



December 21, 2011

Manitoba Innovation, Energy and Mines  
Petroleum Branch  
343 Legislative Building  
450 Broadway  
Winnipeg, Manitoba  
R3C 0V8

Attention: Minister, the Honourable Dave Chomiak

Re: Application to Construct an Oil and Gas Pipeline  
Souris River Crossing  
EOG Resources Canada Inc.

---

EOG Resources Canada Inc. (EOG) is making an application under Subsection 149(2) of The Oil and Gas Act to construct a new 8 inch (219.1 mm) O.D. pipeline to transport oil, and a new 6" (168.1 mm) O.D. fuel gas line, that will transport oil and fuel gas respectively from a new EOG valve site at 04-30-01-26W1M to a second EOG valve site at 14-20-01-26W1M (Attachment 1). The section of the oil pipeline will be part of a new 8 inch Oil Sales Line that will transport oil from a new EOG Pierson Battery at 04-01-02-28W1M, to the existing EOG Oil Battery at 15-21-1-25W1M. The section of the gas pipeline will be part of a new 6 inch fuel gas line that will transport fuel gas from a the EOG Waskada Natural Gas Liquids (NGL) Plant at 16-21-01-25W1M, to a new EOG Pierson Battery at 04-01-02-28W1M.

EOG would like to bore the Souris River in the early part of 2012 during frozen conditions to avoid the potential flood conditions similar to spring and summer of 2011. Along with the 8 inch Oil Sales Line and 6 inch fuel gas line, a 4 inch (114.3 mm) raw gas line would be installed at the same time. The 4 inch gas line will be on a separate application.

Granting EOG approval to construct the portion of the pipelines between a new EOG valve site at 04-30-01-26W1M to a second EOG valve site at 14-20-01-26W1M does not pre-suppose approval of the future pipelines to connect to the river crossing to facilities.

EOG Resources, Inc. is one of the largest independent (non-integrated) oil and natural gas companies in the United States with proved reserves in the United States, Canada, Trinidad, the United Kingdom and China. EOG Resources, Inc. is listed on the New York Stock Exchange and is traded under the ticker symbol "EOG." EOG has the technical and financial qualifications to undertake this project.

### **Project Need**

EOG currently has 20 wells in the Pierson area and anticipates having approximately 50 wells producing by the end of 2012. Oil will be transported via a pipeline gathering system within the Pierson area to a

new EOG Pierson Oil Battery at 4-1-2-28W1M, where the oil would be separated from the gas and water. The battery will have an initial capacity of 5000 bbls/d, with room to expand to 10,000bbls/d. The battery will also be equipped with trucking terminals to accept trucked EOG and third party volumes. The oil would be shipped via pipeline from the Pierson Oil Battery to the 15-21-1-25W1M Oil Battery in Waskada, where it will enter the sales pipeline that terminates at a sales point in Cromer, Manitoba. The gas would flow via pipeline to the EOG NGL Facility at 16-21-1-25W1M, and the water would be disposed at a water disposal facility.

EOG expects to be producing approximately 2000 bbls/d by the end of 2012, with volumes increasing to 5000 bbls/d by the end of 2015. EOG is currently trucking all Pierson production to the 15-21-1-25W1M and 15-9-2-25W1M EOG Oil Batteries near Waskada. Trucking has significant issues, in addition to contribution to air emissions, which will be eliminated upon installation of a pipeline. Other issues related to trucking include: maintaining sufficient supply of trucks to meet up with capacity expectations; potential safety issues associated with large-truck traffic to local communities, including the use of bus routes: on-going road usage and potential impacts to highways: road ban restrictions (i.e. timing, weight and load restrictions) which impact delivery outcomes and access to Waskada. Finally, in the summer of 2011, the bridge crossing the Souris River on Highway 251 washed out, forcing trucked volumes to travel longer alternate routes from Pierson to Waskada.

There is currently no pipeline infrastructure within the Pierson area to transport oil volumes from the area. All volumes from EOG or other third parties are currently truck to other facilities. The proposed pipeline will have a capacity of 20,000 bbls/d. The pipeline design allows for consideration of third party production, which will further reduce oil-trucking on Manitoba highways. EOG estimates that installation of the proposed pipeline will eliminate current and anticipated future trucking requirements as outlined in Table 1.

