



Talisman Energy Inc.

Application for a Well Licence
Sinclair Field

September 15, 2005

ALBERTA ENERGY AND UTILITIES BOARD

Decision 2005-104: Talisman Energy Inc., Application for a Well Licence, Sinclair Field

September 15, 2005

Published by

Alberta Energy and Utilities Board
640 – 5 Avenue SW
Calgary, Alberta
T2P 3G4

Telephone: (403) 297-8311
Fax: (403) 297-7040
E-mail: eub.info_services@eub.gov.ab.ca
Web site: www.eub.gov.ab.ca

CONTENTS

1	Decision	1
2	Introduction.....	1
2.1	Application	1
2.2	Intervention.....	1
2.3	Hearing	1
3	Issues.....	2
4	Need for the Well and Location.....	2
4.1	Views of the Applicant.....	2
4.2	Views of the Interveners.....	2
4.3	Views of the Board.....	3
5	Public Safety and Environmental Impacts.....	3
5.1	Views of the Applicant.....	3
5.2	Views of the Interveners.....	5
5.3	Views of the Board.....	6
6	Disclosure and Consultation	7
6.1	Views of the Applicant.....	7
6.2	Views of the Interveners.....	8
6.3	Views of the Board.....	8
7	Conclusion	9
Appendices		
1 ..	Hearing Participants.....	10
2 ..	Summary of Commitments	11
Area Map		12

ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

**TALISMAN ENERGY INC.
APPLICATION FOR A WELL LICENCE
SINCLAIR FIELD**

**Decision 2005-104
Application No. 1367267**

1 DECISION

Having carefully considered all of the evidence, the Alberta Energy and Utilities Board (EUB/Board) hereby approves Application No. 1367267 and will issue a well licence in due course.

2 INTRODUCTION

2.1 Application

Talisman Energy Inc. (Talisman) applied to the EUB, pursuant to Section 2.020 of the *Oil and Gas Conservation Regulations*, for a licence to drill a well from a surface location in Legal Subdivision (LSD) 14 of Section 13, Township 72, Range 11, West of the 6th Meridian, to a projected bottomhole location in LSD 10-13-72-11W6M (the proposed well/the 14-13 well). The maximum hydrogen sulphide (H₂S) concentration would be approximately 93.4 moles per kilomole (9.34 per cent H₂S) and the cumulative maximum potential release rate would be 0.4589 cubic metres per second (m³/s), with a corresponding emergency planning zone (EPZ) of 1.35 kilometres (km). The purpose of the well would be to obtain gas from the Halfway Formation. The proposed well would be located about 7 km northwest of Beaverlodge.

2.2 Intervention

Michael Syme and Darlene Syme (the Symes) own land and have a residence east of the proposed well. The Symes raised concerns with respect to development of oil and gas reserves that contain H₂S and to the proximity of the proposed well to their land and residence. The interveners were primarily concerned for their family's safety, as their land and residence were within the EPZ for the proposed well and the section of their property adjacent to the proposed 14-13 well site was a recreational area used by the family for horseback riding and driving all-terrain vehicles.

2.3 Hearing

The Board held a public hearing in Beaverlodge, Alberta, which commenced and concluded on June 22, 2005, before Board Member T. M. McGee (Presiding Member) and Acting Board Members D. D. Waisman, C.E.T., and W. G. Remmer, P.Eng. The Board panel and staff in attendance at the hearing visited the proposed well site and surrounding area immediately prior to opening the hearing. As there were no undertakings, the final evidence date is deemed to be June 22, 2005. Those who appeared at the hearing are listed in [Appendix 1](#).

3 ISSUES

The Board considers the issues respecting the application to be

- need for the well and location
- public safety and environmental impacts
- disclosure and consultation

4 NEED FOR THE WELL AND LOCATION

4.1 Views of the Applicant

Talisman stated that it held the mineral rights for the applied-for 14-13 well from the Bluesky/Bullhead Formation to basement. Talisman explained that the bottomhole target of LSD 10-13-72-11W6M (10-13) was chosen based on its seismic information. Talisman stated that previous wells drilled into this formation at nearby locations, such as LSD 5-13-72-11W6M and LSD 6-13-72-11W6M, were drilled in locations that lacked the strong seismic characteristics evident in the target area of the proposed 10-13 bottomhole. Talisman said that it believed that the success of the proposed well was dependent on placing the wellbore in the centre of the target area identified at 10-13. It said that one well would be sufficient to drain the pool identified by the seismic information.

