Enhanced Oil Recovery and Advanced Completion Desing for Tight Carbonate Reservoirs in Western North Dakota

Submitted by:

Cobra Oil & Gas Corporation

Principal Investigator: Kyle Gardner

- **Total Funding Request - $5,000,000**
- **Total Project Costs - $10,000,000**
- **Project Duration: 21 Months**

Project Description

- Cobra Oil & Gas Corporation (Cobra) is seeking funding from the North Dakota Industrial Commission (NDIC) Oil and Gas Research Program (OGRP) for a research project to evaluate enhanced oil recovery (EOR) and advanced completion methods to increase oil production from tight carbonate reservoirs such as the lower Interlake Formation of the Stoneview Field in western North Dakota. The goal of the project is to identify and implement methods to increase the recovery factor of tight carbonate reservoirs through reservoir characterization and numerical simulation of different completion, stimulation, and EOR scenarios. The Stoneview-Stonewall Unit (SSU), with existing vertical and horizontal wells, provides an opportunity for field validation of modeled EOR, completion, and stimulation strategies that can be replicated in other tight reservoirs across North Dakota, including the Bakken petroleum system (Bakken).
- The expected results will be field-validated operational and completion strategies for optimizing oil production for the lower Interlake Formation case study. Although the work will focus on the project field operated by Cobra, the learnings from this project will establish baseline operational EOR and completion strategies for oil production from the many other tight reservoirs throughout the Williston Basin, including the Bakken.

TECHNICAL REVIEWERS' RATING SUMMARY					
Statement	**Weighting Factor**	**TR G-62-H1**	**TR G-62-H2**	**TR G-62-H3**	**Average Weighted Score**
Objectives	**9**	3	4	4	27
Achievability	**7**	3	3	4	21
Methodology	**8**	2	4	5	24
Contribution	**8**	3	4	3	24
Awareness/ Background	**5**	3	3	5	15
Project Management	**3**	3	4	4	9
Equipment / Facilities	**2**	3	3	3	6
Value/Industry-Budget	**4**	3	3	4	12
Financial Match – Budget	**4**	3	4	4	12
Average Weighted Score		**134**	**182**	**203**	**173**
Maximum Weighted Score				250 possible points	

Technical Reviewer Totals

- G-62-H1

Average Weighted Score: **134 out of 250**

DO NOT FUND

- G-62-H2

Average Weighted Score: **182 out of 250**

FUNDING TO BE CONSIDERED

- G-62-H3

Average Weighted Score: **203 out of 250**

FUND

Technical Reviewer Comments

Reviewer G-62-H1

This proposal is well-structured but targets a niche reservoir type. The integration of lab, modeling, and field testing is commendable. While not transformative basin-wide, it fills a critical knowledge gap and offers scalable insights.

Recommendation: DO NOT FUND

Technical Reviewer Comments

Reviewer G-62-H2

The applicant has the information and EERC experience to greatly increase the probability of success with this project. The applicant should provide more information about why injectivity of this project is expected to by significantly better that the previous projects, what lessons were learned from previous projects, and how that increases the probability of success.

Recommendation: FUNDING TO BE CONSIDERED

Technical Reviewer Comments

Reviewer G-62-H3

My view is that this is a very sound project that incorporates a high level of technical work prior to testing lab and model results in the field. This could have a meaningful impact across similar conventional reservoirs in North Dakota and extending the life of these type of conventional reservoirs should be pursued. They are an existing asset with a high degree of potential that could be extracted with successful outcomes of projects such as this one. The only flaw from the document was not outlining the field testing portion in more detail and establishing a base case of what is known today. There could have been more detail about the potential wells that would test (x) or (y), downhole equipment needed, what would alter that plan, etc.

Recommendation: FUND

Director's Recommendation:

- **Fund in the amount of $4,000,000**