

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

APPLICATION FOR A WELL LICENCE
PRIMROSE DRILLING VENTURES LTD.
97-9
STETTLER FIELD

Decision Report D

Application No. 970276

I INTRODUCTION

1.1 Application and Intervention

On 25 March 1997, Primrose Drilling Ventures Ltd. (Primrose) applied to the Alberta Energy and Utilities Board (EUB) for a well licence to re-enter an abandoned well bore located at Legal Subdivision 16 of Section 18, Township 38, Range 20, West of the 4th Meridian. The well is located within the boundaries of an existing oilfield waste disposal facility operated by Anadime Processing and Disposal Inc. (Anadime). The purpose of the re-entry would be to obtain gas production from the Upper Mannville Formation.

An objection to the application was filed with the EUB on 2 April 1997 by Anadime. Its objection was based on potential negative impacts on its business, safety concerns and potential accidents involving its staff and customers arising from the proposed Primrose activities at the well location.

1.2 Hearing

A public hearing of the application was convened at the head office of the EUB on 16 July 1997 before Board Chair C. Belanger and Acting Board Members F. Rahnama, Ph.D and K. G. Sharp, P.Eng. (the Board). On the day of the hearing and prior to the opening of the hearing, Anadime and Primrose requested a short adjournment of the hearing. The two parties indicated that they were in negotiations in an attempt to reach agreement on issues between them. The Board granted the adjournment and the hearing was opened at 1:00 p.m. on the 16th July 1997. Those who appeared at the hearing are listed in the following table:

THOSE WHO APPEARED AT THE HEARING

Principals and Representatives (Abbreviations Used in Report)

Primrose Drilling Ventures Ltd. (Primrose)

Anadime Processing and Disposal Inc. (Anadime)
L. Clarke, Esq.

Alberta Energy and Utilities Board staff
C. S. Richardson, C.E.T.
D. Brezina, LLB.

Witnesses

B.R. Hanson, P. Eng.
T. Cruickshank, P.Geol.

N. Hollman, P. Eng.

Upon opening the hearing, Anadime and Primrose stated in their preliminary remarks that an agreement was reached between the parties regarding the re-entry and production operations of the well. Anadime therefore had withdrawn its objections to the proposed re-entry and to the approval of the application by the EUB. Primrose stated that it would speak to its application and answer any questions the Board, Board staff or any intervener may have. Anadime stated that it wished to make a brief statement to the Board. The hearing therefore proceeded to provide the opportunity to Primrose to present its application and for examination by interveners and the Board.

2 BACKGROUND

The existing 16-18-38-20 W4M well (the 16-18 well) was drilled in 1958 and produced oil until 1994. In 1994 the well was abandoned by the licensee, Encal Energy Ltd. (Encal). Anadime assumed the surface lease for the 16-18 well and subsequently built an oilfield waste disposal facility at the location in 1994.

3 ISSUES

The Board finds the issues with respect to the proposed re-entry to be:

- the need to re-enter the 16-18 well,
- the safety of the re-entry and production operations at the site,
- the setback restrictions and equipment spacing requirements for the well.

4 NEED TO RE-ENTER THE 16-18 WELL

4.1 Views of the Applicant

In its application, Primrose described that it had obtained the rights to the minerals underlying Section 18-38-20 W4M (section 18) for the purpose of producing gas from the Upper Mannville Formation. It also stated that as the 16-18 well was abandoned and the current licensee of the well, Encal, did not hold any further mineral rights in section 18, it had the right to re-enter the wellbore and did not require approval from Encal. Primrose cited gas recoveries from other Upper Mannville gas wells in the area ranging from 12.8 million cubic metres to 530 million cubic metres as evidence that there may be reserves of gas that were not exploited at the 16-18 well. It wished to prove up its geologic interpretation and its estimate on recoverable reserves from the 16-18 well. It further stated that if the re-entry is successful, royalties would be payable to the Province of Alberta through production of the gas from the 16-18 well.

4.2 Views of the Intervener

Anadime did not present any evidence regarding the need to re-enter the 16-18 well, Primrose's geologic interpretation of the area, or the rights of Primrose to re-enter the wellbore and produce the minerals.

