APPENDIX O

KELTIC PETROCHEMICAL PROJECT NOVA SCOTIA ENVIRONMENTAL ASSESSMENT BOARD "RECOMMENDATIONS"

RECOMMENDATIONS

The Environmental Assessment Board submits the following recommendations. The Board drew these recommendations from a consideration of Keltic Petrochemical's Environmental Assessment, *Keltic Petrochemicals Inc. Proposed LNG and Petrochemical Plant Facilities, Goldboro, Nova Scotia - Environmental Impact Assessment, Final Report*. The details leading to these specific recommendations can be found in Sections 5 and 6 of this report. The Panel recommends:

Aboriginal Use of Land and Resources (5.1)

5.1.5.1 That prior to the issuing of any permits, the Proponent conduct further study into the traditional Aboriginal use of the proposed project site lands and that this information be used as baseline information to aid in identifying any areas that must be avoided during construction and operation. These results are to be provided to the Nova Scotia Department of Environment and Labour and other affected provincial departments.

5.1.5.2 That the Proponent enhance ongoing dialogue with the Aboriginal community in its consultation strategy and ensures Aboriginal representation on any Community Liaison Committee.

5.1.5.3 That the Proponent provide a compensation plan for any affected Aboriginal fisheries.

5.1.5.4 That the Proponent prepare a detailed Archaeological Monitoring Plan prior to the issuing of any permits and that the Plan include direction to stop all work on the site in the area of any significant archaeological discovery until authorization to resume work is given by appropriate authorities.

Socio Economic Implications (5.2)

5.2.5.1 That the Proponent contribute resources to recreational and social opportunities, primarily for its workforce, that could be turned over to the local authorities in order to reduce the burden on local authorities for similar amenities.

5.2.5.2 That the Proponent continue to work with local communities, unions and education/training institutions to ensure that the types of skills required are clearly understood; that the Proponent provide financial incentives to encourage local persons to undertake the necessary training; and that the Proponent adopt a policy to give priority to hiring qualified local workers.

5.2.5.3 That the Proponent develop an Equal Opportunities Employment Strategy that ensures employment opportunities for under represented groups such as women, visible minorities and persons with disabilities.

Air Quality / Emissions / Atmospheric Effects (5.3)

5.3.5.1 That prior to any construction activities, the Proponent supply to NSDEL seasonal baseline data for ambient and peak concentrations of gases and aerosols that may be released from the proposed project, including nitrogen oxides (NO_x), sulfur oxides (SO_x), carbon monoxide (CO), ozone (O_3), volatile organic compounds (VOCs) and particulate matter [total suspended particulate (TSP), particulate matter less than 2.5 micrometres in diameter ($PM_{2.5}$) and particulate matter less than 10 micrometres in diameter (PM_{10})].

5.3.5.2 That prior to any construction activities, the Proponent collect appropriate meteorological data at the proposed project site for at least two seasons. The Proponent will statistically and quantitatively compare this new data to Shearwater and Yarmouth climate data used in the EIA air quality dispersion model to ensure that valid data is used in the model. The Proponent will identify details about microclimate issues in the project area that could affect the dispersion model. These findings will be given to NSDEL and other appropriate agencies for review.

5.3.5.3 That an updated air dispersion model be prepared by the Proponent using the updated baseline air quality data and the verified meteorological data that were requested in Recommendation 5.3.5.2. This new model will be used to produce maximum and annual concentration contour maps for the air quality components identified in Recommendation 5.3.5.1. The maps will cover a region with a radius of at least 25 km from the Goldboro project site and include specific VOC contour maps. These findings will be given to NSDEL and other appropriate agencies for review prior to any construction activities.

5.3.5.4 That the Proponent supplies additional air emission data and interpretations to NSDEL prior to any construction activities.

(a) This data will include chemical characterization of Sable Offshore Energy Inc. (SOEI) gas plant particulates and SO_x emission data from the SOEI plant.