**TABLE 1 – CURRENT TRUCKING REQUIREMENTS**

<b>Production</b>	<b>Number of One-Way Trips</b>	<b>Total Trips/Year</b>
1000 bbls/d	185 bbls x 6 loads per day	2,190 x 2 = 4,380
2000 bbls/d	185 bbls x 12 loads per day	4,380 x 2 = 8,760
5000 bbls/d	185 bbls x 27 loads per day	9,855 x 2 = 19,710
10000 bbls/d	185 bbls x 54 loads per day	19,710 x 2 = 39,420
20000 bbls/d	185 bbls x 108 loads per day	39,420 x 2 = 78,840

The Souris River Crossing represents a major challenge in this pipeline project. Under normal conditions, the Souris River has a width of approximately 110m at the location where the pipeline would cross the river. In the spring and summer of 2011, the river overflowed beyond the banks, and reached a width of approximately 800m. The river did not subside into the banks until September 2011, and the land approaching the river was not traversable due to soft conditions. It wasn't until late November 2011 that the land adjacent to the river was firm enough to traverse with a 1 ton pick-up truck.

Under normal river conditions, it is practical to bore the river with directional drilling equipment. This is an economic and safe practice for a bore length of approximately 110m. However, if the river breeches the banks again, the bore length could increase to over 800m. A bore of this length requires specialized equipment, greatly increases costs, and increases the risk of encountering unknown subsoil deposits.

EOG wishes to bore the Souris River crossing in early 2012 in order to avoid flooding conditions. If construction of the crossing is delayed until summer and flooding conditions exist, then the completion of the pipeline could be delayed until late December. This would prevent removing truck traffic from the highways during potentially slippery road conditions.

The 8 inch oil line, 6 inch fuel gas line and 4 inch raw gas line will be constructed concurrently in the same ditch to reduce the environmental footprint of the project. The 6" fuel gas line is part of a gas conservation project which will reduce/eliminate flaring in the Waskada area. The economics associated with the gas conservation project are very tight and rely on constructing the 6" fuel gas line at the same time as the 8" oil sales line and 4" raw gas line. If the river crossing has to be performed under flood conditions when the river is potentially 800m wide, then the added expense of the longer bore make the gas conservation project economically unfeasible. For this reason, EOG requests that permission to construct the Souris River Portion of the 8" Oil Sales Line and 6" fuel gas line be granted so that EOG can construct the two lines, along with the 4" raw gas line, in winter 2012.

### **Route Selection**

Routing of the proposed pipeline was influenced by EOG's desire to avoid areas of high environmental sensitivity, minimize the amount of new land disturbance and maximize operational efficiency.

The following routing factors were considered in during route selection:

- Modify the route to accommodate input from landowners, the public and regulatory agencies, where practical;
- Minimize crossings of wetlands, lakes and sloughs;
- Avoid, where practical, farm buildings, farmsteads, well sites, aquifer recharge areas and shelterbelts;
- Minimize the amount of steep terrain, side hill and unstable terrain;
- Parallel existing pipelines, existing rights-of-ways or other linear developments (e.g. roads, abandoned railroad);
- Minimize crossings of native prairie;
- Avoid, where possible, environmentally sensitive areas such as difficult river or creek crossings, critical wildlife areas, natural areas, parks, archaeological or historical sites;
- Avoid, where practical, special land use areas;
- Cross windbreaks and shelterbelts, to the extent possible, at right angles to minimize the width of the right-of-way to that necessary for the trench line and vehicle traffic;
- Cross roads and rail lines at or near right angles; and
- Minimize pipeline length in order to minimize potential disturbance and cost.

The proposed pipeline route is located entirely on privately-owned land. No Crown or First Nations lands will be crossed by the proposed route.

The proposed route does not traverse any existing or currently proposed ecological reserves or wildlife management areas where there are restrictions on energy development. The proposed pipeline route does not encounter any lands under Parks Canada jurisdiction, proposed or existing provincial parks, Ecological Reserves, Provincial Forests, recreation areas or Special Conservation Areas.

The proposed river crossing route has been surveyed and agreements have been signed with land owners and occupants for both the pipeline right-of-way and the valve sites at either ends of the section.

### Plan Requirements

The following survey plans and diagrams are provided in Attachment 1 and are included on the enclosed flash drive:

- 1 - A survey of the location of the pipeline in its entirety and the land descriptions necessary to properly locate the pipeline. The survey also includes the location of the tie-ins to the valve sites; any city, town, village, railways, highway or water-covered area within the general area through which the pipeline passes;
- 2 - The location of valves used for isolating and sectionalizing the pipeline (Table 2, Attachment 1).

**TABLE 2 – PIPELINE VALVE TYPES AND LOCATIONS**

Legal Location	Valve Type
04-30-01-26W1M	ESD Station
14-20-01-26W1M	Check Valve

- 3 - Summary of road, stream, highway, waterway, flowline and pipeline crossings is included in Attachment 2. Also included are the details on crossing agreement status. Typical profiles for each type of crossing showing burial depth of the pipeline are included in Attachment 3.

