



PIPELINE APPLICATION

Pierson Area

Crude Oil Pipeline

From 09-32-001-28-W1M

To 14-36-001-28-W1M

Manitoba Innovation, Energy & Mines

Petroleum Branch

Submitted: January 8, 2013

TABLE OF CONTENTS

1. Introduction
 2. Applicant Information
 - 2.1. Technical Qualifications
 - 2.2. Financial Qualifications
 3. Pipeline Need/Intended Use
 4. General Project Description
 - 4.1. Design Specifications
 - 4.2. Safety Systems
 - 4.3. Corrosion Mitigation
 - 4.4. Construction
 - 4.5. Specifications of Vessels
 - 4.6. Air Dispersion Model
 5. Consultations with Landowners and Occupants
 6. Environmental
 - 6.1. Environmental Protection Plan
 - 6.2. Emergency Response Plan (ERP)
 7. Aboriginal Consultation Assessment
 8. Other Approvals
 - 8.1. Municipalities
 - 8.2. Urban Municipalities
 - 8.3. Historic Research Branch
 - 8.4. Manitoba Infrastructure and Transportation
 - 8.5. Railway Crossings
 - 8.6. Water Crossings
 - 8.7. Utility or Right of Way Crossings
 - 8.8. Surface Land Owners
-

LISTS OF APPENDICES

Appendix A Survey Plans

- Pipeline Right of Way
- Typical Crossing Details

Appendix B Drawings/Specifications

- Plot Plan
- Process Flow Diagram
- Piping & Instrumentation Diagrams
- CSA Piping Specifications

Appendix C Proof of Consultation & Access

Appendix D Environmental Assessment & Environmental Protection Plan

Appendix E Initial Aboriginal Consultation Assessment

Appendix F Other Consultations

1. Introduction

Under Section 149 (2) of the Oil and Gas Act, Legacy Oil & Gas Inc. (LEG) is proposing to build, own and operate a Crude Oil pipeline in the Pierson Area of Manitoba. The location of the pipeline is:

- From LEG's 09-32-001-28-W1M Battery to EOG's 14-36-001-28-W1M Crude Oil Riser. This will be a 114 mm OD (4") Crude Oil Pipeline.

This application is being submitted to the Petroleum Branch - Manitoba Innovation, Energy and Mines for approval of a pipeline construction permit.

The following is contained in Appendix A:

- A copy of the complete Survey Construction Plan
- Diagrams for all crossings (pipelines, roads, utilities,...) and Typical Crossing Details
- Individual Ownership Plans for all segments of the Pipeline ROW

The Electronic Shape Files for the pipeline ROW will be sent via email.

2. Applicant Information

LEG is a publically traded Oil & Gas exploration company established in 2009, with significant assets in British Columbia, Alberta, Saskatchewan, Manitoba and North Dakota. LEG's current production is 17,500 boe/day.

2.1 Technical Qualifications

LEG currently operates and maintains over 1,000 wellsites and over 2,000 kilometres of pipeline infrastructure. LEG has recently developed it's Pierson properties and has constructed over 25 kilometres of pipeline and 40 wellsites in the past two years. LEG has shown the capability and expertise to construct, operate and maintain all types of pipelines.

2.2 Financial Qualifications

LEG has a Market Capitalization of \$1.1 Billion and has a projected 2013 Capital budget of \$300 Million. LEG has the financial capabilities of funding this project.

3. Pipeline Need & Intended Use

LEG currently has a multi-well Oil Battery/Facility at 09-32-001-28-W1M. All of the oil production is stored in tanks and is trucked out to the Enbridge Cromer Terminal on a daily basis. At 2500 bbl/day of oil production, there are between 10 and 15 Loading Trucks entering/leaving the facility daily.

The oil pipeline is required to eliminate the need for trucking to the facility on a daily basis. The benefits of the pipeline will include:

- Reduced total truck traffic on the local roadways
- Reduced truck traffic during school hours
- Reduced damage to local roadways
- Reduced operating costs.