Talisman stated that it preferred to drill vertically from the 10-13 surface location rather than directionally from the proposed 14-13 surface location. It explained that a vertical well would provide the greatest chance of success, be the lowest cost to the applicant and the most efficient to drill and complete, and have a shorter drilling duration, particularly in the sour zone. Talisman stated that it considered seven alternative surface locations for the proposed well, including 10-13, 15-13-72-11W6M (15-13), two locations in LSD 14-13-72-11W6M, 11-13-72-11W6M (11-13), 2-24-72-11W6M (2-24), and a location in LSD 3-24-72-11W6M (3-24). It stated that all of these alternative locations caused concerns for other area landowners and still included the Symes within the EPZ. Talisman explained that it believed the 14-13 location would have the least impact on all area landowners and residents. It added that it held a valid surface lease executed by the 14-13 landowner.

4.2 Views of the Interveners

The Symes did not dispute that Talisman had acquired the petroleum and natural gas rights under Section 13-72-11W6M and that a well was needed to produce the reserves contained therein. They did not provide specific technical evidence to dispute Talisman's geological interpretation.

The Symes expressed concern about sour gas development occurring in such close proximity to their property. They stated that their preference was for the well not to be drilled at all. However, the Symes said that if a well were to be drilled, they preferred the 2-24 surface location to the alternative surface locations discussed with Talisman, except for the fact that the potential impacts arising from the 2-24 proposal were unacceptable to the 2-24 landowner and therefore unacceptable to them. The Symes stated that therefore their other choice was the 3-24 surface location, as it appeared to reduce the risks to them without increasing impacts on their neighbours.

4.3 Views of the Board

The Board notes that Talisman has acquired the petroleum and natural gas rights underlying Section 13-72-11W6M. The Board accepts that the proposed well is necessary to capture the reserves expected under Section 13 and that those reserves could be accessed by the bottomhole location of 10-13, based on the geological evidence and seismic information submitted by Talisman.

Regarding the surface location of the proposed well, the Board notes the evidence that the applicant considered alternative locations. The Board also accepts that a directional well can be successfully drilled from a number of locations in the area but recognizes that the Symes' residence will remain within EPZ for all the locations considered by Talisman or the Symes. The Board agrees that there is a need for the proposed well in order to allow Talisman to exploit the mineral rights that it holds. The Board is satisfied that the proposed well should be drilled from the 14-13 surface location, provided that the development can be carried out with appropriate environment controls and in a safe manner.

5 PUBLIC SAFETY AND ENVIRONMENTAL IMPACTS

5.1 Views of the Applicant

Talisman stated that it had considerable experience in drilling this type of sour gas well. Specifically, it said that it had safely drilled five similar wells within eight miles of the proposed 14-13 well over the last nine years. Talisman also pointed out that it had operated facilities with an H₂S content as high as 50 per cent.

Talisman submitted a detailed drilling plan for the proposed well, which it asserted had been developed to the highest safety standards. Talisman added that it put great emphasis on operations integrity through its loss control program and emergency response planning. Talisman explained that its loss control program included measurable and detailed systems to ensure that wells and facilities were operated and maintained safely. Talisman also stated that it had an extensive preventive maintenance program to ensure that equipment was in proper working order. Regarding safety, Talisman added that the proposed well would be operated with two H₂S sensors on site, one on the wellhead with a diversion plate, and one inside the building that would house the wellhead during production operations. Talisman explained that the H₂S detection equipment at the 14-13 well site would have computer-monitored alarms and controls that would send out an alarm to Talisman personnel at 10 parts per million (ppm) H₂S and the well would be shut in automatically at 20 ppm H₂S. In response to the interveners' request, Talisman stated it was prepared to install a chain link fence around the proposed well site, provided that the landowners of the 14-13 surface location were in agreement. Talisman confirmed that 50 m to 60 m of the 100 m setback radius associated with the proposed well would encroach onto the Symes' land.

