

Enhanced Oil Recovery Commission



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Business Meeting

September 14, 2011

Snow King Lodge

Jackson Hole, WY

Commission Members Present:

Bruce Williams, Vice-Chairman

Betty Fear

Bern Hinckley

Wally Ulrich

Tom Fitzsimmons (via teleconference)

Commissions Members Not Present:

Peter Wold

Eli Bebout

Commission Staff:

Kathy Olson, EOR Commission Assistant

Enhanced Oil Recovery Institute Staff:

David Mohrbacher, Director

Glen Murrell, Associate Director

Allen Tanner

Vladimir Alvarado

Visitors:

Mark Northam, Director, School of Energy Resources

Jason Rolfe, Wyoming State Geological Survey Due to Tom Fitzsimmons being temporarily available on the telephone at the beginning of the meeting, the agenda was not strictly adhered to. Minutes will follow the order of the meeting, not the original agenda.

I. Call To Order

Vice-Chairman Williams explained that Chairman Wold could not attend the meeting and that he (Vice-Chairman Williams) would be Chairing the meeting. He called the 2nd FY12 Quarterly Business Meeting of the Enhanced Oil Recovery Commission to order at 8:00 am. He welcomed the EOR Commission members, EORI staff and visitors present at the meeting as well as the Commission member in attendance via teleconference.

II. Approval of Minutes

Vice Chairman Williams called for discussion of the four sets of minutes from the previous EORC meetings including the July 20, 2011 Business Meeting and Executive Session minutes, along with an August 10 Teleconference call regarding the budget and a follow up conference call on August 31.

Commissioner Hinckley requested more detail be included in the minutes. In the July 20, 2011 minutes, he wanted to see the addition of Mr. Mark Newcomb and Mr. Brian Jeffries' presentations, an announcement concerning the new State hosted EORC website, a discussion about the FY11 carry over funds amount and Senator Bebout's statement relative to the EPA and the Oil and Gas industry in Wyoming. A quote regarding the CO₂ Conference needs corrected as being a quote by Vicki Stamp and a status be attached to each of the action items. It was suggested that the Appropriations Committee and the University being informed about the use of SER's funding being applied to EORI's equipment purchases. Corrections to the July 20 Business meeting minutes will be made and sent out. Commissioner Fitzsimmons made a motion to approve the July 20 minutes with amendments. Commissioner Fear seconded. Motion carried. Following was a discussion of the Executive Session minutes from July 20. Commissioner Hinckley made a motion to move the announcement regarding the Sept 26-27 Hydraulic Fracturing Conference from the Executive Session to the Business Meeting minutes. Motion carried.

A discussion followed about what topics are to be included in the Executive Session versus the Regular Session.

A motion to approve the minutes from the Aug 10 Special Meeting via Teleconference was made by Commissioner Hinckley, seconded by Commissioner Fear. Motion carried.

Commissioner Hinckley requested the Aug 31 Special Meeting minutes reflect the request by the Commission for EORI to clearly break out the Commission Support piece from the Technical Support portion in the FY13-14 budget and find a more appropriate division between the two, and distinguish between new work the Institute is proposing under the extension budget as opposed to changing the way in which public funds flow to certain salaries. He explained that it was not clear what portion of the extension budget represented new initiatives, work and employees versus the reallocation of funds for the Director and Office Manager's salaries. He added that a mention of the summarized Aug 15 Budget Memo also be included. Commissioner Hinckley moved that the minutes from the Aug 31 Special Meeting be approved with these amendments, Tom Fitzsimmons seconded. Motion carried.

III. New Business

Update EORI Budget, Spending, Staffing

Director Mohrbacher and Kathy Olson provided an overview of the FY11 (unspent funds) and FY12 Budget Updates.

Questions were raised about where the sponsorship funds from the IOR Conference in Jackson in Sept, 2010 and the CO₂ Conference in July, 2011 were recorded in the budget updates. Vice-Chairman Williams requested that both Budget Updates be updated with the total collected from sponsors for the 2010 IOR Conference in Jackson and 2011 CO₂ Conference in Casper.

