

December 17, 2008

Dear Oil and Gas Research Council Members:

Attached you will find a funding request for a project to be completed by Continental Resources, Inc. (CRI).

Please accept this letter as a binding commitment on behalf of the above to complete the project as described in the application if the Commission approves the grant requested.

Sincerely,

Continental Resources, Inc.


VP - Resource Development

**Determination of the Uniqueness of Reserves and
Productivity from the Middle Bakken and
the Three Forks Sanish Zones**

Proposal For Funding
Submitted to:

The North Dakota Oil and Gas Research Council

Submitted by Continental Resources Inc.
Gene Carlson Principle Investigator

December 17, 2008

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Abstract

Continental Resources, Inc. is requesting funding of \$1,395,000 from the North Dakota Oil and Gas Research Council (OGRC) to support a project to determine the uniqueness of oil reserves in the Three Forks Formation relative to the reserves of the Bakken Formation in North Dakota. The objective of the project is to develop data that helps to answer the question as to whether or not the oil resources of the Mississippian/Devonian Bakken and Devonian Three Forks Formations in North Dakota should be considered to be separate and unique reserves. The proposed work will be conducted in Mountrail County in an area that has seen successful production from the Middle Bakken and Three Forks-Sanish zones. The project work plan calls for the use of an existing well that currently produces oil from the Three Forks-Sanish zone and a new well (in close proximity to the existing well) that will be drilled into the Middle Bakken. Over the course of the drilling, completion, and production of fluids from the new Middle Bakken well pressure pulses will be created. Close monitoring of pressure changes in the Sanish well will provide key data that will be incorporated into a reservoir model, which in turn will be used to determine whether or not there is communication between the two wells. It is anticipated that the results of these activities will provide previously unavailable insight regarding the uniqueness of the Three Forks-Sanish as an emerging oil play in North Dakota. The duration of the proposed project is 8 months, with a proposed start date of April 15, 2009 and an anticipated completion date of November 15, 2009. Participants in the project include Continental Resources, Inc., and ConocoPhillips. The total proposed project cost is \$8,790,000. The operating partners of the project will provide \$7,395,000 of cost-share to the project.

Project Description

The objective of the project proposed by Continental Resources, Inc. is to acquire data that helps to answer the question as to whether or not the oil resources of the Devonian Bakken and Three Forks Formations in North Dakota should be considered to be separate and unique reserves.

The Devonian Three Forks Formation, in particular its uppermost member, the Sanish sand, has recently shown great promise as a potentially prolific oil producing zone in North Dakota. Reports in recent months indicate that Three Forks-Sanish wells in Mountrail and Dunn Counties have shown sustained production rates exceeding 700 barrels of oil per day (bopd) (Minot Daily News, October 23, 2008), with at least one well reporting an initial production rate of 1,750 barrels of oil equivalent per day (XTO press release, November 5, 2008). The Three Forks Formation is immediately overlain by the Bakken Formation. This stratigraphic relationship combined with geochemical similarities of the respective formation fluids have led many workers in the Williston Basin to theorize that the Sanish zone is in communication with the oil-producing middle member of the Bakken. As a result, petroleum resource estimations have typically lumped the two together (USGS, 2008). However, the nature of some of the recent successful exploration and production (E&P) operations in the Three Forks-Sanish suggest that it may be a resource that is unique and separate from the Bakken play. Currently, the stratigraphic interval used by the North Dakota Oil and Gas Division to define the Bakken Pool includes the Sanish zone in most North Dakota oil fields. The result of this approach is that production information that is specific to the Sanish is

limited, making a definitive determination of the uniqueness of the Three Forks-Sanish play using existing data difficult. Acquiring new data focused on demonstrating that the Three Forks-Sanish play is separate from the Bakken play will provide the State of North Dakota and the oil and gas industry in the state with new insight that can be used to 1) develop realistic assessments and estimates of Three Forks-Sanish oil reserves; and 2) design and implement effective and efficient E&P strategies for defining and exploiting an emerging Three Forks-Sanish play in North Dakota. Continental Resources, Inc. is proposing to conduct a field-based test in McKenzie County, North Dakota, to develop previously unavailable data that will test the hypothesis that the Sanish reservoir is indeed separated from the Middle Bakken.