In response to the interveners' concerns about their land being at a lower elevation than the proposed well, Talisman submitted that the gas analysis on similar wells in the area suggested that the gas expected from the 14-13 well would be more buoyant than air and would rise rather than migrate into the low areas. Talisman said that the buoyancy would be increased given the undulating terrain and that this would be the case for all weather conditions and wind speeds. It

said that in the event of a release, it did not believe there was a risk of gas migrating along low areas toward the Symes' residence. Talisman stated that in the event of an emergency, the interveners' access/egress route would be the Symes' lane way, which would take them east, away from the proposed well site to a county road running north/south.

Talisman acknowledged that its current emergency response plan (ERP) for the proposed well was for the drilling phase only. It stated that it would either provide a new ERP for the completions phase of the proposed well or amend its existing ERP to include the completions phase prior to the 14-13 well being placed on production. Talisman also acknowledged that the well would require a site-specific ERP for the production phase, and stated that it would have one in place, through an amendment to its regional plan, prior to placing the well on production. Talisman stated that although it met with the Symes to generally explain how its ERP would work, it had not conducted a detailed review of the ERP with the Symes. Talisman committed to make its staff available to conduct such a review of the ERP with the Symes if so requested.

Talisman stated that it had also applied to the EUB for a flaring permit to test the viability of the proposed well. Talisman stated that it planned to use a flare stack to clean up and test the proposed well and that it would minimize flaring as much as possible. It expected that it would take about 18 to 30 hours to clean up and test the proposed well. In response to a question regarding the use of an incinerator rather than a flare stack, Talisman stated it would be willing to investigate whether the use of an incinerator was a viable option and if incineration could meet the Alberta Ambient Air Quality Objectives (AAAQO). However, Talisman added that during well cleanup operations, incinerators often had difficulty performing as intended because of the variations in flow rates. It stated and that evidence was not available to confirm whether incinerators were more efficient than flare stacks. In response to the request for Talisman to only flare when the wind was blowing away from the Symes' residence, it explained that it would be willing to delay the commencement of a flare test if the prevailing winds were already blowing toward the Symes' residence, but that it would be difficult to halt a test once it was initiated. Talisman committed to relocate the Syme family to a hotel during flaring operations if requested.

With respect to the runoff from the proposed well, Talisman stated that during drilling operations the lease site would be completely bermed, and at the request of area residents, it committed that no land spreading of drilling material would be done in Section 13-72-11W6M. It explained that all drilling waste would be stored in tanks and handled according to regulatory requirements. During production operations, Talisman indicated there would be a couple of small chemical tanks outside the building, with chemical pumps inside the building, all of which would have secondary containment. Talisman stated that it did not expect to be handling produced fluid at the 14-13 well site.

Talisman stated that it was prepared to test the Symes' water well for both water quantity and quality before and after drilling if requested.

To minimize noise in the area, Talisman stated that to drill the 14-13 well it intended to use a rig with a special muffler system that would greatly reduce the sound of the rig motors. In addition, Talisman said that it would use conveyer matting on the rig catwalk to deaden the sound of clanking drill pipe during tripping operations. It also committed to minimize nighttime tripping operations as much as possible.

Talisman explained that surface facilities would consist of the wellhead, flow line, line heater, and methanol tank with a solar injection pump and that there would not be any noise impact on area residents once the well was on production. It said that compression was not currently planned but it could not predict if it would be required in the future. Talisman stated that if compression were required in the future, it intended to use existing facilities or place a compressor in a central location, if possible. Talisman indicated that it understood the Symes' concerns about traffic noise. Talisman explained that the route for accessing the site would not pass the Symes' residence and that it was prepared to limit regular or scheduled traffic between 10:00 p.m. and 6:00 a.m. as much as possible during drilling operations. Talisman stated that cement pumping operations on site would not occur between midnight and 6:00 a.m.

5.2 Views of the Interveners

The Symes stated that they opposed the drilling of the proposed gas well on or near their land due to safety concerns. They did not want to be in an EPZ for a sour gas well. The interveners questioned Talisman's abilities to detect, respond to, and control an H₂S release from the proposed well. They said that their residence was downhill and downwind from the proposed well and that they therefore were concerned that a release of H₂S gas could migrate to their home.

