

Minister of Indian Affairs  
and Northern Development



Ministre des Affaires  
indiennes et du Nord canadien

Ottawa, Canada K1A 0H4



APR 12 2001

Mr. Gordon Lennie  
Chair  
Mackenzie Valley Environmental Impact  
Review Board  
PO Box 938  
YELLOWKNIFE NT X1A 2N7

Dear Mr. Lennie:

On behalf of the responsible Ministers, with jurisdiction related to this development, I would like to thank you for your letter of February 7, 2001, and the *Report of Environmental Assessment on the Proposed Development of the Sable, Pigeon, and Beartooth Kimberlite Pipes* (the EA Report).

The responsible Ministers would like to initiate consultation with the Mackenzie Valley Environmental Impact Review Board (the Board) as provided for in subsection 130(1)(b)(ii) of the *Mackenzie Valley Resource Management Act* (Act).

Subsection 128(1)(b)(ii) of the Act requires that the Board make a finding that the development is likely "... to have a significant adverse impact on the environment." We would like to consult with the Board on those findings, in particular recommendations 47 and 48, which it concludes are likely to have a significant adverse impact. The proposed modifications and supporting rationale are enclosed.

With respect to the remaining 60 recommendations, the Board did not make a finding of significant adverse impacts regarding each of the matters addressed. Consequently, it is not open to the responsible Ministers to adopt these Board recommendations.

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In the spirit of fostering a sound environmental management, I have instructed Northwest Territories regional officials to provide you with comments on these recommendations, and to forward copies to the Mackenzie Valley Land and Water Board and other regulators for their consideration in the regulatory process.

For your information, I have enclosed a letter from BHP Diamonds Inc., dated March 2, 2001, responding to the EA Report. BHP has addressed each of the 62 recommendations and has committed to undertaking 42 of the recommendations identified in the Board's report.

I understand that the Board will be meeting on April 18, 2001, in Calgary, and I hope you will consider my correspondence at this meeting. Regional officials are available to consult further with the Board in whatever manner you deem most appropriate.

I look forward to hearing from you in the near future.

Yours sincerely,

A handwritten signature in cursive script, appearing to read "Robert D. Nault".

Robert D. Nault, P.C., M.P.

Encl.

c.c.: The Honourable David Anderson, P.C., M.P.  
The Honourable Herb Dhaliwal, P.C., M.P.  
The Honourable Joseph L. Handley, M.L.A.

## ENCLOSURE

### COMMENTS AND MODIFICATIONS REGARDING MEASURES AS PROPOSED BY THE RESPONSIBLE MINISTERS FOR CONSULTATION WITH THE MACKENZIE VALLEY ENVIRONMENTAL IMPACT REVIEW BOARD (the Board)

#### Employment, local business opportunities

##### Recommendation No. 47

The Board's recommendation regarding advance planning for eventual mine closure is feasible. However, since mine life is variable depending on potential for future expansion, it is the Government of the Northwest Territories' view at this time that the parties should further develop a strategy that addresses the effects of a boom-bust cycle resulting from mine closure, to be in place three years prior to the actual closure.

##### Recommendation No. 48

The Board's analysis and conclusion on this aspect appear to have been addressed from the perspective of assessing the impact of the federal-territorial fiscal arrangement on economic diversification in the Northwest Territories. Since the federal-territorial fiscal arrangement is not the development under review, Indian and Northern Affairs Canada concludes this measure to be improper in the context of this assessment.



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BHP Diamonds Inc.

March 02, 2001

Hon. Robert Nault, P.C., M.P.  
 Minister, Department of Indian Affairs  
 and Northern Development (DIAND)  
 Ottawa, ON

**Re: Report of Environmental Assessment on the Proposed Development of Sable, Pigeon and Beartooth Kimberlite Pipes (the "Report"), by the Mackenzie Valley Environmental Impact Review Board (the "Review Board")**

On November 20, 1998, BHP Diamonds Inc. (the "Proponent" or "BHP") applied to the Northwest Territories Water Board for a Water Licence in respect of the Beartooth, Pigeon and Sable Kimberlite Pipes, which Pipes (collectively, the "Proposed Development") constituted an extension of the EKAIT™ Diamond Mine (the "Mine"). Following a preliminary screening conducted under the *Mackenzie Valley Resource Management Act* (the "Act"), the Northwest Territories Water Board referred the Proposed Development on April 16, 1999 to the Review Board for environmental assessment ("EA"). On February 7, 2001, the Review Board issued its Report recommending approval of the Proposed Development subject to the imposition of measures (set out in 62 Recommendations) that it considered necessary to prevent any significant adverse effects from the Proposed Development. As authority for so proceeding, the Review Board quoted subsection 128(1)(b)(ii) of the Act.

Subsection 128(1)(b)(ii) provides:

"On completing an environmental assessment of a proposal for development, the Review Board shall, (b) where the development is likely in its opinion to have a significant adverse impact on the environment, (ii) recommend that the approval of the proposal be made subject to the imposition of such measures as it considers necessary to prevent the significant adverse impact." (emphasis added)

Section 111 of the Act defines "impact on the environment" as meaning "any effect on land, water, air or any other component of the environment, as well as on wildlife harvesting, and includes any effect on the social and cultural environment or on heritage resources."