Vice-Chairman Williams informed the Commission of a request from UW Faculty member Norm Morrow to EORI for additional funding for the proposed core work. Director Mohrbacher described the core analysis which will be performed from 200 feet of core cut from the Minnelusa. Merit has contributed the core materials and fluids. Additional equipment will also be requested from Merit. EORI, along with the three UW faculty involved (Piri, Morrow and Alvarado) will do the analysis work which includes evaluating permeability and wettability. Norm

Morrow has requested additional funding of \$150,000 for staff and equipment to perform the wettability studies out of the approximately \$286,000 in FY11 carry over funds. This leaves approximately \$39,000 in other Faculty Budgets and \$46,000 in Commission funds for FY11. Commissioner Ulrich inquired about what EORI's plans were for field demonstrations and whether there are some opportunities for these in other Wyoming areas. Director Mohrbacher responded that operators will run their pilot tests and EORI can assist by helping them develop their plans, observe during testing and helping with the interpretation and results. He added that a pilot test has not currently been identified but that he and Glen Murrell are working on it. The Commission expressed that field demonstrations are key to EORI's accomplishments and since no funds were spent on that directive in FY11, this effort needs to be stepped up in FY12.

A motion to move \$150,000 from the EORI unspent FY11 funds for use in the wettability studies of the Minnelusa cores in Dr. Morrow's lab was made by Commissioner Fear, and seconded by Commissioner Hinckley. Motion passed.

Commissioner Fitzsimmons then dismissed himself from telephone contact.

IV. Open Discussion

Vice-Chairman Williams commended the EORI staff for putting together an excellent program at the IOR Conference in Jackson. He felt there were good presentations with a balance between operators talking about actual projects with other presentations relative to real tools being used. Commission Ulrich agreed that the presentations were informative and it was much appreciated by him and his staff.

Commissioner Hinckley said he was pleased to see the new State hosted EORC website and he would like to see more work done on the content such as correct meeting dates and titles of Commissioners, all Minutes and Agenda's to be posted as well as Mr. Mohrbacher's Budget Memo. Secondly, he would like to see the \$150,000 that Mr. Mohrbacher stated as a goal for outside funding in his August Budget Memo be listed in future 2013-14 Budget Updates and be tracked. Thirdly, there was correspondence between the Myron Allen and Mr. Mohrbacher regarding the legislative budget that he believed needs to be shared with the entire Commission. Lastly, he continues to be interested in scheduling Eric Easton for a future EORC meeting to give a summarized session on the AAG's view of how we need to conduct business with regards to the Executive Session, public records, etc.

Commissioner Ulrich stated that there are training sessions around the state for Commissions. Commissioner Ulrich offered to check into publications and will send Kathy Olson a packet of information. It was decided to address this in the next EORC's meeting agenda.

V. Director's Overview

Director Mohrbacher updated the Commission on EORI's current projects and the Bighorn Basin RMP response that was provided to the BLM including the two Technical Memos and ROZ (Residual Oil Zone) maps. Commissioner Ulrich commended the work put into this effort by the EORI staff and added that the Geological Survey has referenced this work and he believes this is the type of work the Institute should be doing for this region. There was a discussion about the other RMP's that the BLM is working on across the state (Lander, Powder River Basin, etc.) and whether we need to review them as soon as they are published or, because of the enormous amount of work that this entails, should we be responsive after other entities have reviewed them. Director Mohrbacher explained that this type of work does disrupt the normal project workload and resources do have to be shifted to accommodate taking on the research required to respond to the Resource Management Plans that are put out by the BLM. There is additional time associated with follow up meetings at the BLM,

correspondence, teleconferences and work by EORI's clerical staff. Mr. Mohrbacher suggested that EORI provide a quick review of the other RMP's then decide what value we can provide and before we commit a lot of resources, we meet with Commission about it. He believes the Bighorn effort was a learning experience for EORI as it advanced our efforts by learning about opportunities and updating what we're doing. Commissioner Hinckley added that he categorizes this type of work with outreach efforts and believes the operators would agree, as it educates and promotes enhanced oil recovery in the state of Wyoming and probably needs to be included in that particular budget and it would be to our advantage to get the BLM folks to involve us before it gets to the RMP (Resource Management Plan) stage. Director Mohrbacher responded that Chris Carlton from the state BLM has offered to come down and meet with EORI and we will get a meeting scheduled with him.

Director Mohrbacher further reported on the RPSEA (Research Partnership to Secure Energy for America) Request for Proposal. We are currently involved in the RPSEA proposal awarded to the University of Texas through Steve Melzer. This will benefit the Institute by helping us to characterize ROZ's in the Bighorn Basin. RPSEA has talked to EORI about opportunities to participate in their program and is submitting a proposal in the new year. Their purpose is to develop new energy sources in the U.S. and there is a potential for a \$1-2 million dollar project. Mr. Mohrbacher proposed that we look at the opportunity and the benefit it may create for the state of Wyoming and maybe partner with other groups and faculty. He would like to talk to the Research Office about UW joining the RPSEA as well.