(b) Emission data from the proposed petrochemical plant will be provided for SO_x, O_3, and known specific VOCs, based on relevant Alberta and Ontario data reflected in Environment Canada's Intervenor submission (p.17).

(c) The Panel requests that Table 9.6-1 of the EIA report be revised by the Proponent to address air emission errors, inconsistencies and omissions (see section 5.3.3 Identified Concerns/Panel/Emission Data, this report).

(d) Emission data from the proposed incinerator at the project site will be provided by the Proponent, including emission compounds, concentrations and incinerator hours of operation.

(e) An Incinerator Monitoring Plan will be prepared and implemented (section 6.2, this report).

(f) A complete project inventory of greenhouse gas emissions will be provided by the Proponent, including carbon dioxide, and the CO_2 release equivalents for methane, chlorofluorocarbons, hydrochlorofluorocarbons and sulfur hexafluoride. The Proponent will provide an analysis of greenhouse gas emissions from the proposed petrochemical plant and how these emissions fit with Nova Scotia's greenhouse gas reduction goals.

5.3.5.5 That the Proponent begin real-time ambient air quality baseline monitoring in the community, at the industrial park and in surrounding communities prior to any construction activities. A detailed plan of the monitoring program, as well as a list of the individuals or agencies responsible for overseeing the program, doing the data analyses, and enacting the necessary adjustments will be provided to NSDEL.

5.3.5.6 That the Proponent's communications strategy include procedures to share real-time air quality data and predicted model results with NSDEL and the public.

Noise/Light (5.4)

5.4.5.1 That the Proponent's Noise Monitoring Program, rather than monitoring noise through complaints, ensure that sound levels meet the lowest levels as established by all levels of government. The plan must not be dependent on impacts on 'sensitive receptors' which are often defined as public uses such as schools and health care facilities (these are not near the project site). The plan must also include methods by which the marine environment will be monitored for noise as a result of construction and operation, including shipping and marine terminal operations.

5.4.5.2 That the Proponent submit a Lighting Design Plan and establish a Light Monitoring Plan for approval by NSDEL prior to the issuing of any permits. The Light Monitoring Plan is to include a means of regularly monitoring bird mortality and lighting levels rather than depending upon complaints from nearby residents and the public.

Surface Water and Wetlands (5.5)

5.5.5.1 That prior to the issuing of any permits, the Environmental Protection and Erosion and Sediment Control Plans be submitted by the Proponent and approved by NSDEL. These Plans must include sufficient detail to enable NSDEL to ensure that erosion and sediment control measures are adequate, particularly with regard to the proposed removal of organic soils and vegetation from the area to be flooded at Meadow Lake, so as to minimize impacts to the lake and downstream systems.

5.5.5.2 That prior to the issuing of any permits, the Wetland Compensation Plan be submitted by the Proponent and approved by NSDEL. This Plan must include adequate

plans for avoidance, rehabilitation, or compensation for disturbance or destruction of wetlands, in accordance with the Wetlands Policy of NSDEL. A Wetland Compensation Plan is to be added to the list of reports and plans that are to be prepared by the Proponent (Section 6.2, this report).

5.5.5.3 That prior to the issuing of any permits, the Proponent complete an assessment of the impacts of potential dam failure at Meadow Lake to the satisfaction of NSDEL, including possible impacts to Route 316.

5.5.5.4 That prior to any construction activities, the Proponent undertake a phosphorus modeling exercise for Meadow Lake, to assess the present and predict future trophic states of the lake. NSDEL has developed a standard lake phosphorus model which may be used for this purpose. A receiving water assimilative capacity study must also be done for Betty's Cove Brook and any other freshwaters receiving runoff or effluent from the project site.