The proposed test will be conducted using two wells, an existing well that is currently producing oil from the Three Forks-Sanish zone, and a new well to be drilled and completed in the Middle Bakken in close proximity to the existing well. The existing well is the Mathistad 1-35H well, located in Sec 35, T150N, R96W, in McKenzie County. Appendix A includes a type log for the Bakken-Three Forks from a well near the proposed project. The type log shows a 30-foot-thick Middle Bakken Member and a 25-foot-thick zone at the top of the Three Forks-Sanish to be separated by approximately 20 feet of Lower Bakken shale. In June, 2008, the Mathistad 1-35H was the first well drilled and completed into the top of the Three Forks-Sanish interval within the 1,280 acre Mathistad drilling unit. Initial production for the Mathistad 1-35H was greater than 1,000 bopd. Production from the well began in July, 2008, and Appendix B presents a production curve that illustrates the performance of the Mathistad 1-35H to date. The key to the proposed test will be the drilling, completion, and production of fluids from a new

well drilled within the Mathistad unit into the conventional Middle Bakken target zone. Appendix C includes a map of the proposed test location, including the Mathistad 1-35H well and adjacent wells. Pressure in the existing well will be closely monitored throughout the entire course of the project, especially while completing and producing the new well. Pressure monitoring, fluid and gas analyses, GOR, oil assays and other analytical work will be conducted to determine whether enough evidence exists to call the zones separate. The proposed project will be conducted in two phases: 1) Phase I - Drilling and Completion; and 2) Phase II - Reservoir Engineering.

Phase I – Drilling and Completion will be conducted as follows. The Mathistad 1-35H (hereby referred to as the “Sanish well”) will continue producing from the Three Forks-Sanish until the drilling operation for the new Middle Bakken well has reached a horizontal orientation in the lateral leg. At that time the Sanish well will be shut-in for the duration of the data gathering period (~3 months). As part of the shut-in operation pressure gauges will be placed in the Sanish well, below a packer. The gauges will monitor pressure, recording any changes in the Three Forks-Sanish zone during the final drilling phase of the lateral leg of the new Middle Bakken well and during its completion. The new Middle Bakken well will be drilled essentially on top of the existing Sanish well. It will be completed with a single long lateral using swell packers and the perf & plug method. The new Middle Bakken well will be hydraulically fraced and completed in a manner that is similar to the existing Sanish well. The new Middle Bakken well will be brought on to production and flow tested. Production and surface pressures will be recorded according to the procedure described in the description of Phase II activities. Once the new Middle Bakken well has been brought onto production and its initial

parameters have been established and recorded, then the existing Sanish well will be returned to production. Production and surface pressures will be monitored, recorded, and reported.

Phase II – Reservoir Engineering Phase will be conducted as follows: The produced fluid and pressure history for the Sanish well will be used to create a computer model for test design. Reservoir modeling has already been conducted to develop an initial match of the Mathistad 1-35H production, as shown in Appendix D. Data obtained by the proposed project will be used to update the model. The bottom hole pressure (BHP) and wellhead pressure (WHP) data obtained for the Sanish and Middle Bakken wells will be incorporated into the model to create a WHP to BHP correlation, which will then be used to refine and retune the current history match of the Mathistad 1-35H. Phase II will also include the performance of a pulse test, whereby a pressure pulse is created to evaluate the nature, if any, of the communication between the Middle Bakken and Sanish wells. The pulse test will be conducted as follows: Pressure will be monitored during the frac job (including flowback) on the Middle Bakken well, which will create an initial pressure pulse. The Middle Bakken well will then be shut in for an appropriate time period, after which it will be produced, thereby creating an additional pressure pulse. Production and pressure data from the pulse testing will be incorporated into the computer model.

The results obtained from the Phase I and II activities will be used to determine the uniqueness of the two producing zones, thereby shedding previously unavailable insight into the separation, or lack thereof, that has been hypothesized to exist between

the Three Forks-Sanish and the Middle Bakken resources. The results of the project will be published and disseminated according to the standards of the OGRC.

Standards of Success

The success of this project will be measured by the development of a high-quality dataset and performance of reservoir modeling that leads to the establishment of concrete evidence regarding relationship, or lack thereof, between the Three Forks-Sanish and Middle Bakken oil producing zones. Whether the results support the theory that the Three Forks-Sanish is an emerging unique oil play in North Dakota, or indicate that it is indeed in communication with the Middle Bakken and therefore a part of that play, if the project develops insight that will facilitate the effective exploitation of these resources then it will be considered successful. It is anticipated that the implementation and execution of the proposed activities will provide such insight and knowledge to the OGRC and its stakeholders.