When the oil is connected to EOG's pipeline at 14-36-001-28-W1M, the oil will be sent to EOG's existing Battery at 15-21-001-25-W1M where it will be pipelined to Enbridge's Cromer Terminal.

4. General Project Description

The proposed pipeline Right-of-Way, will start from the Legacy's 09-32-001-28-W1M Battery and head north until the SW-04-002-28-W1M. The pipeline then heads east across Sections 4, 3, 2 & 1(001-28-W1M), until the pipeline will terminate at EOG's Riser Site at 14-36-001-28-W1M. The total pipeline length is 7.03 km. This route has been chosen as the most efficient route based on landowner concerns and input.

4.1 Design Specifications

The pipeline will be constructed as per the requirements in CSA Z662-11 and to Westview Engineering's 900 ANSI Piping Class for CSA Piping.

Substance	H ₂ S (mol/kmol)	O.D, (mm)	W.T. (mm)	Material	Type	Grade	External Coating	MOP (kPa)	Test (kPa)
Crude Oil	0.0	114.3	4.8	Steel	Z245.1, SS	359 Cat II	YJ1	14,890	20,846

The wall thickness of the buried pipe is above the minimum requirements of CSA-Z662 and will be suitable for all general purpose and highway crossings. The additional wall thickness will help ensure the integrity of the pipeline, as the additional material will provide additional corrosion allowance.

Although the pipeline will carry Sweet Crude Oil, the pipeline will be built to sour specifications (100% X-Ray, 1.4 times for the pressure test). By building to the higher specification, this will help ensure the pipeline's integrity at the lower operating conditions.

Appendix B contains the following information:

- Plot Plan of the Legacy 09-32-001-28-W1M Battery
- Piping Specifications for the pipeline and surface piping
- PID Drawings of the proposed pipeline and tie in.

4.2 Safety & Monitoring Systems

The Crude Oil Pipeline will be connected to EOG's SCADA Monitoring system and will be incorporated as part of EOG's Leak Detection/Material Balance System.

A LACT unit will be installed at Legacy's 09-32-001-28-W1M Battery, where the flow data (pressures, volumes,...) will be sent to EOG's SCADA Host. The new inlet volumes will be compared against EOG's metered volumes to determine if a pipeline leak is present.

Automated ESD valves will be installed at the beginning (09-32) and end (14-36) of the pipeline system. The ESD valves can be controlled by either Legacy or EOG in the event of an emergency. The ESD valves will also be connected to a High/Low Pressure Switch that will close the ESD valve in the unlikely event of a leak or an overpressure situation.

4.3 Corrosion Mitigation

The pipeline will be externally coated with Yellow Jacket 1 and connected to Cathodic Protection System to prevent external corrosion.

Prior to commissioning, a chemical inhibition sample will be sent through the pipeline to provide an internal layer of corrosion protection. The pipeline will be monitored on a regular basis and chemical corrosion will be applied as needed. Pig sender/receiver will be installed on the pipeline ends to allow regular pigging of the pipeline.

4.4 Construction/Installation Requirements

At the Legacy 09-32-001-28-W1M Facility, the following will be installed in association with this new pipeline.

- LACT Unit for measuring the volumes being sent to EOG's facility.
- ESD Valve with remote shutdown and Hi/Low Pressure Switch.
- 168 mm Pig Sender
- A minimum depth of cover of 2.0 m for any pipeline segment located on lease.

For the entire length of the pipeline, the following items will be implemented.

- The minimum depth of cover will be 1.5 m.
- All pipeline/utility crossings will be hydro-vac'd and hand exposed. Third party representatives will be present during the hydro-vac'ing and crossings.

At the EOG 14-36-001-28-W1M Riser, the following will be installed with this new pipeline.

- ESD Valve with remote shutdown and Hi/Low Pressure Switch
- 168 mm Pig Receiver

4.5 Pressure Testing/Non-Destructive Examination

The process conditions are as follows:

Substance	Flow Rate (m ³ /d)	Expected Flowing Pressure (kPa)	MOP (kPa)	Test Pressure (kPa)
Crude Oil	600	6,895	14,890	20,846

The Pressure Testing will be done a 1.4 Times the rated MOP of the pipeline. The testing medium will be a 50/50 Water/Methanol mixture. The pipeline will be tested for a minimum of 8 hours. After the testing is completed, a pig will be launched to de-water the pipeline, prior to the chemical inhibition batch being sent.