5.5.5.5 That the water quality monitoring program to be undertaken by the Proponent include standard water quality parameters such as metals, oxygen, pH and total phosphorus, in addition to those proposed. A detection limit of 0.002 mg per litre should be used for total phosphorus. Regular monitoring of Meadow Lake, major tributary streams, and Isaacs Harbour River should begin as soon as possible (prior to any construction activities) and continue for a suitable period after construction and during operations, as determined by NSDEL. Monitoring for mercury is particularly important (see Section 6.3, this report).

5.5.5.6 That the undisturbed buffer zone between wetlands or other waterbodies and adjacent construction activities be increased from 15 metres to 30 metres.

Ground Water (5.6)

5.6.5.1 That the drilled test wells continue to be monitored by the Proponent for water chemistry and coliform bacteria. These test wells must be clearly identified during the construction phase and not disturbed, to allow for long-term monitoring for a suitable period of at least several years during the operational phase, as determined by NSDEL.

5.6.5.2 That the Proponent establish an arbitration and resolution procedure to deal with impacts to wells and drinking water supply for residences near the project area to the satisfaction of NSDEL and Nova Scotia Department of Health Promotion and Protection (NSHPP), to be delivered to homeowners prior to any construction activities. This procedure should specify the types of permanent solutions to be provided in cases where they may be needed.

Marine Water (5.7)

5.7.5.1 That NSDEL and appropriate federal authorities require the Proponent to initiate, prior to any construction activities, a marine water and sediment quality monitoring program, with scope and parameters to be determined by those government authorities.

5.7.5.2 That the Proponent conduct, prior to the issuing of any permits, a receiving water assimilative capacity study for Isaacs Harbour, in accordance with NSDEL regulations for wastewater and stormwater discharge approval.

Terrestrial Habitat (5.8)

5.8.5.1 That NSDEL and NSDNR ensure that mitigative and monitoring measures for wildlife and vegetation are adequate and that they are applied as required, and fully documented in the Environmental Protection Plan (EPP).

5.8.5.2 That bird mortality due to collision with structures be documented by the Proponent, and criteria developed in the EPP to determine when additional mitigative measures must be developed and applied.

Fisheries, Aquaculture and Resource Harvesting (5.9)

5.9.5.1 That the Proponent continue negotiations with all local and Aboriginal fishers (not just lobster fishers) and that a Fishers Income Compensation Plan be developed prior to any permits being issued.

5.9.5.2 That the Proponent ensure baseline data (including water and sediment parameters as determined by NSDEL) is collected and an Aquaculture Monitoring Plan be developed in relation to the current mussel farm and other potential aquaculture users. As well, an Aquaculture Income Compensation Plan shall be developed.

5.9.5.3 That the Proponent complete a more detailed examination of the potential impacts on the salmon migration corridor and the impacts of the Meadow Lake alterations on this corridor prior to the issuing of any permits, with the results to be reported to NSDEL and DFO.

5.9.5.4 That the Proponent develop a detailed communications plan for fishers, and all other boaters and recreational users in relation to shipping traffic, and consideration be given to consulting with Transport Canada to establish a Harbour Master office to ensure safe and timely passage.

Aquatic Species (5.10)

5.10.5.1 That the Environmental Effects Monitoring Plan for the project include representative sampling of sediment and fish tissue for mercury and methylmercury at Meadow Lake, as determined by NSDEL in consultation with Health Canada and the federal Department of Fisheries and Oceans (DFO) (see also Section 6.3 Mercury, this report).

Forestry (5.11)

5.11.5.1 That the Proponent consult with NSDNR and StoraEnso to ensure that StoraEnso's forestry licensing needs are met as a result of the potential loss of forested land from production due to the flooding of Meadow Lake.

Geology (5.12)

5.12.5.1 That as part of the request to collect and analyze additional soil and sediment samples for mercury before construction at the project site and at the proposed flooded area around Meadow Lake (Recommendation 6.3.5.3), the Proponent also measure arsenic in these samples and prepare arsenic concentration contour maps for soil and sediments (<63 μm fraction). NSDEL must be consulted to help prepare a sampling plan and to review the results.

