

Enhanced Oil Recovery Commission



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1st Quarter Business Meeting

COE Library, Rm 506, University of Wyoming, Laramie

July 20, 2011

Commission Members Present:

Peter Wold, Chairman

Bern Hinckley

Betty Fear

Eli Bebout

Tom Fitzsimmons – via teleconference

Commission Members Absent:

Bruce Williams

Commission Staff:

Kathy Olson, EOR Commission Assistant

Eric Easton, EOR Commission Attorney (Absent)

Enhanced Oil Recovery Institute Staff:

David Mohrbacher

Glen Murrell

Kathy Olson

Geoff Thyne

Allen Tanner

UW Personnel

Ben Cook

Klass van't Veld

Mark Newcomb

Non UW Personnel:

Brian Jeffries, Wyoming Pipeline Authority

Karl Osborne, U.S. Bureau of Land Management

Vicki Stamp, True Energy

I. Welcome and Call to Order

Chairman Wold called the meeting of the EOR Commission to order.

II. Approval of Minutes

Commissioner Bebout moved and Commissioner Hinckley seconded to approve the May 9th Business and Executive Session Minutes. It was noted that in the future, the minutes should be slightly more condensed, as well as contain a final page listing action items.

All present voted to approve the minutes.

III. Commission Open Discussion

Commissioner Bebout commended EORI on the work it has contributed to the RMP work being done regarding the Bighorn Basin and the BLM.

Vicki Stamp of True Energy commended the EORI on the 2011 CO2 Conference. She believed it was the strongest program she had seen in terms of technical breadth and overall balance.

IV. Director's Overview

Director Mohrbacher reported that the CO2 Conference had indeed been very successful as far as record attendance and new sponsors, as well as a great deal of positive momentum to continue the conference's growth and value.

Director Mohrbacher informed the Commission that EORI presented to the Minerals Committee an update of the Institute's activities, including results and work being performed on the Bighorn Basin RMP. He acknowledged that Drs. Peigui Yin and Shaochang Wo have contributed a substantial amount of work to characterize the extent of residual oil zones (ROZs) in the Bighorn Basin. The estimated area that will be characterized includes approximately 290,000acres under and in the vicinity of existing, mature oil fields. The area for potential development will be provided by EORI to the Commission for transmittal to the Bureau of Land Management (BLM) by mid-August. A cover letter for transmittal of the new technical memorandum will be provided for Peter Wold's signature. The Director mentioned that the RPSEA (Research Partnership for Secure Energy in America) approved a joint proposal submitted by the University of Texas at Midland, Texas. The project will in part further characterize ROZs in the Bighorn Basin. EORI has agreed to work with the team to complete the approved work.

Director Mohrbacher informed the Commission that EORI will pursue additional work with RPSEA after their 2011 Request for Proposal is provided to the public during the fall of 2011. The proposed work will

include further characterization and development of ROZs in Wyoming. ROZs are considered a new energy source by RPSEA. The Commission will be updated as progress is achieved with this objective.

Director Mohrbacher mentioned that he was working with Dr. Mark Northam from the School of Energy Resources to join the RPSEA, and that this would greatly benefit the EORI in a monetary manner.

Director Mohrbacher reported that the Minnelusa Consortium has been making good progress. He discussed some of the things the consortium is doing that are innovative. Specifically, he mentioned the use of state of the art static and dynamic modeling to develop a better understanding of specific reservoirs, as well as generating data that has not previously been generated for these reservoirs, and learning how to incorporate 3-D seismic technology into the development of the Minnelusa reservoirs.

EORI has been increasing its resources to perform reservoir modeling, including hiring new staff members to take on modeling responsibilities. The Institute now has three full-time modelers.

Director Mohrbacher reported that Ben Cook is pursuing a well-defined scope of work for future economic evaluations. He asked that Kathy send out Ben's economic proposal for this year to the Commission.

Commissioner Bebout brought up an issue that he would like to continue to discuss and clarify in the future regarding economics. He suggested that coordinating economic analysis activity with other state agencies that are doing the same thing should be listed under the Commission's Action Items.

