to maximize this effort.

- Reviewer: G-52-02A

- Rating: 2

This goes along with how I answered question 4 and that there have been state studies that were not mentioned in the proposal that did the same type of remediation research.

- Reviewer: G-52-02B

- Rating: 2

I think the team is very strong in their perspective fields, however, I don't know who is going to lead and actually conduct the work. I can't tell how the budget will be spent and who will actually complete the tasks.

- Reviewer: G-52-02C

- Rating: 4

6. The project management plan, including a well-defined milestone chart, schedule, financial plan, and plan for communications among the investigators and subcontractors, if any, is:

The proposal lacks to put forth milestones nor what success looks like.

- Reviewer: G-52-02A

- Rating: 1

It is very detailed.

- Reviewer: G-52-02B

- Rating: 4

None of these components of a project management plan were clear identified - or at least in a fashion I could interpret.

- Reviewer: G-52-02C

- Rating: 1

7. The proposed purchase of equipment and the facilities available is:

There isn't any equipment to be purchased in this proposal. There is little if any justification for a \$4,000,000.00 spend for the preferred remediation option. It is unclear if the local landowners (farmers) will be donating their time and equipment for cost matching.

- Reviewer: G-52-02A

- Rating: 1

The landowner rental concerns me as it is not broke out for that that consists of and its a big part of the cost of the project. Is it land rent (damages payment) or rent for equipment and time?

- Reviewer: G-52-02B

- Rating: 3

They authors never proposed purchasing equipment - or at least was never categorized as equipment purchase.

- Reviewer: G-52-02C

- Rating: 1

8. The proposed budget "value"¹ relative to the outlined work and the commitment from other sources is of:

The author(s) states that the NDIC is responsible for the cost as it failed to police industry.

- Reviewer: G-52-02A

- Rating: 1

No comment

- Reviewer: G-52-02B

- Rating: 2

No comment

- Reviewer: G-52-02C

- Rating: 1

9. The "financial commitment"² from other sources in terms of "match funding" have been identified:

Match funding was unclear.

- Reviewer: G-52-02A

- Rating: 2

No comment

- Reviewer: G-52-02B

- Rating: 3

I couldn't find a list of matching source - at least dollars matched or in-kind match.

- Reviewer: G-52-02C

- Rating: 1

1 "value" – The value of the projected work and technical outcome for the budgeted amount of the project, based on your estimate of what the work might cost in research settings with which you are familiar. A commitment of support from industry partners equates to a higher value.

2 "financial commitment" from other sources – A minimum of 50% of the total project must come from other sources to meet the program guidelines. Support less than 50% from Industrial Commission sources should be evaluated as favorable to the application; industry partnerships equates to increased favorability.

General Comments

The proposed quantification of impacts from current and legacy oil production in 16 oil producing counties in Western North Dakota could contribute significant knowledge to North Dakota. The use of new technologies to properly characterize and treat these identified impacts is equally significant. The engagement of local landowners, government, and environmental professionals would go a long way toward increasing knowledge on this subject. However, this proposal, as written, fails to communicate how this will be achieved and fails to justify the large capital expense of funding this project.

- Reviewer: G-52-02A

There could be some value to some portions of the project but the cost seems high to what other similar projects have been done for especially since this is to be a test.

- Reviewer: G-52-02B

See letter submitted to Brent Brannan.

- Reviewer: G-52-02C