5.12.5.2 That prior to the issuing of any permits, the Proponent verify that the project site is not contaminated with mercury or arsenic. This will be done following the principles of the Nova Scotia Guidelines for the Management of Contaminated Sites, under the direction of NSDEL.

5.12.5.3 That the Proponent develop a Tailings Management Plan prior to the issuing of any permits.

5.12.5.4 That the Proponent carry out seasonal baseline monitoring of pH in surface waters at the project site and at Meadow Lake before any land clearing and construction activities. The Proponent will do seasonal pH monitoring of surface waters at and near the project site during construction and production phases, in order to identify areas where acid-generating rock may have been disturbed. This activity will be included in the Acid Generating Rock Management Plan and will be co-ordinated with surface water monitoring activities requested in Recommendation 5.5.5.5.

5.12.5.5 That the Proponent carry out a marine-suspended-matter contaminant monitoring program prior to any construction activities to study the distribution, composition and movement of suspended particles in waters around local lobster beds and the Country Harbour mussel farm. This monitoring program will be repeated during

the production phase of the project. This program will be part of the Erosion and Sediment Control Plan. Local fishers are to be consulted to establish monitoring sites and NSDEL is to be consulted to design the monitoring program and to review the results.

Archaeology (5.13)

5.13.5.1 That prior to the issuing of any permits or any site disturbance, a complete archaeological assessment of the remainder of the project site be undertaken, including those areas that may be flooded by the damming of Meadow Lake. This is to ensure project design is adjusted accordingly prior to work versus upon a significant archaeological discovery.

5.13.5.2 That prior to any permits being issued, an Archaeological Monitoring Plan be created in consultation with the descendents of Black Loyalists, the Mi'kmaq community and various subject experts including the Nova Scotia Museum and that the plan include a "stop work" clause covering archaeological finds and a detailed communications plan.

5.13.5.3 That the Office of African Nova Scotian Affairs coordinate plans for the erection of a memorial by the Proponent in the Red Head vicinity. In addition, a Visitation Plan be created to allow descendents to have escorted visits to the cemetery, with prior notice, or on pre-determined dates.

Transportation (5.14)

5.14.5.1 That in order to fully address the potential impacts of vehicular traffic, the Proponent continue discussions with the Nova Scotia Department of Transportation and Public Works (NSTPW) regarding the preparation of a Traffic Impact Study for road upgrades, for any roads required for access to portions of the project site that may not be on Project lands (Meadow Lake Dam) and for the proposed road realignment for Route 316.

5.14.5.2 That the Municipality of the District of Guysborough has an opportunity to review the completed Traffic Impact Study and provide comments; that once completed, the Traffic Study be acceptable to NSTPW prior to the issuing of any permits.

5.14.5.3 That the Proponent acquire, at a minimum, an option to purchase the lands required for the development of the proposed Route 316 realignment to ensure that it is a viable proposal and that the Province will not be liable for any land acquisition costs.

5.14.5.4 That the Proponent submit to NSTPW, performance bonds and a commitment regarding the road upgrades and realignment project prior to proceeding with any proposed roadwork, based on industry standards and NSTPW requirements.

Health and Safety (5.15)

5.15.5.1 That the Proponent conduct a baseline Human Health and Safety analysis as a basis for comparison with any future monitoring.

5.15.5.2 That the Proponent consult and work with local and regional protection agencies such as Fire, Ambulance, and Police services and EMO and REET to ensure that the safety concerns and issues associated with industries of this type are fully understood.

5.15.5.3 That as each engineering component design is completed, changed or modified all Health and Safety plans are reviewed and adjusted accordingly by the Proponent to ensure they meet the approval of NSDEL and all other federal and provincial and government departments that may play a role in Health and Safety issues.

