NATIONAL ENERGY BOARD

IN THE MATTER OF the *National Energy Board Act*, RSC 1985, c N-7, as amended;

AND IN THE MATTER OF an Application by Quicksilver Resources Canada Inc. for a licence pursuant to section 117 of the *National Energy Board Act* authorizing the export of liquefied natural gas.

QUICKSILVER RESOURCES CANADA INC.

APPLICATION FOR LICENCE TO EXPORT LIQUEFIED NATURAL GAS

July 2014

TO: The Secretary
National Energy Board
Centre 10
517 10th Avenue SW
Calgary, AB T2R 0A7

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C. Roland Priddle, "Quicksilver Resources: Licence Application of the National Energy Board" dated July, 2014

I. APPLICATION AND PROPOSED LICENCE TERMS

1. Quicksilver Resources Canada Inc. (the "Applicant") hereby applies to the National Energy Board ("NEB" or "Board") pursuant to section 117 of the *National Energy Board Act* ("NEB Act")[1] for a licence to export liquefied natural gas ("LNG") with the following terms and conditions ("Licence"):

   (a) **Term**: 25 years commencing from the date of the first export under the Licence;

   (b) **Term quantity**: The quantity of LNG that may be exported over the term of the Licence shall not exceed 470 million tonnes ("MMT"), which is the approximate natural gas equivalent of 22,500 billion cubic feet ("Bcf") or 635 10^9m^3;

   (c) **Annual quantity maximum**: Subject to the annual tolerance, the quantity of LNG that may be exported in any 12-month period shall not exceed 20 million tonnes per annum ("MTPA"), which corresponds to a natural gas equivalent of approximately 960 Bcf or 27 10^9m^3;

   (d) **Annual tolerance**: The quantity of LNG that may be exported in any 12 month period may exceed the annual maximum by 15 percent;

   (e) **Export point**: The point of export of LNG from Canada shall be at the outlet of the loading arm of the natural gas liquefaction facility located on the north side of Campbell River, British Columbia;

   (f) **Early Expiration Date**: Unless otherwise authorised by the Board, the term of the Licence shall end 10 years after the date of Governor-in-Council approval of the issuance of the Licence if the export of LNG has not commenced on or before that date; and

   (g) Any further terms as may be requested and as the Board may consider appropriate in the circumstances.

2. As set out below, the Licence will meet the requirements of section 118 of the NEB Act as the quantity of gas proposed to be exported under the Licence does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada, having regard to the trends in the discovery of gas in Canada.

3. The Applicant has prepared this Application in accordance with Guide Q of the NEB Filing Manual and the *Interim Memorandum of Guidance Concerning Oil and Gas Export Applications and Gas Import Applications under Part VI of the National Energy Board Act* ("Interim MOG") issued by the Board on July 11, 2012.

4. In this regard, the Applicant seeks relief from the filing requirements contained in section 12 of the *National Energy Board Act Part VI (Oil and Gas) Regulations* ("Part VI

[1] RSC 1985, c N-7.

Regulations"),[2] except where those requirements are addressed in this Application. This request is supported by the Board's recent Letter Decisions dated April 16, 2014 and May 1, 2014 concerning applications by Triton LNG Limited Partnership ("Triton") and Aurora Liquefied Natural Gas Ltd. ("Aurora"), respectively, to export LNG. In both decisions, the Board exempted the applicant from certain filing requirements set out in section 12 of the Part VI Regulations. The Board granted this exemption in light of amendments to sections 24 and 118 of the NEB Act. The Board also stated in both decisions that the relevant requirements needed for the Board's assessment of a gas export licence are identified in Guide Q of the Filing Manual, with which the Applicant has complied.

II. OVERVIEW OF THE DISCOVERY LNG PROJECT

5. The Applicant is investigating options to build and operate natural gas liquefaction, storage and on-loading facilities, called Discovery LNG (the "Project"), on the north side of Campbell River, British Columbia. The multi-billion dollar Project will be designed to take delivery of gas primarily from the Western Canadian Sedimentary Basin and liquefy it for export to Pacific Rim markets in Asia. Given the integrated nature of the North American gas markets and pipeline network, gas supply could also potentially come from other Canadian or North American basins over the life of the Project.