The Review Board's Report, based on extensive public consultation, spans 58 pages and examines in detail over 25 areas of concern raised in respect of the Proposed Development. The only "significant adverse impact on the environment" found by the



-2-

Review Board in its Conclusions is the impact of "... the federal-territorial fiscal arrangement with respect to the BHP development ... on the GNWT's ability to diversify its economy" (at pages 43, section 4.6.3.3.2.1 and 58, second last paragraph, of the Report). This is an intergovernmental fiscal arrangement over which the Proponent has no control and is powerless to change. Of the 62 Recommendations made by the Review Board, only one addresses this single significant adverse impact (the "Impact") and that Recommendation (#48) is directed of necessity not to the Proponent, but to the Government of Canada. Recommendation #48 proposes reconsideration of the Formula Financing Agreement in order to provide additional revenues to the Government of the Northwest Territories to assist in its expanding role "in the management and mitigation of effects associated with development".

For reasons outlined below, we respectfully submit that the significant adverse impact found by the Review Board is outside the scope of the EA and that all 62 of its Recommendations are ultra vires its jurisdiction under the Act.

As to the issue of scope, the Impact relied upon by the Review Board stems not from the Proposed Development but from a fiscal arrangement that was negotiated between governments well before the Proposed Development was transferred to the EA process. That arrangement was fully considered and dealt with during the original 1995 Environmental Impact Assessment of the Mine. Then, as now, the Proponent has no power to prevent implementation of the existing policy and no ability to vary or amend the terms of the referenced Formula Financing Agreement. Nor can it be said that the Impact arises from the "cumulative effect" of the Mine and the Proposed Development taken together, since the Review Board expressly concluded at page 50 of its Report that the cumulative effects of the Proposed Development "... are not likely to have an adverse impact".

In respect of the Recommendations, contrary to the requirement in subsection 128(1)(b)(ii) of the Act that the recommended measures be necessary to prevent the perceived significant adverse impact, sixty-one of the Recommendations do not specifically address, and cannot prevent, the Impact identified by the Board. The one remaining Recommendation, #48, speaks not to a social or cultural environmental impact arising from the Proposed Development, but rather to the much broader economic and fiscal policy aforesaid which transcends the Proposed Development.

In the result, we believe that the Review Board has not, for the purposes of the Act, submitted a Report that identifies a valid significant adverse impact on the environment resulting from the Proposed Development. We submit that the results of the Report more appropriately support a conclusion under section 128(1)(a) of the Act that would allow the Proposed Development to proceed to the permitting stage.

We are aware that the current situation creates some difficulty for both DIAND and the Review Board. In light of the strictures placed on ministerial approval of the Report under section 130(1) of the Act and with a view to avoiding the possibility of further procedural delay, BHP has, without prejudice to its legal position aforesaid, prepared and submits herewith as Appendix 1 (attached) a response to and plan of action for each of the Review Board's Recommendations. In summary of Appendix 1, BHP is prepared to voluntarily accept, take into consideration when working with project stakeholders, and comply with its interpretation of those Recommendations listed in point A below. Subject to minor modification for reasons set out in Appendix 1, BHP is similarly prepared to voluntarily accept, take into consideration and comply with its interpretation of those Recommendations listed in Point B below. Point C below

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-3-

lists those few remaining Recommendations to which BHP objects for reasons specified below and in Appendix 1.

- A. Recommendations: #1 through 8, 10, 12 through 16, 18 through 21, 23, 28 through 31, 33, 35, 37 through 43, 45, 50, 52 through 55, and 57 through 61.
- B. Recommendations: #9 (deleting the requirement for delivery of climate reports to the Review Board), 11 and 24 (which are duplicative, deleting the word "all" from the recommendation that the existing Aquatic Effects Monitoring Program be expanded to include all potentially affected water bodies), 25 (deleting the requirement for a demonstration that existing water licence discharge criteria will be met, since such manner of proof cannot be obtained until the system is actually implemented), 32 (deleting the proposal for *additional* predictive water change studies), 34 (deleting the proposal that a threshold for phosphorus concentration in Fay Lake be established), 36 (deleting the word "all" from the recommendation for monitoring all receiving waters for the Pigeon diversion channel), 44 (restricting the scope of the proposed adaptation of the existing Wildlife Effects Monitoring Plan to a form of refinement more in keeping with, and achieved through the auspices of, the existing Environmental Agreement), and 52 (deleting the requirement that BHP "evaluate" regional cumulative effects, since the responsibility for such evaluation of necessity lies with the government department that is privy to information provided by all project proponents within a given area, whereas BHP is not so informed).
- C. Recommendations: #17 and 22 are technologically not feasible; #26, 27 and 48 speak to third parties (being the Mackenzie Valley Land and Water Board and the Federal Government), in respect of which BHP as Proponent has no control or procedural input regarding implementation of the Recommendations made; and, #46, 47, 48, 49, 51 and 56 exceed the scope of the EA for the three new Pipes and attempt to revisit issues that were previously considered and addressed as part of the original project approval process in 1995 and to impose new restraints on the entire Mine.

In conclusion we respectfully submit that, in light of both the preceding analysis and the time (already over 27 months) and expense incurred by all parties in reviewing the Proposed Development to date, the EA process as now conducted under the Act has serious weaknesses. The current situation provides a timely example of the many concerns that the industry has with the efficiency and effectiveness of the present regulatory process in the North. We believe that if the present regime continues, future Review Board decisions will be subject to costly procedural attack and that Northern competitiveness for mineral investment will be seriously diminished. To avoid such an outcome, we are keenly interested in working with your officials, other industry representatives and interested parties to improve the efficiency of the regulatory process while ensuring that the Northern environment is protected.

Yours sincerely,



D. Excell

President, EKATI™ Diamond Mine

## **BHP Diamonds Inc.**

### **Detailed Response to MVEIRB Recommendations**

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The Review Board recommends the following:

- 1) That BHP should continue to incorporate pollution prevention measures and best adaptive management practices consistent with the approaches described in their environmental management plans as described in the EAR.