5.15.5.4 That the Proponent ensure that appropriate separation distances and protection measures for low level fire sources are identified in the overall site design and report this to the appropriate authorities.

5.15.5.5 That prior to the issuing of any permits, NSDEL and other provincial departments ensure that appropriate inspection and monitoring services are in place and in compliance with regulatory requirements.

Public Consultation (5.16)

5.16.5.1 That the Proponent improve communications with the many stakeholders that were identified by the Proponent and those that identified themselves throughout the Hearing Process, especially those that expressed a lack of communication and involvement, including, but not limited to, residents of Lincolnville, the Assembly of Nova Scotia Mi'kmaq Chiefs and the public.

5.16.5.2 That prior to issuing any permits, the Proponent submit a detailed communications strategy for approval by NSDEL, which outlines the means of improving communications with the public about all aspects of the various projects stages. The strategy shall establish a direct communications link between the Proponent and the public, and provide a means to have all public questions and concerns addressed by the appropriate party. A schedule of further public meetings shall be established. Minutes should be taken for all public meetings, and any meetings of the Community Liaison Committee and must be available for public review. An information kiosk should be set up at the project site to ensure a direct communications link is available.

Need For and Alternatives to the Project (6.1)

6.1.5.1 That the Minister determine whether this project is environmentally (as opposed to economically) sustainable in the sense of sustainability as defined in the Bruntland Report, and make the findings public.

Required Studies, Reports and Plans (6.2)

6.2.5.1 The EIA Report provides a list of studies, reports and plans noted by the Panel which the Proponent has committed to deliver. In addition, the Panel has recommended additional work which will be required (Section 6.2, this Report). The Panel recommends that NSDEL ensure that a complete and accurate list of required studies, reports and plans is developed, and that these documents are provided by the Proponent to NSDEL and other responsible provincial or federal regulatory authorities. It will be the role of each relevant agency to review the appropriate documents prior to the issuing of any permits which would enable the project to proceed. All such studies, reports and plans will be made available to the public once approved.

6.2.5.2 That the Proponent provide to NSDEL and the public a schedule for the preparation and/or review of each required study, plan and report, and a list of public stakeholders and government departments and agencies that could or will be involved with each. NSDEL should create a public web page with this information, and provide online links to studies, plans and reports as they become available.

Mercury Baseline Study (6.3)

6.3.5.1 That the Proponent complete a mercury baseline study prior to the issuing of any permits. The Proponent will develop the sampling plans with NSDEL before doing the study and provide the final study results to NSDEL. The Proponent will:

(a) collect and analyze samples for mercury concentrations in surface water and groundwater at the project site,

(b) collect and analyze seasonal samples for mercury and methylmercury concentrations in surface water, sediment, soils and fish at and around Meadow Lake, and

(c) collect lobster, mussel, sea urchin and clam samples in marine waters within 5 km of the project site and analyze the samples for mercury concentrations. DFO is to be contacted to plan and review this process.

6.3.5.2 That when the construction of all project phases has been completed, the Proponent repeat the mercury study described in Recommendation 6.3.5.1 and report the results to NSDEL.

6.3.5.3 That prior to the issuing of any permits, the Proponent will:

(a) collect additional soil and sediment samples from the project site and from the area that will be flooded around Meadow Lake, and

(b) size fractionate the additional soil and sediment samples to obtain the <63 μm particle size fraction which will then be analyzed for mercury, and

(c) convert the soil and sediment sample results into mercury concentration contour maps for the project site and for the Meadow Lake site.

The Proponent will develop this sampling plan with NSDEL before doing the study and provide the final study results to NSDEL. Arsenic studies will be carried out on these same samples (see Recommendation 5.12.5.1).

Mining (6.4)

6.4.4.1 That NSDEL confirm with NSDNR the status and rights of any mineral licenses and claims on and around the project site. The Panel does not have jurisdiction to deal with any claims for compensation.