4.3 Views of the Board

The Board accepts that Primrose has the rights to the minerals that may underlie section 18 and accepts that Primrose may re-enter the abandoned wellbore without consent from Encal. The Board notes that Anadime did not question Primrose's rights or the need to re-enter the 16-18 well and that it did not present any alternative geologic interpretation or argument. The Board is satisfied that provided the re-entry operations at the 16-18 well could be accomplished in a safe manner and in accordance with all applicable regulations, there is a need to allow Primrose to attempt to determine the existence of by-passed reserves at this location.

5 SAFETY OF RE-ENTRY AND PRODUCTION OPERATIONS

5.1 Views of the Applicant

Primrose acknowledged that the re-entry and subsequent operation of the 16-18 well may pose potential safety hazards to Anadime personnel and possibly the public if it proceeded simultaneously with Anadime activities at the lease. It agreed that re-entry operations could conflict with the large number of tanker trucks that utilize the Anadime facility on a daily basis. Primrose stated that as part of its agreement with Anadime, the Anadime facility would be shut down for the duration of the re-entry and completion operations at the 16-18 well. Tanker truck traffic to the Anadime facility would cease during the re-entry and completion operations. Primrose stated that this agreed-upon solution would minimize any potential hazards to the public and to Anadime personnel at the facility. Primrose would also work closely with Anadime to coordinate all current and future activities such that conflicts between the two operations would be minimized. The agreement between Primrose and Anadime also allowed for compensation for impacts from the re-entry and subsequent operations at the 16-18 well and a dispute resolution procedure.

5.2 Views of the Intervener

Anadime stated that it would shut down its facilities and would not receive any tanker truck traffic for the duration of the re-entry and completion of the 16-18 well. It believed that as a result of its agreement with Primrose, the operations at the well could proceed with minimal risk to its on-site personnel and the public.

5.3 Views of the Board

The Board notes that Primrose and Anadime reached an agreement that addresses Anadime's concerns for the safety of its personnel and the public. The Board agrees that shutting down the Anadime facility for the re-entry operation and completion of the 16-18 well is a prudent and necessary measure to ensure safety and minimal interference between the two operations. Without this agreement, the Board seriously doubts that the re-entry operations could have been conducted in a safe manner. Further, the Board would expect Primrose to adhere to all applicable EUB safety regulations for service rig drilling operations. This would include, but is not limited to the following:

- installing a class III servicing blowout prevention stack,
- maintaining in a readily accessible location a full opening drill string safety valve and inside blowout preventer, both of which can be stripped into the well,
- installing a pit volume totalizer or similar system to provide warning of a change of fluid level in the mud tank or of an imbalance in fluids entering or leaving the well. Alternatively, the mud tank must be continuously manned,
- the driller must be in possession of a valid First Line Supervisors Blowout Prevention or Well Service Blowout Prevention Certificate and at least one additional person who has a valid PITS Second Line or Well Service Blowout Prevention Certificate shall be readily available at the proposed well.

The Board notes that Primrose committed to retain experienced and, where necessary, certified personnel for the re-entry and completions operations at the 16-18 well. The Board also expects that Primrose will have regard for the safety regulations administered by Alberta Occupational Health and Safety for service rig operations.

6 SETBACK AND EQUIPMENT SPACING REQUIREMENTS

6.1 Views of the Applicant

Primrose submitted that there would be flexibility in locating certain elements of the service rig equipment in order to meet required equipment spacing and setbacks from the Anadime facilities. It stated that the oil meter building located approximately 3 metres east of the wellbore is classified as Class 1, Division 1, under regulations administered by Alberta Labour, Electrical Protection Branch and as such did not require a minimum separation distance from a wellhead. It stated that there is no flame type or unprotected electrical equipment in the meter building. Also, operations at the meter building would be shut down during re-entry and completion operations as part of its agreement with Anadime.

Primrose further explained that the tanks located less than 50 metres to the west of the wellbore do not contain production fluids and so would not be subject to the minimum 50 metre setback distance to the 16-18 well as set out in section 8.090 (3) of the Oil and Gas Conservation Regulations (the regulations). The tanks receive produced water from other oilfield operations in the area and although the water may contain oily sludge, there is no associated gas in the water. The tanks typically do not contain flammable substances and thus would not be classified as production tanks.