Background/Qualifications

CRI is a primary operator of oil and gas wells in the Williston Basin. CRI was established in 1967 and operated in the Rockies since 1991. CRI is active in and a leader in the Middle Bakken/Three Forks oil and gas development and exploration in North Dakota.

Management

The work on this project will be performed by or under the supervision of CRI geologists, engineers, and field personnel. Gene Carlson, Vice President of Resource Development at Continental resources will be the Principle Investigator of the project. Gene R Carlson has served as Vice President-Resource Development for Continental resources since October 2005. He was a founder and Chief Operation Officer for Encore Acquisition Company from its inception in April 1998 to March 2003. Mr. Carlson graduated from Texas A&M University with a Bachelor of Science degree in Mechanical Engineering.

Timetable

- April 15 – May 1 2009
- Cleanout and run production log in Mathistad 1-35H Three Forks horizontal. (500 M\$)

- April 1 – May 1 2009
- Drill second well and set casing to Bakken. (6000 M\$)

- Run tandem BHP gauges and for downhole shut in of Mathistad 1-35. (50 M\$)

- May 1 – Sep 15 2009
- Drill horizontal of second well through Bakken and run liner for frac. (incl above)

- June 25 – July 1 2009
- Fracture treat Bakken in second well. (Incl above + 400 M\$ for tracers and logging)

- July 1- Aug 1 2009
- Flow back Bakken completion.

- Aug 1- Sept 15 2009
- Pulse Bakken completion and monitor TFS pressures.

- Sept 15 – Nov 1 2009
- Analyze pressure data and incorporate into model.

- Nov 1 – Nov 15 2009
- Prepare report of results.

Budget

<u>Item:</u>	Budgeted Cost	Requested from <u>OGRC:</u>
Drilling and completion of new well	\$6,000M	N/C
Related to existing TFS well		
Well work	\$325 M	\$325 M
Pressure bombs and wireline services	\$75 M	\$75 M
3 mo shut-in deferred production @ \$50 wellhead pricing, gas not included Assumes rate of 200 bopd (160 net)	\$720 M	\$720 M
Flow testing of new well		
Data gathering (tracers & logging)	\$200 M	\$200 M
Supervision	\$25 M	\$25 M
Evaluation of results – Reservoir analysis	\$25 M	\$25 M
Report Writing and Travel	\$25 M	\$25 M
Total Project Cost	\$7,395 M	\$1,395 M

Tax Liability

Supplied under separate cover.