***The Environmental Agreement is an existing mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. This recommendation does not result in a change to what is already done at EKATI™. BHP is of the position that this recommendation is already being fulfilled.***

- 2) That BHP use CAAQO “desirable objectives” in management planning regarding fugitive dust emissions.

***BHP already applies the CAAQO “desirable objectives” in management planning for fugitive dust. This commitment is made in the Air Quality Monitoring Plan developed under the Environmental Agreement. This recommendation does not result in a change to what is already done at EKATI™.™. BHP is of the position that this recommendation is already being fulfilled.***

- 3) That BHP continue with its air quality monitoring program, particularly the TSP sampling during the summer months and that BHP consider measuring inhalable particulates and SO<sub>2</sub> during thermal inversions.

***The Air Quality Monitoring Program has been developed under the Environmental Agreement. The Environmental Agreement is an existing mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. Through this mechanism, BHP will continue to work with Environment Canada, the Government of the Northwest Territories - Department of Renewable Resources, Wildlife and Economic Development (RWED) and other stakeholders to refine the Air Quality Monitoring Program as necessary.***

- 4) That BHP’s climate reports include proper documentation of calibration procedures, error analysis, interpretation, and identify the corrections as part of its QA/QC procedures.

***The Air Quality Monitoring Program has been developed under the Environmental Agreement. As a point of clarification, meteorological data and not climatological data is collected under the Air Quality Monitoring Program. As such, BHP has interpreted this recommendation to refer to the***

**Detailed Response to MVEIRB Recommendations**

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***documentation of data currently collected under the Air Quality Monitoring Program. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. Through this mechanism, BHP will continue to work with stakeholders to refine the reporting aspects of the Air Quality Monitoring Program as necessary.***

- 5) That BHP analyze data in a manner suitable to interpret seasonal trends or occurrences, and reported in a format that demonstrates relevance to conclusions being drawn and provides credibility to the EA process.

***BHP has interpreted this recommendation as referring to the analysis and reporting of meteorological data. BHP will continue to analyze and report meteorological data in a manner suitable for interpretative purposes. This recommendation does not result in a change to what is already done by BHP. BHP is of the position that this recommendation is already being fulfilled.***

- 6) That BHP incorporate discussions of climate change as part of the reporting procedures.

***As climate change is a global issue, BHP cannot address it at the project level. However, BHP will continue to annually report its contribution of greenhouse gases to the atmosphere. In addition, BHP supports initiatives aimed at addressing the issue of climate change- The EKATI™ Diamond Mine is the recent recipient of a Bronze Champion Level Reporter status under the Canada Climate Change – Voluntary Challenge Registry and BHP is involved with the GNWT Greenhouse Gas Strategy. BHP is of the position that this recommendation is already being fulfilled.***

- 7) That BHP provide the results of its greenhouse gas emissions control initiatives to the IEMA.

***BHP reports its greenhouse gas control initiatives as part of annual environmental reporting. Our initiatives are also reported through the Voluntary Challenge Registry ([www.vcr-mvr.ca](http://www.vcr-mvr.ca)). This information is available to all project stakeholders, including the IEMA.***

- 8) That regulators responsible for managing air quality, review BHP's current air quality-monitoring program with a view to improving its design and adding a source of contamination characterization program.

***The Air Quality Monitoring Program has been developed under the Environmental Agreement. The Environmental Agreement is an existing mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. Through this mechanism, BHP will continue to work with Environment Canada, the Government of the Northwest Territories - Department of Renewable Resources, Wildlife and***



**Detailed Response to MVEIRB Recommendations**

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***Economic Development (RWED) and other stakeholders to refine the Air Quality Monitoring Program as necessary.***

- 9) That BHP provide its climate reports to the Review Board and the Independent Environmental Monitoring Agency so that the regulatory authorities may validate the conclusion of the EAR, and determine if BHP is meeting its 1995 EIS predictions.

***Annual reporting of meteorological data is already provided to project stakeholders, including the Independent Environmental Monitoring Agency (IEMA). Meteorological data is also reported as part of the Environmental Impact Reports released once every three years, under the terms of the Environmental Agreement. The Environmental Impact Report provides a comparison of actual results to those predicted. This recommendation does not change what is already done by BHP in terms of reporting. However, this recommendation requests that the Review Board receive these reports. As the Review Board does not have a regulatory role with the project, it is unclear to BHP as to why the Review Board should receive these reports, and as such objects.***

- 10) The Review Board expects BHP to implement any mitigation measures aimed at reducing impacts on terrain as mentioned in its EA report or supporting documents.

***BHP intends to fulfill its commitments to the use of mitigating measures to reduce impacts on terrain as stated in the EAR report.***

The Review Board recommends that the Mackenzie Valley Land and Water Board consider the following:

- 11) That the existing Aquatic Effects Monitoring Program be expanded to include all potentially affected water bodies throughout the development, production, and post-production stages of the mine expansion, and that the AEMP expansion plans should accompany the application for the water license.

