

## TECHNICAL REVIEWER'S RATING SUMMARY

**G015-E**

### Purpose-Fit Portable Multi-Phase Production Measurement System

Ward Williston Oil Company

Principal Investigator: James W. Cron

Request for \$98,000; Total Project Costs \$196,000

<b>Rating Category</b>	<b>Weighting Factor</b>	<b>Technical Reviewer <u>15E-01</u> Rating</b>	<b>Average Weighted Score</b>
Objective	9	3	27.0
Availability	9	3	27.0
Methodology	7	5	35.0
Contribution	7	4	28.0
Awareness	5	4	20.0
Background	5	4	20.0
Project Management	2	3	6.0
Equipment Purchase	2	4	8.0
Facilities	2	5	10.0
Budget	2	5	10.0
<b>Average Weighted Score</b>		<b>191</b>	<b>191.0</b>
<b>Maximum Weighted Score</b>			<b>250</b>

### **OVERALL RECOMMENDATION**

<b>FUND</b>	<b>X</b>
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<b>FUNDING TO BE CONSIDERED</b>	
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<b>DO NOT FUND</b>	

Ward Williston Reply:

*We at Ward Williston are pleased with the report and recommendation for funding. We have several comments below in reply to areas of concern as expressed by the Technical Reviewer. We would like to thank the Technical Reviewer for his or her time and consideration in this matter.*

G015-3  
Purpose-Fit Portable Multi-Phase Production Measurement System  
Submitted by: Ward Williston Oil Company  
Principal Investigator: James W. Cron  
Request for \$98,000; Total Project Costs \$196,000

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: 1 – very unclear; 2 – unclear; 3 – clear; 4 – very clear; or 5 – exceptionally clear.

Reviewer 15E-01 (Rating: 3)

A careful reading of the executive summary and value statement shows the project to be consistent with the Oil and Gas Research Council's strategic goals 1, 3, and 4 as well as grant priorities 4, 5, 6, and 9.

The value statement could have better connected the project goals with the Council goals.

Ward Williston Reply:

*We at Ward Williston feel that this project will also encompass the Council's 2<sup>nd</sup> strategic goal, as a successful conclusion to the project has the potential for operators to efficiently exploit smaller prospects and smaller EOR opportunities, which in turn will require more technical and field staff thereby creating and preserving jobs. We also feel that this project includes items 2 and 10 of the grant priorities. In accordance with item 2 of the grant priorities, this project has a high potential to create further jobs, wealth and tax revenues for the State of North Dakota by the exploitation of marginal properties. In regards to grant priority number 10, as this is a new technology entrant into a new market (the realm of North Dakota's small and mid-range producers) it will lead to other projects, updated processes and ideas from both the introduced technology and other adjacent technologies.*

2. With the approach suggested and time and budget available, the objectives are: 1 – not achievable; 2 – possibly achievable; 3 – likely achievable; 4 – most likely achievable; or 5 – certainly achievable.

Reviewer 15E-01 (Rating: 3)

- The project approach is very solid.
- The budget is well planned and appears to provide adequate funding.
- The time line is questionable given many recent reports of very long delivery time for new equipment orders.

Ward Williston Reply:

*The PI at Ward Williston has been assured by our vendors that production of key items such as the measurement skid will continue in a timely manner. As Ward Williston has access to its own resources for roustabouts, etc, we feel that further scheduling risks will be minimized during the course of this project. As in any project, something unforeseen could occur thereby impacting the timeline of the project; Ward Williston will seek to minimize any such potential disruptions.*

3. The quality of the methodology displayed in the proposal is: 1 – well below average; 2 – below average; 3 – average; 4 – above average; or 5 – well above average.

Reviewer 15E-01 (Rating: 5)

The project phases are laid out in a logical methodical progression. Each phase builds upon the results of previous phases and provides for revisions and retesting as needed.

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: 1 – extremely small; 2 – small; 3 – significant; 4 – very significant; or 5 – extremely significant.

Reviewer 15E-01 (Rating: 4)

This project will encourage and promote the adaptation of cutting edge well testing technology developed by major international and national oil companies to applications for various types of North Dakota wells.

5. The principal investigator's 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: 1 – very limited; 2 – limited; 3 – adequate; 4 – better than average; or 5 – exceptional.

Reviewer 15E-01 (Rating: 4)

Note the attached Oil and Gas Journal article and references as well as the plan to involve one of the article authors.

6. The background of the investigator(s) as related to the proposed work is: 1 – very limited; 2 – limited; 3 – adequate; 4 – better than average; or 5 – exceptional.

Reviewer 15E-01 (Rating: 4)

The PIs are an experienced engineer and operations manager. One of the primary authors of articles on the technology will be consulted by the PIs.

7. 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: 1 – very inadequate; 2 – inadequate; 3 – adequate; 4 – very good; or 5 – exceptionally good.

Reviewer 15E-01 (Rating: 3)

The management plan provides an excellent internal communications plan and is quite well defined.

The project is broken into multiple phases and should provide progress reports to the Council at the conclusion of each phase instead of one summary report in Phase 6.

*Ward Williston Reply:*

*While we see the advantage of "phase" reporting, considering the timeline and our limited personnel resources, Ward Williston feels it would be more efficient to offer final documentation at the conclusion of the project and not burden the Council with excessive documentation. However, our firm will comply with the Council's direction to obtain proper funding.*

8. The proposed purchase of equipment is: 1 – extremely poorly justified; 2 – poorly justified; 3 – justified; 4 – well justified; or 5 – extremely well justified. (Circle 5 if no equipment is to be purchased.)

Reviewer 15E-01 (Rating: 4)

The project budget clearly identifies all equipment needs as well as anticipated tangible and intangible costs associated with each item.

9. The facilities and equipment available and to be purchased for the proposed research are: 1 – very inadequate; 2 – inadequate; 3 – adequate; 4 – notably good; or 5 – exceptionally good.

Reviewer 15E-01 (Rating: 5)

Equipment specifications and costs are provided along with an engineering design schematic of the test apparatus.

10. The proposed budget “value”<sup>1</sup> relative to the outlined work and the financial commitment from other sources is of: 1 – very low value; 2 – low value; 3 – average value; 4 – high value; or 5 – very high value. (See below)

Reviewer 15E-01 (Rating: 5)

The ability to accurately measure oil well production while minimizing the cost, footprint, and environmental risks of multiple flowlines and test facilities would be of great value to sustaining economic oil and gas production in North Dakota.

Section C. Overall Comments and Recommendations:

Please comment in a general way about the merits and flaws of the proposed project and make a recommendation whether or not to fund.

Reviewer 15E-01 (FUND)

General comments:

- The project plan, budget, and goals are clear.
- The qualifications of the PIs are very good.
- The potential value to North Dakota operators is very high.
- The time line is probably too aggressive given numerous recent reports of long equipment delivery times.
- The PI should be required to provide status reports at the conclusion of each project phase rather than a single summary final report.
- The PI should be made fully aware of Council policies 6.04, 6.05, and 6.06 concerning patent rights, fees, and royalties in the state.

Ward Williston reply:

*We at Ward Williston feel we can work with the Research Council in regards to the proposed project’s timeline and frequency of reporting to create a positive outcome for this project. After review of relevant documentation, the PI is aware of policies 6.04, 6.05, and 6.06 concerning patent rights, fees, and royalties as it pertains to funded projects.*