The Symes explained that they were concerned about their children's safety, as an area used by the family for recreational purposes was immediately east and adjacent to the proposed well location, separated only by a barbwire fence. The Symes suggested moving the location of the proposed well 50 m farther west so that their land remained unencumbered by setbacks. In addition, the Symes explained that the extra distance would prevent the family from being affected by any potential incidents at the well site. They further requested that any flare stack be located as far from their land as possible.

The Symes explained that the safety features proposed by Talisman on the 14-13 well had not been explained to them, nor had the details of the draft ERP been discussed.

The Symes stated that they understood incineration to provide better combustion efficiency than flaring and questioned why Talisman was not using an incinerator for the testing operations. The Symes further stated that they wanted Talisman to use the best measures possible to ensure clean air at their home, whether that was through use of an incinerator or a flare stack. They requested that when the prevailing wind direction was toward their residence, Talisman not commence flaring and that it terminate any flaring operations under way. The Symes stated that relocation to a hotel during flaring operations was not a viable option for them.

The Symes were concerned that potential spills or runoff could migrate from the higher ground at the proposed 14-13 well site onto their property or into the slough located about 105 m to the southwest of the site. They suggested that Talisman should be required to use impermeable berms or liners to ensure containment and prevent runoff from the site onto the Symes' land or into the slough.

The interveners indicated that they are willing to have water quality tests completed on their water well before and after drilling, but were concerned about quantity tests as it is their understanding that a quantity test can cause damage to the water well.

The Symes stated that the measures committed to by Talisman would be acceptable ones to address the noise during the drilling of the well. The Symes said that traffic and associated noise would not be an issue because they are on the opposite side of the slope from the proposed well and that traffic on the access route does not pass in front of their residence.

5.3 Views of the Board

The Board considered the Symes' safety concerns with respect to the potential for H₂S leaks or releases from the proposed well during the drilling, testing, and production phases. The Board then considered the evidence submitted by Talisman to determine if the safety of the residents and the public had been addressed.

The Board also reviewed the drilling plan submitted for the proposed well, notes that it meets EUB requirements, and finds that the plan for the proposed well employs appropriate safeguards. Another important element in drilling a sour well to ensure public safety is the preparation of the drilling ERP for the proposed well. The Board notes that the interveners did not submit any evidence specific to the drilling ERP and that they agreed that their access and egress route to their residence was away from the well.

The Board notes that the proposed well would have safety features to detect any leaks of H₂S and an automatic shut-in and call-out system. In addition, the Board heard evidence regarding Talisman's inspection and maintenance program. The Board notes that Talisman is required to have an ERP in place prior to the proposed well being placed on production. The Board further notes that Talisman would provide all of the applicable ERPs to the Symes and would make appropriate personnel available to them to review the plans and explain in detail how they would be implemented in the event of an emergency. Therefore, the Board is of the view that the safety of the residents within the area has been appropriately addressed and is satisfied that Talisman has suitable systems and controls in place to ensure that the public and the environment are protected.

On the question of flaring, the Board notes the evidence that flaring or incineration is needed to clean up and test the proposed well and that there are no facilities in place for in-line testing. The Board expects companies to minimize cleanup and testing and notes Talisman's commitment to reduce flaring as much as possible in this case. The Board also expects Talisman to select the most appropriate testing equipment that leads to the lowest ground-level concentrations for the entire cleanup and well test. A licensee is required to meet both the AAAQO for predicted emissions and the requirements in EUB *Guide 60: Upstream Petroleum Industry Flaring Guide* and *Guide 60: Update and Clarification*. These requirements apply whether a flare stack or an incinerator is used. If Talisman decides to use an incinerator for well testing operations or to permanently install an incinerator on site, it must provide a new flare application for the Board's review and approval prior to the commencement of cleanup or testing operations.

The Board also recognizes that Talisman has agreed not to commence well test flaring if the wind direction were in the direction of the Symes' residence and that it has committed to no continuous flaring at the well site.

Regarding spills at and runoff from the proposed well site, the Board finds that the proposed berm to surround the well site and the required secondary containment would ensure that any spills or water would not spread off the lease site during the drilling and completions operations.

The fact that the lease site is at a slightly higher elevation than the interveners' land does not, in the view of the Board, result in an increased risk of contamination from operations at the proposed well site.