Primrose acknowledged section 2.110 (1) of the regulations that calls for a minimum 100 metre separation distance from a proposed well to a surface improvement. It agreed that the Anadime facility is a surface improvement but also noted that the regulations allow for relaxation of the 100 metre separation in special circumstances. It believed the special circumstances in this case to be the economic restrictions and geologic risks associated with directional drilling to its bottom-hole target from a surface location adjacent to the Anadime lease.

Primrose stated that the cost to re-enter and complete the 16-18 well would be approximately \$75,000 whereas the cost to directionally drill with a conventional rig from a 100 metre off-set location would be in the order of \$250,000 plus an additional \$60,000 for completion of the well. It argued that increased risk would be associated with a new directional wellbore as the zone of interest is a channel sand that is difficult to delineate on seismic and also shows rapid lateral facies variation in other wells in the area. It cited the situation at the 100/6-19-38-20 W4M well that encountered approximately 10 metres of porous sandstone channel whereas the 102/6-19-38-20 W4M well located 220 metres away showed the same channel to be shaled out. Primrose was concerned that a directional wellbore, even in close proximity to the 16-18 wellbore, may shale out. Primrose stated that if the Board decided against its application to reenter the existing wellbore, it would not drill the well directionally because of the increased risk and cost. It believed that the re-entry of the existing wellbore represents its best choice for a quality reservoir in the target zone.

6.2 Views of the Intervener

Anadime did not express concern for the service rig equipment spacing. It believed that flexibility existed for the layout of the service rig equipment. It agreed that its facility is similar to a multiple-well oilfield battery where service rig operations take place routinely. However, Anadime wished the Board to note that most oilfield batteries do not receive the large volume of truck traffic its facility receives nor are most batteries staffed 24 hours per day. In this regard, it felt that the only way for the re-entry to proceed would be for the Anadime facility to shut in during the re-entry and completion operations.

It believed that the regulation for a 100 metre separation distance could be relaxed in this case because its facility would be shut down and, as owner of the surface improvement, it no longer objected to the re-entry operations.

6.3 Views of the Board

The Boards' primary concern with the re-entry of the 16-18 well is for public safety and the safety of Anadime and Primrose personnel on the lease. The Board notes the intent of equipment spacing and setback distances as set out in the regulations are to provide for unhindered operation of safety equipment and appropriate separation distances between energy developments and other surface land uses. The Board agrees with Anadime that, although the Anadime facility is very similar to other oilfield sites where service rig operations take place routinely and which occur less than 100 metres from surface improvements (such as oil batteries), the Anadime facility is unique in that there are a large number of tanker trucks and staff at the location on a 24 hour per day basis. In this regard, if the re-entry was to proceed, Primrose would need to ensure that its activities do not compromise public or worker safety.

The Board notes that flexibility exists in spotting service rig equipment on a lease and that if necessary, some of this equipment, such as the rig tank, production tanks and flare, can be located off lease. The Board believes that this flexibility would allow Primrose to set up the service rig equipment for the re-entry operations so that it complies with all applicable equipment spacing requirements for service rig operations.

The Board acknowledges the close proximity of certain Anadime equipment in relation to the existing wellbore. The Board would be concerned for any Anadime equipment that is either flame type, oil storage or a source of ignitable vapour and which is within the minimum setback distance for that type of equipment from a well. The Board heard much discussion about the oil meter building and storage tanks on the Anadime lease that are within 50 metres of the wellbore. The Board notes that the tanks are for water storage and are vented to flare and that the equipment in the oil meter building is both explosion proof and does not contain exposed flame. In addition, these facilities would be shut in during the re-entry and completion operations. Therefore the Board is satisfied that the proximity of the storage tanks and oil meter building to the wellbore does not present an undue hazard during either re-entry operations or production operations such that the re-entry operation should not be approved.

7 DECISION

The Board has carefully considered the subject application, the evidence presented at the hearing and the safety and spacing requirements relating to the re-entry of the 16-18 well. The Board is satisfied that the re-entry and subsequent production of the 16-18 well can be accomplished in a safe manner in accordance with applicable regulations and could identify additional reserves of gas. Therefore, Application Number 970276 is approved and a well licence will be issued in due course.

DATED at Calgary, Alberta on 29 July 1997.

ALBERTA ENERGY AND UTILITIES BOARD

C. Belanger, Chair

K. G. Sharp, P.Eng.

F. Rahnama. PhD.