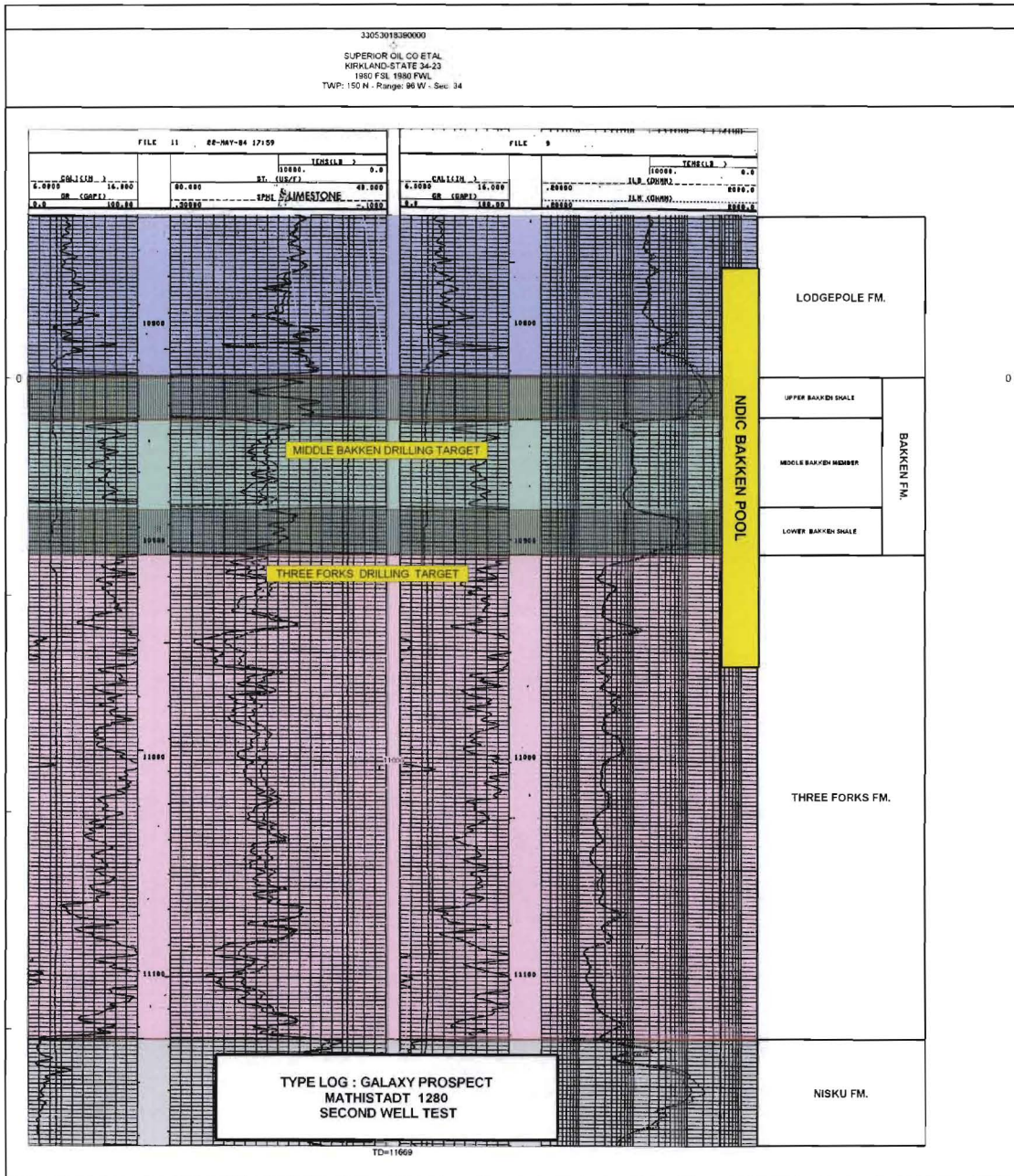
Confidential Information

A period of confidentiality is not requested.