The welded pipeline will be 100% X-Rayed to ensure all welded joints are suitable for service.

4.6 Specification of Vessels

- No Pressure Vessels are Associated with this Pipeline.

4.7 Air Dispersion Model

- No Air Dispersion Modeling was performed as there are no continuous venting sources associated with this project.

5. Proof of Consultation

As per Manitoba Petroleum Guideline #1, Notification and Consultation of all landowners and occupants directly affected by the proposed pipeline have been completed. All landowners and occupants were contacted directly and approval for the pipeline route and access to the pipeline ROW were received.

Notifications for all landowners and occupants within the following distances were completed:

- 1.5 km radius of the end points of the pipeline
- 0.5 km radius along the length of the proposed pipeline

To date, no issues/concerns have been received by any landowners/occupants from the above notification radius. If any issues/concerns are received, they will be forwarded to the Manitoba Petroleum Branch.

The following information has been included in Appendix C:

- Names, Addresses & Contact Numbers for all landowners and occupants within the above radius's
- A summary of any concerns raised during the consultation process.
- A summary of any actions taken or proposed to be taken by Legacy to address any concerns.

The proof of entry and signed ROW agreements are to be included in Appendix C, but due to confidentiality agreements, they will be sent under separate cover and not included in the paper copy of this application.

6. Environmental Approvals

6.1 Environmental Protection Plan

An Environmental Desktop Screening was performed by Golder Associates (Appendix D) on Nov 7, 2012. The results of the Desktop Screening indicate the Environmental impact is low based on the timing of the construction and that the pipeline ROW is in previously cultivated lands.

An email, with backup documentation, was sent to Elise Dagdick, Environmental Approvals Branch, to determine if an Environmental License was required. A response was received from Elise Dagdick, stating that an Environmental License was not required.

Based on the above evaluations, Legacy has not prepared an Environmental Protection Plan, as the risk to the Environment has been deemed low.

6.2 Emergency Response Plan

Legacy has an active Corporate Level Emergency Response Plan (ERP), which is intended to handle any emergency situations that may arise. Legacy's Emergency Contact Number is 1-877-445-2647, which is attended 24 hours a day, 7 days a week.

The ERP will be amended to include the new proposed pipeline.

7. Aboriginal Consultation Assessment

As per Section 149 (2), an Initial Aboriginal Consultation Assessment is required under the Oil & Gas Act.

The Initial Aboriginal Consultation Assessment was sent to Keith Lowdon for approval. A copy of the application is included in Appendix E.

8. Other Approvals

8.1 Municipalities

The R.M. of Edward has been consulted on this project. Audrey Bird, CAO, Rural Municipality of Edward was consulted and she did not have any issues with this project. The crossing agreements for each of the local RM Roads are currently being obtained and will be in place prior to construction.

8.2 Urban Municipality

The pipeline is not located within 1.5 km of an urban municipality.

8.3 Historic Research Branch

The Manitoba Historic Resources Branch has indicated that there are previously registered Historic Site in the area of this pipeline. As per the Historic Research Branch's request, a certified Archaeologist will be present during the Ground Disturbance portion of construction to ensure that no Historic Sites/Areas of Interest are encountered.

If a Historic Site/Area of Interest is encountered, the construction will stop until the Archaeologist has cleared the site.

A copy of the letter from is included in Appendix F.

8.4 Manitoba Infrastructure & Transportation

There are no Manitoba Infrastructure & Transportation crossings associated with this project.

8.5 Railway Crossings

There are no railway crossings associated with this project.

8.6 Water Crossings

There are no water crossings associated with this project.

8.7 Utility or Right of Way Crossings

All utility and 3rd Party Pipeline Crossings have been notified and applied for. All approved crossing agreements will be in place prior to construction.

8.8 Surface Land Owners

All surface land owners have been contacted and all agreements have been obtained.