### Project Specifications

Tables 3 and 4 provide technical specifications of the proposed pipelines. The oil pipeline will transport oil as per the attached oil analysis (Attachment 4). The pipeline is designed for a maximum flow rate of 20,000 bbls/d. The pipeline will be built to sour specifications and will comply with all applicable CSA Standards. The fuel gas line will be designed for a maximum flow rate of 20MMCF/D. The pipeline will comply with all applicable CSA Standards. All materials associated with the pipelines such as valves and fittings will comply with the ANSI 600 Standard. Pipe wall thicknesses are increased under road and rivers bores for an added measure of safety. An oil pump will be required at the new Pierson Battery at 4-1-2-28W1M, which will be addressed in a separate battery application to Manitoba, Innovation, Energy and Mines.

**TABLE 3 - TECHNICAL SPECIFICATIONS – PROPOSED PIERSON PIPELINES**

ID No.	OUTSIDE DIAMETER (mm)	WALL THICKNESS (mm)	XING TYPE	MATERIAL	TYPE	GRADE	MOP (kPa)	STRESS LEVEL	JOINTS
1	219.1	4.8	N/A	STEEL	Z245.1	359	9928	80	WELDED
2	219.1	5.6	River	STEEL	Z245.1	359	9928	60	WELDED
3	168.3	4.8	N/A	STEEL	Z245.1	359	9928	80	WELDED
4	168.3	5.6	River	STEEL	Z245.1	359	9928	60	WELDED

**TABLE 4 – PIPELINE SEGMENT LOCATIONS**

Line No.	FROM LOCATION				M	TO LOCATION				M	LENGTH (m)	ID NO.
	LSD	SEC	TWP	RGE		LSD	SEC	TWP	RGE			
1	4	30	1	26	W1	2	30	1	26	W1	765	1
2	2	30	1	26	W1	15	19	1	26	W1	250	2
3	15	19	1	26	W1	14	20	1	26	W1	1398	1
4	4	30	1	26	W1	2	30	1	26	W1	765	3
5	2	30	1	26	W1	15	19	1	26	W1	250	4
6	15	19	1	26	W1	14	20	1	26	W1	1398	3

EOG proposes to bore all highways, railways, and other pipelines/flow lines crossed. EOG proposes to high-pressure drill all watercourse crossings to avoid potential environmental sensitivities associated with these features.

A complete summary and status of crossing agreements for all the pipeline crossings is included in Attachment 5.

The Pierson to Waskada pipeline will include design features for corrosion control, spill prevention, leak detection and emergency shutdown. Two forms of protection from external corrosion will be utilized: the pipeline will be protected with yellow jacket coating and the pipeline will be cathodically protected. Internal corrosion protection will be accomplished through chemical inhibition.

The wall thickness of the pipe will be monitored through periodic line logs. A leak detection system will be installed on the pipeline which will continuously material balance the flow between the EOG Pierson Battery, the two EOG Waskada Batteries and the Tundra Terminal. Should discrepancies be identified on material balance, pumps will automatically shut down and the Emergency Shut Down Valves (ESD) will operate. The leak detection system will comply with Annex E: *Recommended practice for liquid hydrocarbon pipeline system leak detection* of the CSA Z662-11 Standard.

No emission releases are anticipated as there are no proposed emission-generating facilities along this portion of the pipeline. Therefore, EOG does not propose to undertake air dispersion modelling for the project.

Environmental protection measures are included in an Environmental Assessment Report that will be submitted to Manitoba Conservation for this project, as per section 104(1) of the Drilling and Production Regulations.

The installation and operation of the pipeline will be covered by the Corporate Emergency Response Plan (Attachment 6).

## Consultation

A record of public engagement is provided in Attachment 7. This includes a list of landowners and occupants notified to date within these areas:

- a) a radius of 0.5 km along the length of the pipeline

Also included in Attachment 7 is a copy of the notification package provided to each landowner.

EOG's public consultation program also included an open house which was held in the local community of Lyleton on November 3, 2011, to ensure potential stakeholders were consulted. Attendee sign-in lists and feedback forms from attendees are provided in Attachment 8.

An Environmental Assessment report will be submitted to Manitoba Conservation for this project. Any environmental concerns or issues are listed and will be addressed through the development of mitigative measures listed within the Environmental Assessment report.

EOG will continue to work with government agencies and stakeholders to identify and address environmental issues and concerns with the objective of resolving these issues and concerns in a manner that meets the interests of all parties.

We trust this information satisfies your requirements for the pipeline application. Further information or clarification on included items is available upon request.

Regards,



Kevin Marshall, E.I.T., Project Engineer

- Attachments:
- 1) PLANS
  - 2) PIPELINE CROSSINGS LIST
  - 3) PIPELINE CROSSING PROFILES
  - 4) OIL ANALYSIS
  - 5) CROSSING AGREEMENTS
  - 6) EOG EMERGENCY RESPONSE PLAN
  - 7) PUBLIC CONSULTATION