6. The contemplated Project site, just north of the City of Campbell River, was formerly occupied by the Elk Falls Mill owned by Catalyst Paper Corporation. As a result, the Project would be built on an existing industrial site.

7. The Project is expected to provide facilities for liquefying natural gas, LNG storage and carrier on-loading facilities and would be operated by a downstream partnership between the Applicant and a third party (to be finalized). The Project is expected to include:

    (a) four liquefaction trains and LNG storage;

    (b) a marine berth and related bulkhead, dock, and mooring infrastructure to support docking and loading of LNG carriers; and

    (c) shore side facilities, including power supply, condensate storage, water supply and return, cooling water system, feed gas pipeline and metering, and support buildings.

8. It is anticipated that the liquefaction component will have an annual production capacity of approximately 20 MTPA of LNG and will require approximately 80.5 $10^6 m^3$/day (2.86 Bcf/day) of feed gas, inclusive of process fuel. The LNG production will be offloaded through a loading arm to LNG carriers for transport to export markets. The volumes sought under the Licence represent the capacity of the Project at or near full build out.

9. As stated above, a 15 percent annual tolerance to accommodate temporary operating conditions is requested. The tolerance is needed to manage variability in the quantity of LNG that can be produced at the terminal, which may vary depending on changes in the specifications of gas, LNG terminal optimization/debottlenecking opportunities, ambient

[2] SOR/96-244.

temperature changes and cargo scheduling. The anticipated capacity of each train will be approximately 5 MTPA. With the 15 percent annual tolerance, this will increase to 5.75 MTPA.

10. In addition, the Applicant is seeking a 25 year term to the Licence. Given the scale of the undertaking, the size of the capital investment and the long pay-back period, a 25 year licence is fundamental to the economic viability of the Project. Moreover, Asia has historically been a long term gas market that values security of supply.

11. The Applicant is currently in the project feasibility phase of the Project. Subject to the completion of the feasibility study, consultations with Aboriginal groups and local communities, permitting, regulatory approvals and facility construction, the proposed LNG exports could begin as early as 2021. The full capacity of 20 MTPA could be on stream as early as 2024. Timing could be influenced by a number of project variables including but not limited to project economics and available pipeline capacity to the Project site. The Applicant is now in discussions with supply and market participants to develop commercial supply and offtake agreements.

III. PROJECT OWNERSHIP

12. The Licence may be used to export LNG produced at the Project site consistent with a variety of multi-party arrangements, including, but not necessarily limited to, incorporated joint ventures, unincorporated joint ventures or partnerships, all of which will include the Applicant in their overall structure. The Applicant is currently working with potential joint venture partners.

IV. GAS SUPPLY

a. The Applicant's Gas Reserves

13. The Applicant, a Canadian subsidiary of Quicksilver Resources Inc., has been exploring the potential of Canadian coalbed methane since 1999 and continues to explore for and develop unconventional gas resources in the Western Canadian Sedimentary Basin. The Applicant has estimated gas in-place volumes of approximately 37.5 trillion cubic feet ("Tcf") in the Horn River Basin of northeast British Columbia, including 13 Tcf of recoverable resource based on current technology. In addition to the Horn River resource base, Quicksilver has approximately 200 Bcf of proven reserves in Alberta that are characterized by low-decline coalbed methane and shallow gas assets. The entire Alberta and British Columbia supply pool, which is currently producing approximately 90 Mmcf/day, is controlled by Quicksilver and is available for long-term LNG exports. Attached as Appendix "A" is a summary of the Applicant's Resource Pool based on an evaluation by McDaniel & Associates Consultants Ltd., effective July 1, 2013.

14. Given the Applicant's large resource base, gas supply for the Project will be primarily from the Applicant's proprietary gas; however, gas supply may also include gas obtained through commercial gas supply arrangements. These may include, without limitation: gas purchases at market hubs, additional resource acquisitions, upstream joint ventures and gas supply purchase arrangements.

b. Surplus Determination

15. As stated by the Board in the Interim MOG, the role of the Board, in considering a gas export application, is to evaluate whether the gas to be exported is surplus to reasonably foreseeable Canadian requirements.[3] To enable the Board to fulfill this mandate, consistent with the Filing Requirements, the Applicant is providing herewith:

(a) a report prepared by Ziff Energy - a division of HSB Solomon Associates LLC ("Ziff") entitled "Long Term Natural Gas Supply and Demand Forecast to 2050" (Appendix "B"); and

(b) a report prepared by Roland Priddle entitled "Quicksilver Resources: Licence Application of the National Energy Board" (Appendix "C").