Director Mohrbacher proposed that Dr. Geoff Thyne's work regarding waterflood design be presented to the Commission during September's meeting in the form of a work plan. He also suggested Dr. Thyne present to the Commission a proposal outlining how the Institute will move forward with waterflood work in the laboratory.

Director Mohrbacher discussed the Institute's progress regarding ROZ (residual oil zone) evaluation. The Institute has drawn up the preliminary map and has performed natural fracturing evaluations. A workshop is planned with Mr. Peter Hennings, who is a senior manager and scientist with Conoco-Phillips and an expert in characterizing natural fractures. The workshop will focus on evaluating knowledge of new tools, geophysics and imaging. He requested an action item for Shaochang be listed for rescheduling this workshop.

Chairman Wold suggested the Dow Chemical project be listed among the other action items. The project includes implementing some applications for chemical floods on oil fields in the state. This fits into the Institute's strategic objectives because Dow will provide the chemicals for flooding, and the Wyoming fields would benefit from enhanced production, thus benefitting the state financially, and allowing a large company such as Dow to use Wyoming as an example of a successful project. Director Mohrbacher requested the action item be listed as "Schedule a discussion with Dow and potential Wyoming operators who are interested in demonstrating performance techniques in Wyoming reservoirs."

Director Mohrbacher discussed hosting a Tensleep fracturing workshop, and listed it as an action item for Dr. Shaochang Wo. Discussion followed regarding when and where the workshop would occur.

Director Mohrbacher discussed new prospects for EORI. These prospects include Merit participating in a Tensleep ROZ evaluation, initiating a consortium of companies regarding application of EOR in the Bighorn Basin, expanding the Minnelusa Consortium, and cooperating with Denbury Resources and Linc Energy to begin working on a CO₂ project. Associate Director, Glen Murrell, also discussed possibly starting a technical exchange with someone from Chevron, as well as possibly getting involved with Siemens Oil and Gas regarding a contract for business development assistance.

Director Mohrbacher mentioned an opening at EORI for a GIS and Access database expert. Glen Murrell is working on a job description to begin the process of hiring someone. Regarding other EORI personnel issues, there are a few employees who have yet to acquire their green cards, and Mr. Mohrbacher discussed some of the benefits to both staff and the Institute with regards to helping these individuals obtain US residency.

The Outreach Manager position is estimated to be filled by mid-fall. The description identifies a senior person with oil and gas knowledge who has client management skills and will work with Director Mohrbacher and Associate Director Glen Murrell. Mr. Mohrbacher emphasized the importance of working as a team with the Outreach Manager to achieve strategic objectives defined for EORI projects and goals. Senator Bebout discussed the EPA's (Environmental Protection Agency) involvement in future EOR projects. He stated that the EPA is considering placing EOR in the same legal category as sequestration, instead of listing it under the rules and regulations of the Oil and Gas Commission. He stated this should be watched closely by the EORC, so that any changes will not come as a surprise.

V. Guest Presentations & Discussions

Mr. Mark Newcomb, of UW, gave a presentation regarding the CO₂ Pipeline Infrastructure, and Mr. Brian Jeffries, from the Wyoming Pipeline Authority, also gave a talk about pipeline building in the Big Horn Basin in light of the BLM Regional Management Plan (RMP).

VI. Old Business

EORI Tech Memo

In the summer of 2011, a letter was written to the BLM regarding the RMP in the Bighorn Basin area, specifically regarding EOR. Details regarding well spacing, surface disruption, and amount of oil to be recovered are still in the works, but EORI will continue to work with the BLM regarding the Bighorn Basin RMP.

Mr. Karl Osborn of the BLM voiced a concern that the public know and understand the relationship between the BLM, the Institute, and the Commission. He encouraged the Institute continue to give the public an opportunity to listen to discussions between EORI and the BLM.