The Board acknowledges Talisman's commitment to conduct a quality and quantity test on the Symes' water well in response to the Symes' request to conduct only a quality test. The Board accepts that the measures Talisman has committed for reducing noise from drilling and traffic as reasonable.

6 DISCLOSURE AND CONSULTATION

6.1 Views of the Applicant

Talisman explained that it took its public consultation process very seriously and only hired capable and qualified landmen to conduct its consultation on applications. In addition, Talisman stated that a landman conducting a consultation on an application had access to all the members of the drilling, completions, and operations team to be better able to respond to landowner questions and obtain information about the application directly for the landowner's review. Talisman indicated that the level of detail in the information package provided to area landowners for its projects was based on the minimum requirements specified in *EUB Guide 56: Energy Development Applications and Schedules* and on the complexity of the proposed project. The company then explained that generally it would augment the information in the package only if concerns were raised by area landowners. Talisman said that if landowner concerns were raised, the landman would report to Talisman senior management on the progress in addressing landowner concerns and would follow up on the concerns with face-to-face meetings where possible. If discussions reached an impasse, Talisman would encourage the use of the EUB's Appropriate Dispute Resolution (ADR) program in the form of EUB staff facilitation, where feasible.

Talisman said that it clearly understood that the Symes did not accept its preferred surface location at 10-13, which was on their land, and that they did not wish to see any more sour development in the area. Talisman stated that during the consultation process, the Symes raised compensation issues and a number of what it described as fairly general concerns about the 14-13 well and that, despite its proposed alternative sites, Talisman found itself at an impasse and solicited the help of the EUB's Staff Facilitation Team. Talisman indicated that although helpful, those meetings did not fully resolve the Symes' concerns. Talisman indicated that in hindsight, it would have been more beneficial if it had engaged EUB facilitation staff earlier.

In response to the interveners' argument that Talisman had not met the EUB participant involvement requirements, Talisman stated that it was in compliance with the EUB's consultation requirements and was committed to responding to the reasonable expectations and concerns of area residents and landowners. Talisman reported that based on its consultation efforts, five of the six residents within the 1.35 km EPZ did not object to the proposed 14-13 well. In addition, Talisman said it believed that it had made a reasonable effort to address the specific concerns expressed by the Symes. Talisman argued that the interveners understood that a sour gas well was being proposed from the discussions Talisman had with them, as the Symes made it clear they did not want to have the proposed well on their property. Talisman added that it responded to the Symes' request to move the proposed well location and came forward with

alternative locations to its preferred 10-13 site, which it said would increase the time, cost, and effort to drill the proposed well.

6.2 Views of the Interveners

The Symes stated that they believed that Talisman's notification documents and consultation efforts did not meet the participant involvement requirements set out in *Guide 56*. They provided numerous extracts from *Guide 56* to illustrate what they argued were deficiencies in Talisman's participant involvement program. The interveners suggested that Talisman deliberately withheld information from them and seemed to discourage them from learning enough about the proposed project to make an informed decision. The interveners pointed out that Talisman's original notification stated that the applied-for substance was "oil or gas," while it should have specified that it was sour gas. The Symes acknowledged that Talisman later corrected this error in accordance with the EUB's direction to do so. The Symes stated that they frequently requested additional technical information from Talisman in several meetings and telephone conversations but never received any written materials other than general information, such as a one-page summary describing a blowout preventer. The interveners stated that not until the parties met with EUB facilitation staff did they acquire information with sufficient detail to allow them to formulate an informed position on the proposed well. The interveners requested that the Board reject the application for the proposed 14-13 well on the basis that EUB requirements were not met, and they requested that the Board inquire into all other applications Talisman had made since *Guide 56* came into effect.

6.3 Views of the Board

The Board finds that Talisman has generally met the strict interpretation of the participant involvement requirements contained in *Guide 56*. Although Talisman's first notice failed to state that a gas well was being proposed and to give the H₂S content of the proposed well, the Board recognizes that Talisman sent the Symes a follow-up letter acknowledging this and clarifying deficiencies in its original notification package. The Board also takes into account the evidence of subsequent discussions between Talisman and the interveners.