Mr. Mohrbacher provided updates on EORI's major activities, including the Tensleep program, the Minnelusa Consortium and Evaluation, the Wind River RMP, new staff in the Reservoir Modeling and Characterization groups, ROZ and natural fracturing evaluations, and Outreach along with Benchmarking. A detailed project status update was provided to the Commission. Glen Murrell reported on his involvement with the Permian Basin CO₂ group in Texas. David Mohrbacher reported on his participation in the PEW Foundation Policy Initiative. Kathy Olson informed the Commission of the Outreach Manager position status which is currently being advertised through Oct 31, 2011 with six applicants interested to date. Mr. Mohrbacher outlined the EORI project focus and company prospects. Vice-Chairman Williams mentioned that he would like to see an association of companies to each of the goals and resources for a well-defined program. Commissioner Hinckley inquired about a formal evaluation matrix and how it aligns with EORI's objectives. Mr. Mohrbacher responded that we need to know how each project aligns with our strategic objectives, what value it will provide to the state of Wyoming, who will do the work and what resources are needed to get it done without precluding the creativity of staying current with where the industry is. Commissioner Hinckley suggested listing prospects and how they relate to the Institute's objectives.

Geoff Thyne provided a Power Point overview of the Chemical Flooding Program. He explained that the program was previously faculty driven. It is now Institute driven and we are in the process of formalizing the program. The prime target for the Chemical Flooding program at this point in time is the Minnelusa. The state pays us to be objective, evaluate techniques and provide information, not advocate for products. The process includes first the screening process, secondly, the lab work often followed by single well tracer test and finally to the pilot stage. Useful techniques are presented as well as the lab work, and then help fund the single well tracer tests. Our role in this partnership lets us leverage between the vendors and producers together. Then we need to facilitate outreach and get the information out there with peer meetings and possibly interaction with groups of producers. Director Mohrbacher added that we're trying to keep our lab focus on projects associated with actual field operations. Field demonstrations will be developed with operators who are committed. Recent projects that could result in field demonstrations include:

- Evaluation of low salinity water flooding for the Minnelusa,

- Application of the CO₂ Foam to a Tensleep reservoir to improve conformance,
- Evaluation of designer water floods for Wyoming reservoirs,
- Advanced characterization of Minnelusa core, and
- Testing a new process which is a surfactant oxidant co-solvent blend in Wyoming rocks and oil, specifically in the Minnelusa.

Lab staffing requirements versus the projected projects and asking companies to bear part of the cost were also discussed.

Mark Northam of the School of Energy Resources (SER) spoke to the Commission about the energy building's completion date being one year as well as the complimentary relationship between him and David Mohrbacher and the two of them continuing to work together. The relationship between SER and EORI has been rewarding, not demanding. He supports Geoff Thyne's lab work in the new building. He has no concerns about excluding the salaries for David Mohrbacher and Kathy Olson from the SER budget. He invited the EORC to the School of Energy Resource's presentation that evening in which they planned to discuss where SER is today, where they're headed over the next five years while seeking industry's feedback to make sure they are more aligned with meeting their needs.

VI. New Business

a. Plans for 2012 CO₂ Conference

b. EORI Sponsors

Glen Murrell reported on the success of the CO₂ Conference in July. He reviewed the lessons learned; a budget comparison with the previous year's conference and the cost savings from changes implemented as well as increases due to the venue change and the event coordinator's services. Sponsorship was down slightly due to starting late and it was too much to ask companies to donate given such short notice. Director Mohrbacher indicated that a sponsorship plan will be developed and presented to the EORC for conferences in 2012. We are starting the planning early for next year's conferences and already have two sponsors signed up. Mr. Mohrbacher anticipates a surplus for the conference next year. The new facility will have the space to accommodate more vendor booths.

