

“Williston Basin Advanced Core Analysis and Well Log Consortium”

Submitted by: University of North Dakota Petroleum Engineering Department

Participants: UND Petroleum Engineering Department, the Harold Hamm School of Geology and Geological Engineering, NDGS, UND Alumni Foundation, Hunt Oil Company, Statoil, and Murex Petroleum Corporation. Collaborators will include the University of Bergen and the Petroleum Research School of Norway.

Request for \$1,250,000; Total Project Costs \$2,500,000

Duration: 5 Years

PROJECT DESCRIPTION

- The primary goal of the project is to improve the understanding of the petrophysical properties of oil bearing formation in the Williston Basin using advanced analysis methods for core and drill cuttings. UND will work with industry and the NDGS Core Library to identify key cores/cuttings within the Williston Basin for a detailed petrophysical analysis. Industry directed projects will be conducted that utilize the data collected and will involve a combination of faculty, students, and staff. Each project will result in a detailed report that is only available to project sponsors. It is anticipated that these projects will serve as cornerstone projects for the thesis documents of graduate students as well as be potential undergraduate senior design projects.

TECHNICAL REVIEWERS' RATING SUMMARY

		Technical Reviewer				
Rating	Weighting	<u>G-31-04A</u>	<u>G-31-04B</u>	<u>G-31-04C</u>	<u>Average Weighed Score</u>	
<u>Category</u>	<u>Factor</u>					
Objectives	9	4	4	3	27	
Achievability	7	4	4	2	21	
Methodology	8	4	4	3	24	
Contribution	8	4	3	3	24	
Awareness / Background	5	2	3	2	10	
Project Management	3	5	3	3	9	
Equipment / Facilities	2	5	3	4	8	
Value / Industry- Budget	4	4	3	4	12	
Financial Match – Budget	4	4	4	2	12	
<i>Average Weighted Score</i>		195	178	140	171	
FUND		X	X			
FUNDING TO BE CONSIDERED				X		

TECHNICAL REVIEWER TOTALS

- G-31-04A

Average Weighted Score: 195 out of 250

FUND

- G-31-04B

Average Weighted Score: 178 out of 250

FUND

- G-31-04C

Average Weighted Score: 140 out of 250

FUNDING TO BE CONSIDERED

Reviewer G-031-04A Comments

- The principle investigators do not currently have an established record of research with regard to the Bakken Sources System. Nevertheless, significant advances often only occur when fresh ideas are brought to bear

- **Recommendation: Fund**

Reviewer G-031-04B Comments

- I believe the project has merit. I would like to see results a little quicker than 5 years and I would hope some intermediate progress reports would be generated from time to time. You might consider seeing if select operators in the basin would be willing to run a wireline spectral gamma ray in a vertical pilot hole to provide more data points for the project.
- **Recommendation: Fund**

Reviewer G-031-04C Comments

- From a geologic perspective, the data will be significant depending on the number, distribution, and appropriate frequency of sampling, “all areas of the basin” is rather vague. From an exploitation perspective, proper technique specific sampling has the potential to be very significant for engineering hydraulic fracturing procedures. From an exploration perspective, the data has the potential to be significant for some small and medium size companies but most of them do not have the mineral lease holdings or the computer analysis resources to utilize it. The larger companies with established lease positions might be able to use some of it to high grade drilling locations, but most of them will acquire their own data for their localized areas as needed if they do not already have it. From an education perspective, one must ask how many companies now have research laboratories doing this type of analysis? How many are currently in, or likely to be created and established in North Dakota? Much of this type and that of the geologists will be done back at their home offices and research labs.
- **Recommendation: Funding to be Considered**

DIRECTOR'S RECOMMENDATIONS

The technical reviewer's scores and recommendations were conclusive and I believe this project has merit, however further consideration must be given to the Oil and Gas Research Program total budget allocation and directives passed by the 2013 Legislature. The intent to increase the OGRP budget from \$4 million to \$10 million was based upon addressing the need for value added natural gas capture projects and capturing natural gas to reduce flaring in remote areas. Once we prioritize the industry's needs in correlation to the OGRP and the legislative directives, the remaining funds can be allocated accordingly.

Recommendation: The proposal did not discuss plans to circulate the research results to the public. If funding is prioritized for this type of research by the Council and Commission the applicant is encouraged to re-submit the application outlining specific areas of research on individual projects and to make the research results available to the public. Therefore, my recommendation is Do Not Fund.