The Board understands the template approach used for content development of a consultation package as implemented by Talisman in this case and considers the approach satisfactory, provided that an appropriate level of site-specific information is also provided. The Board agrees with the Symes that it is reasonable to expect more detailed information from an applicant when it is applying to drill, complete, and test a sour well compared to a template for a sweet gas well. The Board notes that it also may have been more helpful if Talisman had provided more specific written information regarding the proposed well following discussions, rather than general information which may have been difficult for the Symes to apply and relate to the specific well in question.

The Board believes that the face-to-face follow-up approach was appropriate in this case and that sufficient measures to find a resolution were taken by Talisman through meetings with the Symes. The Board recognizes that given the position of the Symes and their representative, a hearing was likely the only viable method to reach a resolution on the drilling of the proposed well, other than requesting EUB facilitation earlier.

7 CONCLUSION

In the preceding sections, the Board considers the evidence concerning the need for the well and location, the possible public safety and environmental impacts, and the applicant's disclosure and consultation process and has decided to approve the application. The Board notes the commitments made by Talisman to the interveners (see Appendix 2) and is satisfied that proposed well can be drilled, completed, and operated safely at the 14-13 surface location.

Dated in Calgary, Alberta, on September 15, 2005.

ALBERTA ENERGY AND UTILITIES BOARD

(Original signed by)

T. M. McGee
Presiding Member

(Original signed by)

D. D. Waisman, C.E.T.
Acting Board Member

(Original signed by)

W. G. Remmer, P.Eng.
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives
(Abbreviations used in report)**Witnesses**

Talisman Energy Inc. (Talisman)
R. Kruhlak
R. Haugen

R. A. Broen, P.Eng.
T. F. Pruckl
G. K. Stewart, P.Eng.
D. Shao, P.Geoph.
C. Neale, P.Eng.
J. Hagen
M. J. Watchorn
N. S. Goda, P.Geol.
I. P. Dowsett, R.E.T.,
of RWDI Consulting Engineers & Scientists

M. Syme and D. Syme
R. Podruzny

M. Syme
D. Syme
R. Podruzny

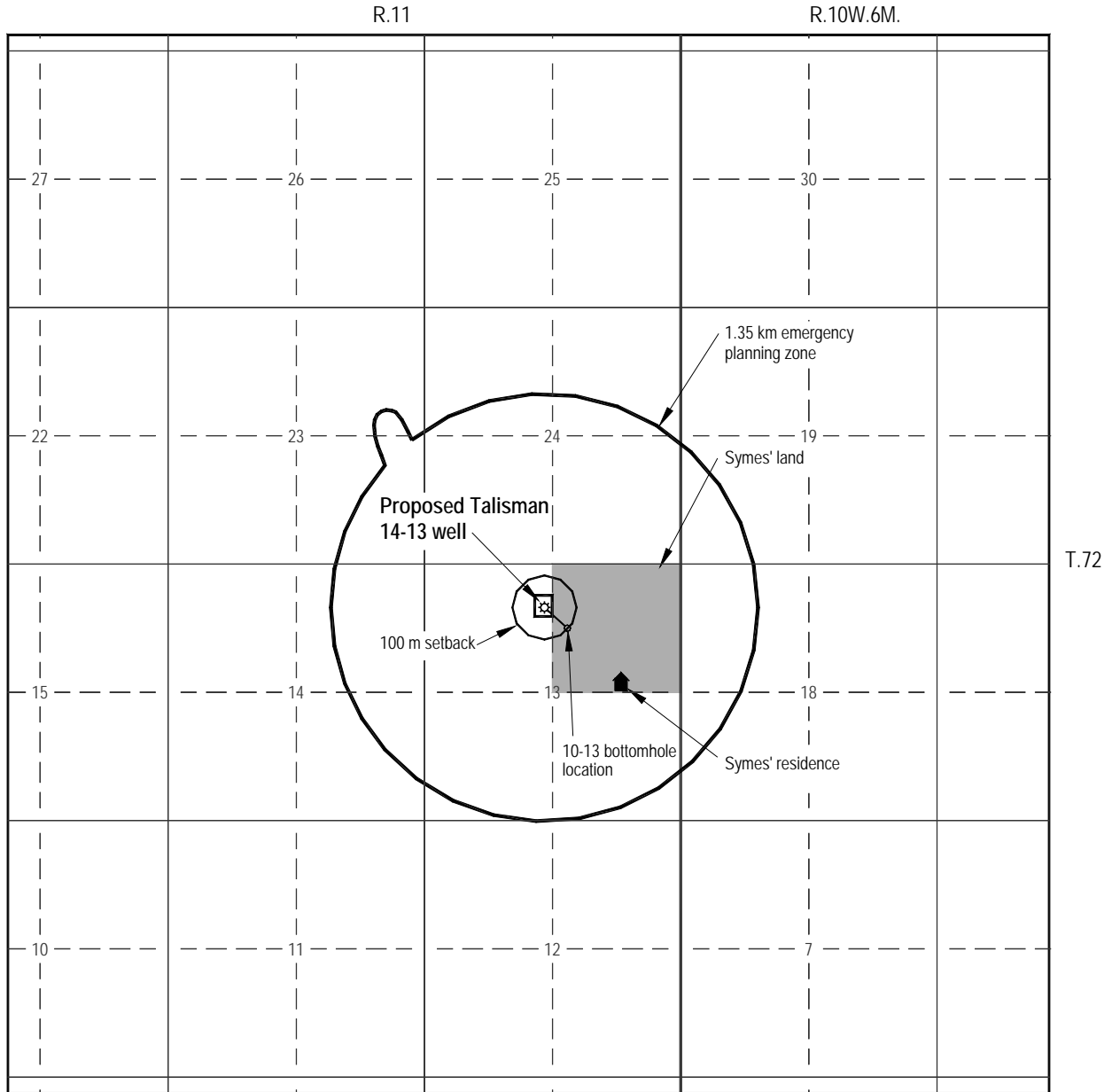
Alberta Energy and Utilities Board staff
G. Bentivegna, Board Counsel
D. McCluskey
K. McCullough
J. Vaughan, C.Tech.