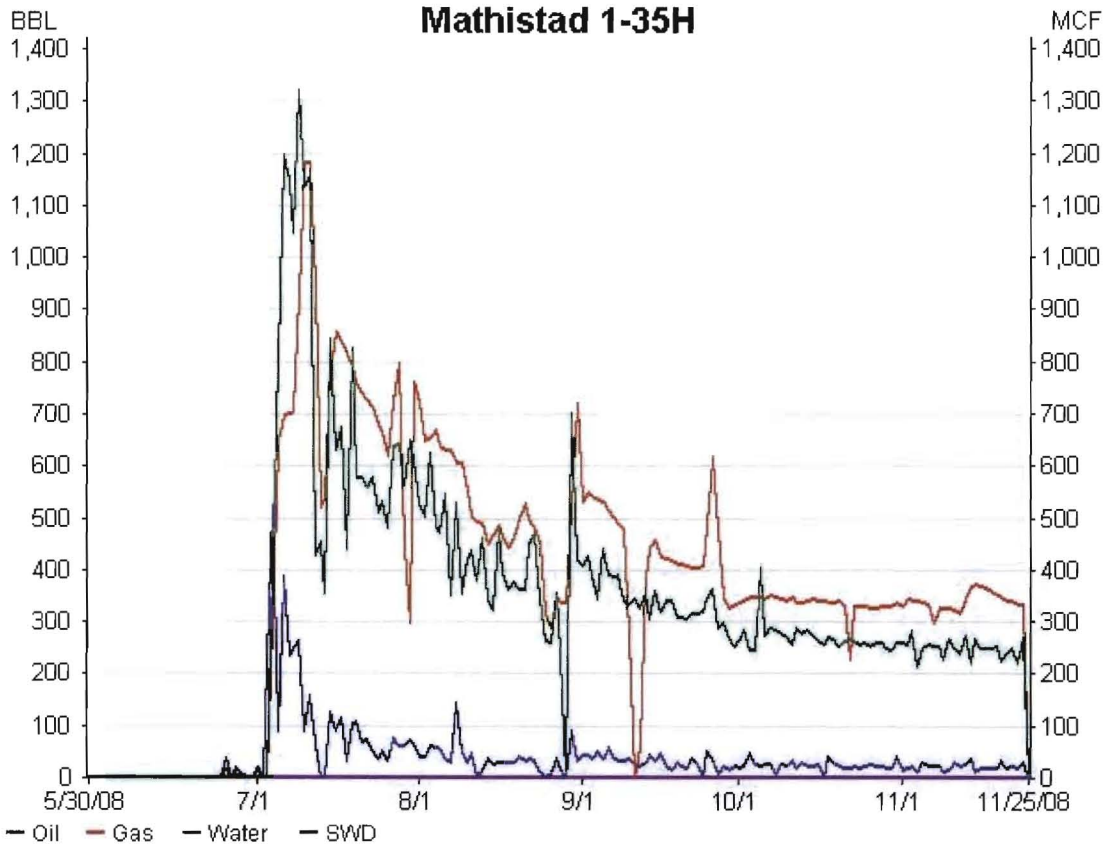
Patents and Rights

There are no patents or rights that the applicant wishes to reserve.

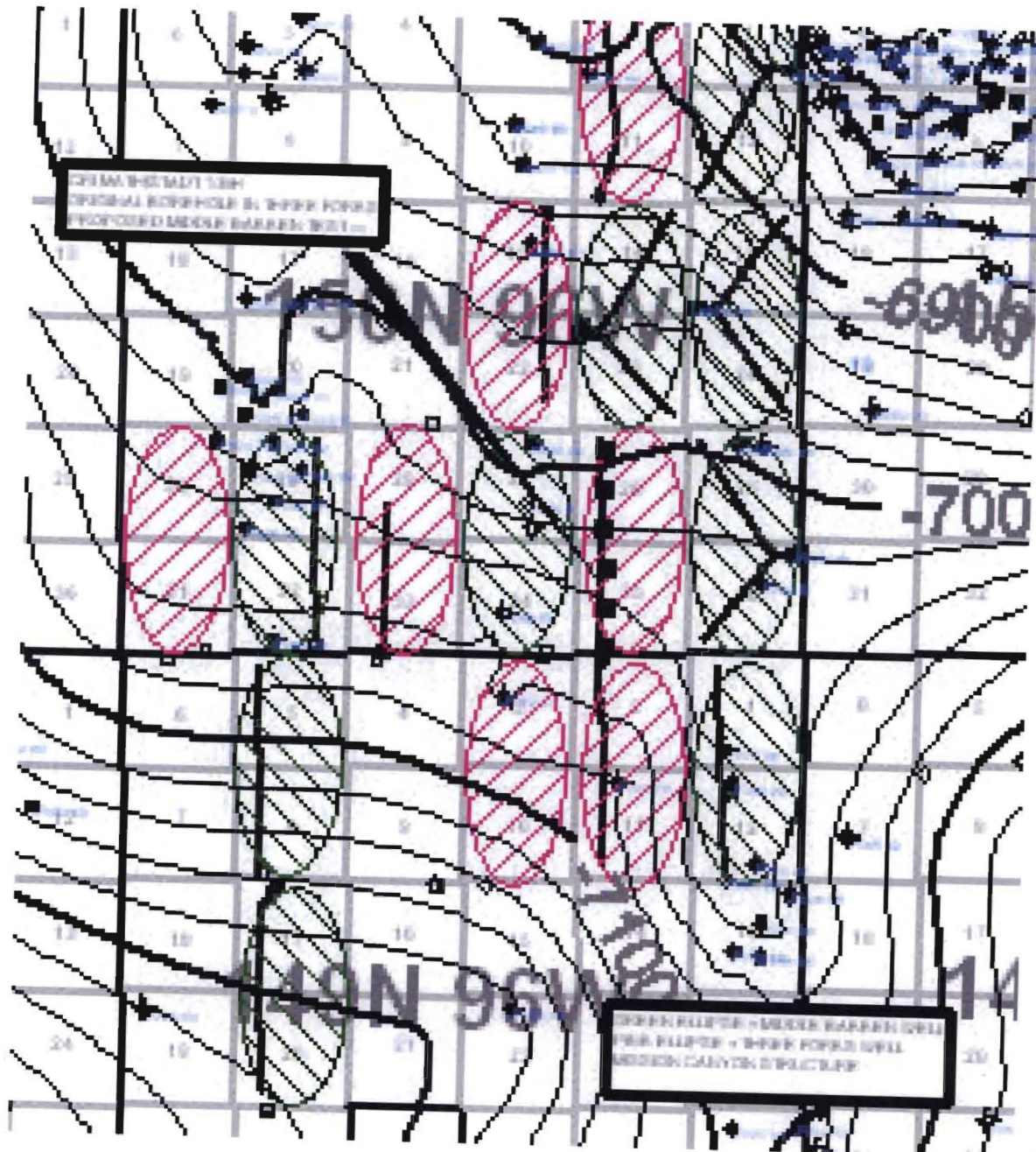
Appendix A – Type log for the Bakken and Three Forks-Sanish in the study area.