***BHP fully intends to expand the Aquatic Effects Monitoring Program (AEMP) as a result of the addition of these three (3) new kimberlite pipes. The AEMP by design requires that sufficient monitoring sites be selected in order to evaluate the spatial extent of any potential effects that might result from the project. However, this does not mean that “all” potentially affected water bodies, as referred to in this recommendation, are added to the AEMP program. As such, BHP takes exception to the word “all” in this recommendation.***

***This recommendation also refers to the submission of AEMP expansion plans as part of the water license application. As part of the regulatory process, BHP can understand the need to discuss changes to the AEMP that are anticipated. BHP has interpreted this recommendation as suggesting that changes to the AEMP be discussed as part of licensing. However, BHP has not interpreted this recommendation to suggest that the actual AEMP document itself be updated in support of the water license application. As has been iterated***

**Detailed Response to MVEIRB Recommendations**

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***several times through the Environmental Assessment process, BHP is committed to updating its plans and procedures as the new resources come on stream. This approach does not result in a change to that which is already done at EKATI™.***

- 12) That BHP prepare a map detailing the potential sources of runoff from the development, how runoff will be controlled and where it will be collected, and that a monitoring station be located at the collection sites during the regulatory phase of the project. Water collected at these stations would be tested for pH, Total Suspended Solids, conductivity, metals, nitrates, nitrites, phosphates.

***BHP concurs that the Mackenzie Valley Land and Water Board may need more detailed mapping to assist in the establishment of Surveillance Network Program (SNP) monitoring stations.***

- 13) That BHP complete the characterization of acid drainage from the Panda Waste Rock pile and an assessment of the proposed frozen perimeter berms before approval of any further waste rock storage at the Panda Waste Rock pile. BHP should complete the full-scale test of the proposed berm design and provide the MVLWB with the results.

***It is BHP's interpretation of this recommendation that the MVLWB should consider not granting approval for the storage of waste rock from the Beartooth pit at the Panda Waste Rock pile before the results of the Enhanced Waste Rock Seepage Monitoring Program and the full-scale results of the proposed perimeter berm concept are available. We do not interpret this recommendation as suggesting restrictions on the placement of the waste rock originating from the Panda Pit to the Panda Waste Rock pile.***

***BHP has committed to assessing the root cause of low pH seepage water in the area of the Panda Waste Rock pile and to investigate the potential application of frozen perimeter berms as a mitigation measure to help control seepage where necessary. Information from this work will be used, in part, to develop Waste Rock Storage Plans for the Sable, Pigeon, and Beartooth pits. As has been iterated several times through the Environmental Assessment process, BHP is committed to updating its plans and procedures as the new resources come on stream. This approach does not result in a change to that which is already done at EKATI™.***

**Detailed Response to MVEIRB Recommendations**

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14) That BHP proceed with its intended waste rock management planning for each of the three pipes. This includes the following work:

- ?? Kinetic testing to address metal leaching potential;
- ?? Quantification of the amount, location and scheduling of the different types of waste rock from the pit, and potential for segregation of this material during mining;
- ?? Potential and methods for segregation of this material if so indicated by kinetic testing results. Alternatively, if there is no significant metal leaching, this material can possibly be disposed of with other waste rock types that may contain sufficient alkalinity to buffer the acidity;
- ?? Definition of the sampling program during mining to identify potentially "reactive" (i.e. generate acidity and/or leach metals) rock and development of criteria for segregation; and
- ?? Provision for drainage water monitoring and collection, if required.

***BHP intends to complete this work as part of the detailed planning process for the development and implementation of Waste Rock Storage Management Plans at Sable, Pigeon, and Beartooth.***

15) The Review Board recommends that the potential interaction between Panda Pit and Beartooth Pit waste rock be evaluated.

***BHP will complete this evaluation as part of the detailed planning process for the development and implementation of Waste Rock Storage Management Plan for Beartooth pit.***

16) That BHP provide the preliminary results of its waste rock sampling program identifying potentially acid generating and metal leaching rock as part of its water licence application.

***BHP has initiated kinetic testing of rock samples obtained from Beartooth, Sable, and Pigeon. Results from these tests will be used in the detailed planning process for the development and implementation of Waste Rock Storage Management Plans. Test results will be made available to the MVLWB as they become available.***

17) That BHP's discharge requirements for waste rock and surface drainage be consistent with the Canadian Council of Ministers of the Environment (CCME) requirements for the protection of freshwater life.

***BHP has objection with this recommendation. BHP does not consider the application of CCME – Canadian Water Quality Guidelines for the Protection of Aquatic Life reasonable or necessary. The natural, background concentrations of some of the potentially regulated parameters are higher than***

**Detailed Response to MVEIRB Recommendations**

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*the CCME guideline criteria. In addition, BHP fails to see the justification from the results of the EAR as to an ecological need to apply this guideline.*

- 18) That BHP complete its studies to evaluate the effectiveness of tundra soils and organics at filtering suspended solids, heavy metals and nitrogen from runoff water.

*BHP intends to continue assessing the effectiveness of the tundra in the removal of specific parameters of concern. The use of the tundra, or “land treatment” is currently being assessed by monitoring seepage water from the Panda Waste Rock pile. In addition to run-off water from Waste Rock, BHP is also intending to evaluate the effectiveness of land treatment for run-off (surface and groundwater) that enters pits. The treatment of pit water through the use of land treatment is currently being considered by BHP at both the Fox and Misery pits. BHP interprets this recommendation as favorable support by the MVEIRB for full scale studies on the feasibility of land treatment.*

- 19) That BHP develop and test contingency plans for dealing with waste rock and surface drainage so that there is no danger of exceeding regulated water license limits.