Chairman Wold requested input from Mr. Brian Jeffries of the Wyoming Pipeline Authority regarding definition of potential pipeline right-of-ways for transportation of carbon dioxide to the Bighorn Basin

from other parts of Wyoming. Mr. Jeffries stated that he would be willing to work with the BLM in providing them with input from the Wyoming Pipeline Authority, as well as work jointly in the response through EORI. Senator Bebout suggested that Mr. Jeffries work independently of the Institute regarding pipeline infrastructure as he has a better understanding of infrastructure needed to provide carbon dioxide to potential CO₂ EOR projects in the Bighorn Basin.

VII. New Business

Proposals to the School of Energy Resources

Director Mohrbacher presented two proposals the EORI had written to the School of Energy Resources. The two proposals included requesting money for a new EORI cluster for modeling needs, and requesting money for new lab equipment for existing lab work. Commissioner Hinckley proposed that a Memo of Understanding (MOU) be written to define how the cluster will be procured, installed, operated, and maintained. The MOU will reiterate the relationship that already exists with the University, which allows EORI staff to define priorities for use of the cluster. Commissioner Bebout seconded the proposed amendment, and the Commission approved the proposal for a new cluster.

Regarding the second proposal to SER requesting money for new lab equipment, EORC proposed that EORI look into the legislative language and see if we could use the leftover monies from the previous fiscal year to purchase new lab equipment. Senator Bebout proposed the Chairman of the Appropriations Committee and the University be informed about EORI using SER's money to fund the purchase of new lab equipment to allow for the proper budget processes to take place. Chairman Wold also suggested that Mr. Fitzsimmons be involved in getting things coordinated and prepared for Commission approval.

FY13-14 Budget

Chairman Wold suggested postponing the discussion regarding the budget due to some questions regarding the salaries of new staff and new positions. Director Mohrbacher and Kathy Olson are going to report to the Commission once all positions and spending had been accounted for and reflected in the budget.

There was a discussion regarding carry over funds of approximately \$360,000 from FY 2011 and whether or not these funds should be used for personnel or the needed cluster at EORI, if SER funding was not secured. Director Mohrbacher stated he and Kathy Olson would report back to the Commission regarding how the carry over monies would be spent.

EORC Website

Deputy Director Glen Murrell reported that the EORC had acquired rights to a state hosted website, and the EORC website linked to the University of Wyoming's website would be deleted.

VIII. Next Meeting

The next quarterly Enhanced Oil Recovery Commission meeting has been set for September 14, 2011 in Jackson Hole, Wyoming at the Snow King Lodge following the IOR/EOR Conference.

IX. Review of Action Items

1	Circulate Ben Cook's Economic Proposal for this Fiscal Year to EORC Members/Kathy	Completed
2	EORC coordinate economic analysis activity with other state agencies that are doing the same thing	
3	Coordinate Economic Analysis activities with other state agencies/Ben Cook & Glen	In Progress
4	Have Geoff Thyne provide work plan on designer water flood and lab program by end of Aug and present it to the next EORC mtg.	
5	Reschedule Peter Henning's Tensleep fracturing workshop & enter on calendar/Shaochang	Pending
6	Schedule a discussion with Dow and potential Wyoming operators who are interested in demonstrating performance techniques in Wyoming reservoirs.	
7	Send Outreach Mgr ad to EORC members/Kathy	Completed
8	Coordinate with Eli Bebout for combining Mineral's Committee meetings with one of the EORC meetings/Eli, David, Glen	
9	Delete UW EORC website/Glen	Completed
10	Evaluate constitutionality of the existence and operation of EORI in light of other examples of independent agencies created by the Wyoming legislature (e.g. Wyoming Pipeline Authority) - Eric Easton	Contacted Eric
11	Budget to EORC by Fri, July 29/David & Kathy	
12	Send Tom Fitzsimmons Project Status Report/Kathy	Completed
13	Send reminder to EORC members about SER Hydraulic Fracturing Conference, Sept 26-27/Glen	Completed

Chairman Wold moved the Commission adjourn the general Business Meeting and open the Executive Session. Mr. Fitzsimmons suggested that, due to the fact that many of the Commissioners had left following the break, there needed to be no formal motion to adjourn the Business Meeting, as the meeting had become more of a discussion.

The EOR Commission adjourned the meeting.