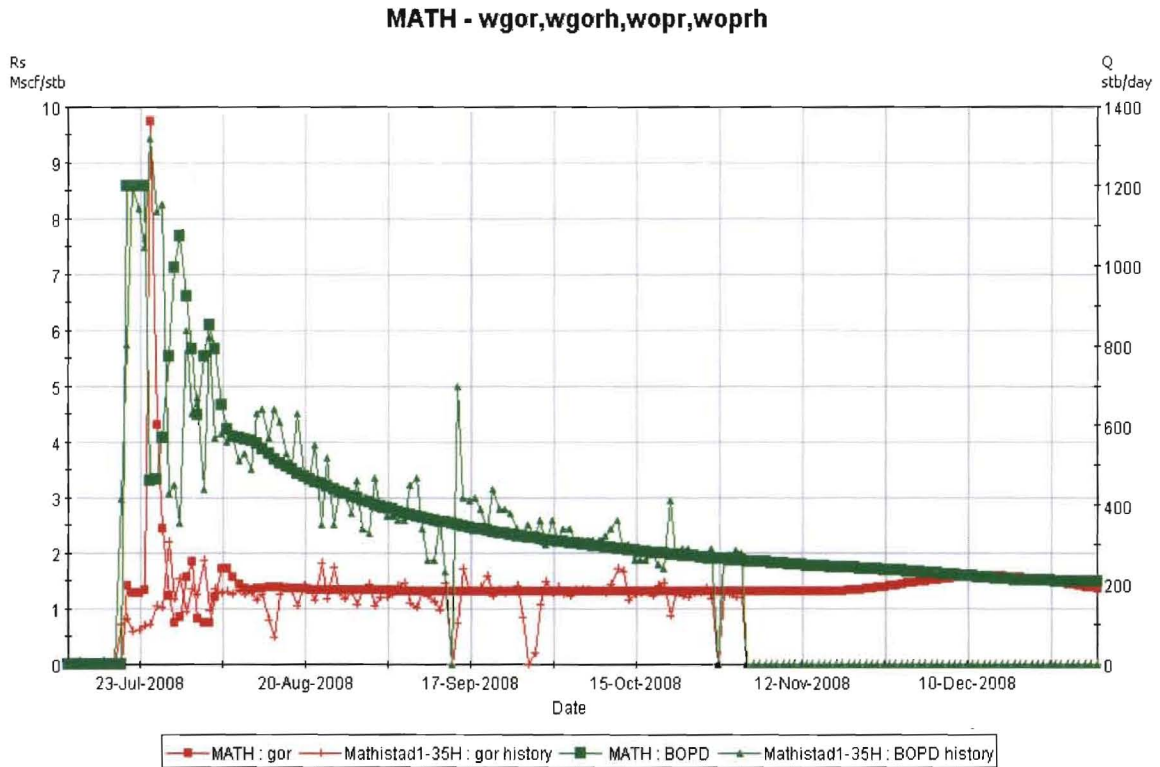
Appendix B – Production curve for the Mathistad 1-35H.



Appendix C – Map of the proposed project site.



Appendix D - Initial history match of the Mathistad 1-35H production.



Appendix D – References

Minot Daily News, October 23, 2008. “Three Forks-Sanish Formation may be as oil-rich as Bakken.” Reported by Eloise Ogden, Regional Editor.

XTO Energy press release, November 5, 2008, access on website <http://www.xtoenergy.com>, December 15, 2008.

United States Geological Survey (USGS), 2008, Assessment of undiscovered oil resources in the Devonian–Mississippian Bakken Formation, Williston Basin province, Montana and North Dakota, 2008: Fact Sheet 2008-3021, USGS, April 2008, 2 p.