*BHP has committed to testing the frozen perimeter berm concept. We are also studying the effectiveness of “land treatment” of run-off waters from Waste Rock piles. Information from this work will be used, in part, to develop Waste Rock Storage Management Plans for the Sable, Pigeon, and Beartooth pits. As has been iterated several times through the Environmental Assessment process, BHP is committed to updating its plans and procedures as the new resources come on stream. This approach does not result in a change to that which is already done at EKATI™.*

- 20) That BHP modify its plans under its water license to reflect the proposed changes in operation, including the Acid/alkaline Rock Drainage (ARD) and Geochemical Characterization Plan, the Wastewater and Tailings Management Plan, the Waste Rock and Ore Storage Plan, and the Seepage Surveys. The waste rock management plan needs to address the management of all rock that is generated by the expansion. This plan shall describe operating procedures and how all rock will be managed during construction, mining, and post-closure phases of the project. Rock chemistry data should be provided in support of any decisions as they relate to the plan.

*BHP is committed to updating its plans and procedures as the new resources come on stream. This approach does not result in a change to that which is already done at EKATI™.*

## BHP Diamonds Inc.

### Detailed Response to MVEIRB Recommendations

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- 21) That BHP does not use the waste rock from the proposed pits for construction purposes such as roads and water retention/diversion structures until such time as the waste rock is proven to not have acid generating or metal leaching potential.

***BHP has initiated kinetic testing of rock samples obtained from Beartooth, Sable, and Pigeon. Results from these tests will be used to determine the suitability of specific rock types for use in construction projects. This approach does not result in a change to that which is already done at EKATI™.***

The Review Board recommends that the Mackenzie Valley Land and Water Board consider the following:

- 22) That BHP employ real-time automatic monitoring for TSS during the dewatering of the lakes, instead of relying on grab samples.

***Total Suspended Solids (TSS) cannot be measured directly using real-time, automatic samplers. As the technology does not exist for this type of measurement, neither the Mackenzie Valley Land and Water Board nor BHP will be able to consider this recommendation.***

- 23) That BHP collect baseline data from the downstream water bodies to test its prediction of negligible impacts.

***BHP fully intends to collect baseline data from appropriate downstream water body(ies) prior to dewatering. Baseline data will be compared with data collected after dewatering is complete to confirm that there have been negligible impacts.***

The Review Board recommends that the Mackenzie Valley Land and Water Board consider the following:

- 24) That the existing Aquatic Effects Monitoring Program be expanded to include all potentially affected water bodies throughout the development, production, and post-production stages of the mine expansion, and that the AEMP expansion plans should accompany the application for the water license.

***This recommendation and recommendation number 11 are one in the same.***

***BHP fully intends to expand the Aquatic Effects Monitoring Program (AEMP) as a result of the addition of these three (3) new kimberlite pipes. The AEMP by design requires that sufficient monitoring sites be selected in order to evaluate the spatial extent of any potential effects that might result from the project. However, this does not mean that “all” potentially affected water bodies, as referred to in this recommendation, are added to the AEMP program. As such, BHP takes exception to the word “all” in this recommendation.***



**Detailed Response to MVEIRB Recommendations**

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***This recommendation also refers to the submission of AEMP expansion plans as part of the water license application. As part of the regulatory process, BHP can understand the need to discuss changes to the AEMP that are anticipated. BHP has interpreted this recommendation as suggesting that changes to the AEMP be discussed as part of licensing. However, BHP has not interpreted this recommendation to suggest that the actual AEMP document itself be updated in support of the water license application. As has been iterated several times through the Environmental Assessment process, BHP is committed to updating its plans and procedures as the new resources come on stream. This approach does not result in a change to that which is already done at EKATI™.***

- 25) That BHP acquire and present additional information on expected quantity and quality of pit water from the Sable Pit and, subsequently, Two Rock Lake and demonstrate that pit water additions from the Pigeon and Beartooth Pits will not compromise existing discharge limits or loading to the Lac de Gras Watershed.

***In the EAR and supporting Information Requests, BHP characterized the expected water quality and quantity of pit water that would be treated in either the Long Lake Containment Facility or Two Rock Lake. Discharge characteristics of the water released from the treatment facilities were also discussed in the EAR.***

***BHP will provide the MVLWB, should it be needed to assist in drafting a water license, additional available and reasonable information on the expected water quality and quantity characteristics of pit water from Sable, Pigeon and Beartooth. However, BHP will not be able to “demonstrate” that the existing water license discharge criteria will be met until the system is actually put into place.***

- 26) That the MVLWB establish limits for phosphorus loading.

***While BHP cannot determine or control the processes of the MVLWB, we are prepared to work with them to establish reasonable limits for phosphorous in effluent discharges.***

- 27) That the MVLWB regulate for ammonia in effluent discharges to ensure that aquatic life is protected.

***While BHP cannot determine or control the processes of the MVLWB, we are prepared to work with them to establish reasonable limits for ammonia in effluent discharges.***

- 28) That BHP establish a monitoring site in Cell 2 of Two Rock Lake and that monitoring be conducted for pH, Total Suspended Solids, conductivity, metals, nitrates, nitrites, phosphates, and ammonia.

***BHP concurs that there may be a water monitoring site located in Two Rock Lake.***

## BHP Diamonds Inc.

### Detailed Response to MVEIRB Recommendations

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- 29) That BHP prepare a contingency plan to treat Two Rock Lake water if the effluent is not appropriate for discharge.

***As stated in the EAR and supporting Information Requests, BHP anticipates that the effluent from Two Rock Lake will be suitable for discharge to the environment. BHP concurs that contingency plans need to be available should this not be the case. BHP suggested as part of the EAR that land treatment, should it be proven successful at Fox and/or Misery, may be used as a contingency to treat the effluent of Two Rock Lake should it not meet regulated discharge limits. As a final contingency, BHP would simply not discharge from Two Rock Lake if the water quality does not meet licensed discharge requirements.***

- 30) That BHP not use the Sable sump water for watering roads.