APPENDIX 2 SUMMARY OF COMMITMENTS

The Board notes throughout the decision report that Talisman Energy Inc. has undertaken to conduct certain activities in connection with its operations that are not strictly required by the EUB's regulations or guidelines. These undertakings are described as commitments and are summarized below. It is the Board's view that when a company makes commitments of this nature, it has satisfied itself that these activities will benefit both the project and the public, and the Board takes these commitments into account when arriving at its decision. The Board expects the applicant, having made the commitments, to fully carry out the undertaking or advise the EUB if, for whatever reasons, it cannot fulfill a commitment. The EUB would then assess whether the circumstances regarding the failed commitment warrant a review of the original approval. The Board also notes that the affected parties have the right to request a review of the original approval if commitments made by the applicant remain unfulfilled.

COMMITMENTS BY TALISMAN ENERGY INC.

- Talisman commits to hold a face-to-face meeting with the Symes to conduct a detailed review of its emergency response plans if the Symes so request.
- Talisman commits to investigate the use of an incinerator to test the viability of the 14-13 well and commits to use the best means possible to meet the Alberta Ambient Air Quality Objectives (AAAQO).
- Talisman commits to no continuous flaring at the 14-13 well site.
- Talisman commits to minimize flaring and/or incineration as much as possible and not to commence any flaring and/or incineration operations at the 14-13 well site if the prevailing winds are blowing toward the Symes' residence.
- Talisman commits to offer to relocate the Syme family to a hotel prior to any flaring and/or incineration operations at the 14-13 well site.
- Talisman commits to offer to test the Symes' water well for both quality and quantity of water before and after drilling the 14-13 well.
- Talisman commits to consult with the 14-13 landowner and to offer to install a chain link fence around the proposed 14-13 well site if the 14-13 landowner so agrees.
- Talisman commits to install a muffler system onto the rig to reduce the noise of the rig motors during drilling operations at the 14-13 well site.
- Talisman commits to install conveyer matting on the rig catwalk to reduce the noise during tripping operations at the 14-13 well site.
- Talisman commits to minimize nighttime tripping operations at the 14-13 well as much as possible.
- Talisman commits to limit regular or scheduled traffic from accessing the 14-13 well site between 10:00 p.m. to 6:00 a.m. as much as possible during drilling operations.
- Talisman commits not to conduct cement pumping operations at the 14-13 well site between midnight and 6:00 a.m.



Legend

- Residence
- ☆ Proposed well

Area map