16. The Ziff report provides descriptions of the gas supplies expected to be available to the Canadian market and the expected gas requirements for Canada over the requested export licence term. The Ziff report's conclusions include the following:

(a) North American and Western Canadian gas resources are robust and continue to grow with the development of horizontal drilling and multi-stage fracture technologies.

(b) North American and Western Canadian gas supply is not constrained to meet projected base demand, including NEB-approved LNG exports and incremental demand from the Project.

(c) There is an abundance of low-cost natural gas resource available in North America and Canadian shale-gas plays and unconventional-gas plays.

(d) Western Canada has productive natural gas potential in excess of projected demand during the forecast period, having regard to trends in the identification of gas resources, particularly unconventional gas, and in the development of cost-competitive production from those resources as a result of technological advances referred to in (a).

(e) Canadian gas supply is expected to grow to 36 Bcf/d (38 PJ/d) in 2050, up from 13 Bcf/d (14 PJ/d) in 2013, as new gas supplies more than offset declines of higher-cost conventional gas.

(f) The North American market is highly liquid, open, and efficient.

(g) Despite declining Western Canadian gas production since 2001, Canadian gas markets have been adequately supplied and this trend is forecast to continue; these markets are a component of the integrated North American market.

(h) North American gas demand growth will be driven primarily by gas-fired electrical generation, Canadian oil sands gas demand, and LNG export liquefaction.

[3] Interim MOG at PDF 1 (marked page 2).

(i) The market impact from the proposed Project will be muted by the abundance of low-cost gas resource available in Western Canada and the United States.

(j) The incremental price impact of the Project on AECO natural gas prices over the forecast period will average 0.19 USD/Mcf.

(k) Natural gas markets will continue to function with natural gas buyers and sellers establishing fair market prices based on supply and demand fundamentals.

(l) The export of gas proposed by the Applicant will not cause Canadians any difficulty in meeting their natural gas requirements at fair market prices.[4]

17. Mr. Priddle's report provides a description of the implications of the proposed gas export volumes on the ability of Canadians to meet their gas requirements and an evaluation of whether this gas is surplus to Canadian requirements. Mr. Priddle concludes that:

> The Assessment of surplus for the Quicksilver exports is made in the context of a demonstrably dynamic, physically and commercially integrated, price transparent, highly-liquid North American gas commodity marketplace. Its commercial, policy and regulatory underpinnings are not likely to be affected by the Quicksilver exports so the market will continue to be fully functioning and well able to meet Canadians gas requirements in full at market prices. Therefore the Board can confidently find that the gas applied to be exported is surplus to reasonably foreseeable requirement for use in Canada. Further, having regard to the large available gas resource, trends in its discovery, the still-lagging production of gas in relation to that resource's size and the low incremental cost of adding new production, the Board can be confident that trends in the discovery of gas in Canada, and for that matter in North America as a whole, are positive and prospectively will remain so for any foreseeable future.[5]

18. The assessments of Ziff and Mr. Priddle demonstrate that the quantity of gas to be exported by the Applicant does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada, having regard to the trends in the discovery of gas in Canada.

V. RELIEF SOUGHT

19. The Applicant respectfully requests that the Board issue a licence authorizing the export of natural gas pursuant to section 117 of the NEB Act according to the terms outlined at Part I of this Application, titled "Application and Proposed Licence Terms", in addition to the exemptions requested therein.

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[4] Ziff report, at pages 48-49.

[5] Priddle report, at page 5.

ALL OF WHICH IS RESPECTFULLY SUBMITTED this 29th day of July, 2014.

Quicksilver Resources Canada Inc.
by its counsel

Osler, Hoskin & Harcourt LLP

Per: ______________________________
Shawn H.T. Denstedt, Q.C.