***BHP does not intend on using sump water directly from Sable Pit to water roads.***

The Review Board recommends that the Mackenzie Valley Land and Water Board consider the following:

- 31) That BHP establish SNP Stations and Aquatic Effects Monitoring Stations in appropriate locations to ensure that the Ursula Basin is sufficiently monitored.

***BHP fully intends to expand the Aquatic Effects Monitoring Program (AEMP) as a result of the addition of these three (3) new kimberlite pipes. The AEMP by design requires that sufficient monitoring sites be selected in order to evaluate the spatial extent of any potential effects that might result from the project. Potential effects to the Ursula Basin are limited to the use of water to refill the pit upon completion of mining. BHP concurs that appropriate AEMP location(s) need to be considered to monitor for potential effects from this activity.***

- 32) That BHP undertake a water balance study to predict changes to water quantities in downstream waters and to assist with on-site water management.

***In the EAR and supporting Information Requests, BHP updated its water balance for the Long Lake Containment Facility and characterized the expected water discharge from Two Rock Lake. BHP does not concur that the MVLWB need to consider additional predictive studies. However, BHP fully intends to monitor the potential downstream effects from water management activities as part of the Aquatic Effects Management Program (AEMP). This approach does not result in a change to that which is already done at EKATI™. Monitoring for potential effects provides an opportunity to refine water management activities should it prove necessary.***

**Detailed Response to MVEIRB Recommendations**

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- 33) That BHP to implement any mitigation measures aimed at reducing impacts on ground water balance as reported in its EA report or supporting documents.

***BHP intends to fulfill its commitments to the use of mitigating measures to reduce impacts on groundwater as stated in the EAR report.***

- 34) That BHP continue to collect baseline data for Fay Lake in order to better quantify potential changes that could result from the construction of the stream diversion. This should include the establishment of a threshold phosphorus concentration in Fay Lake.

***BHP fully intends to collect necessary baseline data for Fay Lake prior to commencing activities associated with construction of the Pigeon Diversion Channel. Baseline data will be compared with data collected after construction and during operation to better quantify potential changes.***

***BHP has objection with the establishment of a threshold for a phosphorus concentration in Fay Lake. Should the MVLWB consider a threshold criteria for phosphorus be necessary, it should be for the discharge to the lake, not the lake itself. Changes to lake water quality are addressed through the monitoring conducted as part of the Aquatic Effects Monitoring Program (AEMP). Mitigation through the AEMP is in response to the potential for adverse effects, not in response to a threshold concentration for any given water quality parameter.***

- 35) That BHP prepare a contingency plan to deal with an increase in primary producer biomass downstream of the diversion channel.

***BHP concurs that contingency plans need to be available should adverse effects be detected that are the result of BHP activities. However, any increases in primary producer biomass associated with construction activities are expected to be minor and not result in adverse impacts. BHP suggests that contingency plans would only be implemented should adverse effects be predicted based on primary producer biomass monitoring results and that these adverse effects are likely the result of BHP activities, and not a natural occurrence. Adverse effects would most likely be due to resulting low winter dissolved oxygen concentrations, and not primary producer biomass directly. An increase in primary producer biomass is not considered an adverse effect on its own. BHP has interpreted this recommendation to suggest that contingency plans be developed in any case, and BHP concurs.***

- 36) That BHP place silt curtains in Fay Lake before opening the Pigeon diversion channel, and that all receiving waters be monitored for changes once the channel is open.

***BHP fully intends on installing silt curtain(s) at the outlet of Pigeon Stream. BHP also intends on monitoring downstream water body(ies) as part of the Aquatic Effects Monitoring Program (AEMP). . The AEMP by design requires***

**Detailed Response to MVEIRB Recommendations**

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*that sufficient monitoring sites be selected in order to evaluate the spatial extent of any potential effects that might result from the project. However, this does not mean that “all” potentially affected water bodies, as referred to in this recommendation will be monitored. As such, BHP takes exception to the word “all” in this recommendation.*

- 37) That the BHP Aquatic Effects Monitoring Program be modified to include the Pigeon area and that a monitoring regime established for the Pigeon Diversion Channel.

*BHP concurs that the Aquatic Effects Monitoring Program (AEMP) will be modified to include the Pigeon Area. BHP also anticipates monitoring the Pigeon Diversion Channel to confirm that it is operating as intended.*

- 38) That BHP continues negotiating with DFO to satisfy the “no net loss” objective.

*BHP is currently negotiating with DFO and will continue to do so in pursuit of a Fisheries Authorization.*

The Review Board recommends the following:

- 39) The Review Board expects that BHP will implement its commitments as stated in the EAR and supporting documentation.

*BHP intends to fulfill its commitments to the use of mitigating measures to reduce impacts on vegetation and plant communities as stated in the EAR report.*

The Review Board recommends that the following be considered in the regulatory process:

- 40) That BHP complete kimberlite toxicity testing on the kimberlite from the Sable, Beartooth, and Pigeon pits before filling of Beartooth Pit with fine kimberlite (i.e. fine tailings from the new pits) in order to demonstrate that processed kimberlite will not pose a threat to the aquatic system.