There was a discussion about driving up attendance at the IOR Conference with the location and the higher cost of the conference in Jackson. A partnership with others sponsoring CO₂ and IOR conferences in the country has been explored by Glen Murrell.

c. Outline of proposed EOR Industry Forum

Glen Murrell reported on a proposed initiative to organize a Supplier Summit. Several new service providers have entered the Wyoming EOR market with very pro-active missions to establish themselves as EOR participants. They have very big ideas regarding implementing EOR and understand that many EOR opportunities have been hindered by a combination of challenges ranging from capital scarcity, risk aversion and process distrust amongst operators. They propose to overcome these obstacles by partnering with the operator in such a way as to remove all, or most of the risk associated with implementing EOR in their field. One supplier is already well down the path with a particular operator in the Minnelusa and one other has expressed interest in the same model. Rather than pick winners, we propose to organize some kind of forum that brings together suppliers and operators. One

model is a one-day meeting where the morning is dedicated to the suppliers outlining their technology and the partnering models they are interested in followed by an afternoon where each supplier meets face to face with each attending operator. Currently this initiative is in the planning phase. Several suppliers have been approached.

d. Request for Proposals to University faculty

Director Mohrbacher outlined the RFP process EORI is requiring of the University faculty now that we have solid technical resource areas identified. The faculty will write a proposal defining their project and goals which will be aligned with EORI's strategic objectives. A good example is the Economics proposal that was submitted by Owen Phillips Klaas Van't Veld and Ben Cook and the current core work Norm Morrow and Mohammad Piri are providing for Reza Barati. The plan is for EORI to foster the relationships between EORI researchers and UW faculty. This approach will communicate EORI's needs to support our program and the faculty can propose an associated project a year in advance, starting this fall for the next biennium. He would like the faculty budget be approved on a biennium basis rather than annually.

e. Summary of Results

Director Mohrbacher reviewed the program metrics tracked, per the "Summary of Results, Enhanced Oil Recovery Institute, 2011-2012 Biennium". There was a discussion about each of the components including, 1) New Companies/Investors Attracted to Wyoming; 2) New Investment Made by EORI Partners in Wyoming; 3) New Oil Reserves Generated; 4) Co-investment/Investment "In-Kind"; 5) Direct Funding of EORI Staff and Costs; 6) Participation in EORI Conferences; and, 7) Special Projects. Continued tracking of these metrics will be reflected in EORI's Annual Report.

f. EORI Spending during FY2012

Vice Chairman Williams requested that the budget update for 2012 include spending by project. Kathy Olson mentioned the FY13-14 Budget Request reflects the budget by current projects being worked on; however, the FY11-12 budget's projects do not correspond with our current work. Commissioner Hinckley requested that we track and report this current year by the projects EORI is currently working on. Kathy Olson responded that we will try to revamp the accounting system, changing the coding to report by project and provide that format at the January, 2012 meeting.

g. EORI Annual Calendar

Kathy Olson reviewed the upcoming proposed dates for the next EORC meeting, CO₂ Conference and IOR Conference. Kathy requested that the Commission review the dates once they return to their offices and respond via email if there are any conflicts.

h. EORI Project and Prospect Summary

Director Mohrbacher reviewed the Project and Prospect Summary and outlined EORI's active projects including the Minnelusa Consortium, and the modeling, core evaluation, CO₂ foam and chemical flooding projects. Glen Murrell reported on data compilation and feasibility studies he's providing screening for and the progress of the web-based search tool. A discussion regarding companies with Confidentiality Agreements and new prospects was deferred to the Executive Session.

A motion to move into the Executive Session for purposes of discussing new company prospects was made by Commissioner Hinckley, seconded by Commissioner Fear. Motion carried.

Upon returning to the regular session, Commissioner Hinckley requested a status on the legislative budget request. Kathy Olson reported that the Budget Request was submitted to UW on Sept 1. The university then forwarded EORC's budget to the governor's office with the university's budget request. It is being reviewed by the governor's office and they will provide their recommendation to the Joint Appropriations Committee. A meeting is going to be scheduled with the Governor and his staff to answer their questions. Vice-Chair Williams requested an action item for the Commissioners to provide feedback to Director Mohrbacher by the first week in Oct regarding about what they believe should be included in the EORI budget presentation to the Governor's office.

A discussion was held about how the legislative budget presentations were historically done in previous bienniums and that EORC is not being treated as a state agency, but rather an entity of UW. It was recommended that we work and communicate directly with the Governor's office. Kathy Olson will research who the EORC state budget contact is. The EORC Chair or Vice Chair will look into who is to be appointed to the EORC by the Governor's office.

Commissioner Hinckley discussed how we most usefully engage the Commission and suggested less paper such as monthly progress reports but that they receive paper that is more focused and condensed, and provided timely prior to meetings. He appreciated the August Memo written by the Director where the information is pulled together.

Kathy Olson reviewed the action items.

Vice Chairman Williams adjourned the meeting.