*Our interpretation of this recommendation is that the Mackenzie Valley Land and Water Board consider the use of standard bioassay tests to confirm the toxicity of these specific kimberlites. BHP is prepared to complete these tests, should the Mackenzie Valley Land and Water Board consider them necessary.*

*BHP notes however that toxicity testing will not, as is implied by this recommendation, fully demonstrate whether processed kimberlite will or will not pose a threat to the aquatic system when introduced as a component of a pit lake. BHP suggests that the only means in which the resulting water quality can be determined with any certainty is with full- scale development of a pit lake. As stated in the EAR, BHP is confident that a productive pit lake can be established at Beartooth. Should this not be the case, BHP would implement contingency plans as necessary.*

**Detailed Response to MVEIRB Recommendations**

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- 41) That BHP prepare a contingency plan for Beartooth Pit in the event that water quality in the Beartooth pit makes fish habitat impossible, the proper stratification of the lake does not occur, or that the water quality parameters in the reclaimed pit is not be suitable for fish habitat.

***BHP concurs that contingency plans need to be available should potential adverse effects from the Beartooth pit lake to the receiving environment develop. Should the potential for adverse effects exist, the processed kimberlite and/or overlying water could be pumped to the Long Lake Containment Facility. The EAR clearly illustrated that the Long Lake Containment Facility will have excess capacity for this material should it be necessary.***

The Review Board recommends the following:

- 42) The Review Board expects BHP to implement any mitigation measures aimed at reducing impacts on wildlife mentioned in its EA report or supporting documents. The Review Board also recommends that BHP, with the assistance of appropriate regulatory agencies and aboriginal organizations, consider expanding its wildlife monitoring to evaluate the accuracy of its predictions.

***BHP intends to fulfill its commitments to the use of mitigating measures to reduce potential impacts on wildlife as stated in the EAR report.***

***The Wildlife Effects Monitoring Plan has been developed under the Environmental Agreement. The Environmental Agreement is an existing mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. Through this mechanism, BHP will continue to work with regulatory agencies, aboriginal organizations and other stakeholders to refine the Wildlife Effects Monitoring Plan as necessary. Annual workshops are hosted by BHP to discuss potential changes to the Wildlife Effects Monitoring Plan. BHP intends to continue to use this forum as one of the means to discuss program refinement.***

- 43) That BHP limit traffic on the Sable access road from the Pigeon lease area, north to the Sable site during caribou migration periods to that described in the BHP EAR. That BHP establish a monitoring program for the road in collaboration with aboriginal organizations. Given the importance of caribou, it is essential that the study approach be scientifically sound, take advantage of traditional knowledge, and ensure adequate data collection for improving prediction confidence for future effects and cumulative effects assessments.

***BHP intends to fulfill its commitments to the use of mitigating measures to reduce potential impacts on wildlife as stated in the EAR report.***

***The Wildlife Effects Monitoring Plan has been developed under the Environmental Agreement. The Environmental Agreement is an existing***



**Detailed Response to MVEIRB Recommendations**

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***mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. Through this mechanism, BHP will continue to work with regulatory agencies, aboriginal organizations and other stakeholders to refine the Wildlife Effects Monitoring Plan as necessary. Annual workshops are hosted by BHP to discuss potential changes to the Wildlife Effects Monitoring Plan. BHP intends to continue to use this forum as one of the means to discuss program refinement.***

- 44) That BHP and the GNWT contribute resources, and the YDFN participate in adapting the existing wildlife effects monitoring program to address the issues identified by GNWT in its Technical Report to the Review Board.

***BHP objects to this recommendation due to its broad nature. This recommendation infers that the Wildlife Effects Monitoring Plan be adapted to address all of the issues contained in the Technical Report submitted by the GNWT to the Mackenzie Valley Environmental Impact Review Board. BHP cannot commit to addressing all of the recommendations related to wildlife that are contained in a technical submission that is in excess of 50 pages long. However, BHP is committed to continue to work with GNWT, aboriginal organizations and other stakeholders to refine the Wildlife Effects Monitoring Plan as necessary. Refinement to the Wildlife Effects Program will be made through the mechanism of the Environmental Agreement. The Environmental Agreement is an existing mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine.***

- 45) That BHP complete a heritage resource impact assessment before proceeding with the proposed development. Should heritage sites be uncovered then an approved mitigation plan be completed and implemented before development proceeds.

***Under the Archaeological Management Plan, BHP has recently completed an assessment of the areas of development. The results of this assessment will be reported through existing mechanisms and will be used in the planning of appropriate mitigation as necessary.***

***The Archaeological Management Plan has been developed under the Environmental Agreement. The Environmental Agreement is an existing mechanism in place at EKATI™ to aid in sound environmental management. This recommendation simply reaffirms the use of a mechanism to which we have committed ourselves for the life of the mine. This recommendation does not result in a change to what is already done by BHP.***

- 46) The Review Board recommends that BHP and the GNWT undertake a study to determine the impact of rotational work on Aboriginal and non-Aboriginal people working at BHP.

***BHP has objection with this recommendation. The rotational work schedule at the EKATI™ Diamond Mine was extensively studied as part Environmental***

**Detailed Response to MVEIRB Recommendations**

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**Assessment Review Process (EARP) in 1995. The EKATI™ Diamond Mine was approved to proceed based on the use of a rotational work schedule. In addition, the Socio-Economic Agreement between GNWT and BHP provides mechanisms such as an attitudinal survey and health and wellness report to collect additional information on the impact of rotational work, should it be necessary. Under the GNWT Labour Standards Act, BHP must regularly apply for a permit that allows a non-traditional work shift. To obtain this permit, a majority of employees must agree to the shift. With these tools, BHP is of the position that sufficient mechanisms exist to determine the impact of rotational work.**

**More importantly, BHP contends that this recommendation is inconsistent with the scope of the environmental assessment. The rotational shift in question is not related to a change that has resulted from the addition of three (3) kimberlite pipes.**

- 47) The Review Board recommends that the GNWT, BHP, and other responsible parties begin planning, as soon as possible, for the eventual closure of the mine, and the resulting effects on employees to avoid the effects of a boom-bust cycle.

**BHP has objection with this recommendation, particularly the reference of planning 'as soon as possible'. BHP contends that this recommendation is inconsistent with the scope of the environmental assessment. The approach to eventual mine closure has not changed as a result of the addition of three (3) kimberlite pipes.**

**The eventual closure of the mine was a subject of discussion as part of the Environmental Assessment Review Process (EARP) in 1995. In the Environmental Impact Statement (EIS) completed in support of EARP, BHP acknowledged our responsibility to assist employees at the end of the economic life of the mine. BHP outlined the program that had been developed for the Island Copper Mine in British Columbia as an example of BHP's commitment. In addition, Clauses 9.3.1 and 9.3.2 of the existing Socio-Economic Agreement specifically address this issue.**

- 48) The Review Board recommends that the Government of Canada reconsider the Formula Financing Agreement and that the GNWT be provided additional revenues to support, and where necessary, expand its role in the management and mitigation of effects associated with development.

**This recommendation is directed to the Federal Government. However, BHP contends that this recommendation is inconsistent with the scope of the environmental assessment. The Formula Financing Agreement is not related to a change that has resulted from the addition of three (3) kimberlite pipes at EKATI™.**

## BHP Diamonds Inc.

### Detailed Response to MVEIRB Recommendations

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The Review Board recommends that the Mackenzie Valley Land and Water Board consider the following:

- 49) That BHP work with the GNWT to establish specific goals for revegetation. These goals should be quantitative to allow future monitoring to determine a measure of success.

***BHP has objection with this recommendation. Quantitative goals for revegetation are not practical given the early stage of reclamation at the mine site. Furthermore, the current A&R plan has been developed in accordance with existing DIAND guidelines. There are no differences in the mining methods at Sable, Pigeon, and Beartooth that justify a fundamental change in the way in which revegetation goals are measured. In any case, this recommendation is directed at the entire EKATI™ operation, and not just the three (3) new pipes, and as such is beyond the scope for which this environmental assessment is based. This being said, results from on-going reclamation research and progressive reclamation will continue to be used to assist in the refinement of the A&R plan.***

***In addition, the Environmental Agreement provides a mechanism for GNWT and other stakeholders to work with BHP on program refinements. Through the mechanism of the Environmental Agreement, BHP will continue to work with regulatory agencies and other stakeholders to refine the A&R Plan as necessary.***

- 50) Given the substantial amounts of lake bottom sediments and overburden that can be salvaged, BHP should consider every possibility to use this material for revegetation and restoration purposes in order to produce a productive landscape.

***BHP will continue to evaluate available materials for use in revegetation and restoration. This recommendation does not result in a change to what is already done at EKATI™.***

- 51) BHP should actively reconsider the restoration and revegetation of the waste rock piles as part of its abandonment and restoration plan.

***BHP has objection with this recommendation. The restoration and revegetation of waste rock piles was considered as part Environmental Assessment Review Process (EARP) in 1995 and has since been considered in the development of the Abandonment and Restoration (A&R) Plan. There are no differences in the mining methods at Sable, Pigeon, and Beartooth that justify a fundamental change in the way in which waste rock piles are restored. In any case, this recommendation is directed at the entire EKATI™ operation, and not just the three (3) new pipes, and as such is beyond the scope for which this environmental assessment is based.***

- 52) BHP should avoid the possible harmful effects of introducing non-indigenous plant species into the area during the reclamation by maximizing the use of local species.

**Detailed Response to MVEIRB Recommendations**

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***BHP will continue to preferentially use indigenous materials for use in reclamation. This recommendation does not result in a change to what is already done at EKATI™.***

- 53) That BHP should include the habitat loss due to these three new pipes as part of its annual reporting.

***BHP currently reports annual habitat loss as the result of development activities. This recommendation does not result in a change to what is already done at EKATI™.***

- 54) BHP should address the issue of long-term monitoring of the pits flooding as it progresses over a 10-20 year period after closure to ensure that water quality is maintained.

***BHP interprets this recommendation as suggesting that the water quality should be monitored when refilling open pits and establishing pit lakes. BHP concurs that a monitoring program will need to be developed for these activities.***

- 55) Hydrometric stations be installed and properly operated at source water bodies which will be used for water sources for the infilling of the pits. The stations should be installed for several years in advance of the withdrawals.

***BHP concurs with this recommendation.***

- 56) That the YDFN, EC, and DFO be involved in and advised on the study to assess the toxicity of processed kimberlite and other potential environmental impacts of the presence of processed kimberlite in the reclaimed lake. This study should include an updated geochemical characterization of slurry solids and pond water from the lower end of cell B in Long Lake, along with the results of toxicity test work being undertaken in the impoundment facility.

***BHP has objection with this recommendation on the basis that further study of the toxicity of the Long Lake Containment Facility is outside of the scope of this environmental assessment. The Long Lake Containment Facility is an existing and approved system, and the addition of three (3) kimberlite pipes does not result in a change to how the system is operated.***

***In addition, BHP notes that further toxicity testing will not, as is implied by this recommendation, fully demonstrate whether processed kimberlite will or will not pose a threat to the aquatic system when introduced as a component of a pit lake. An extensive kimberlite toxicity study has already been conducted by BHP as a condition of its current water license.***

***BHP suggests that the only means in which the resulting water quality can be determined with any certainty is with full- scale development of a pit lake. As***

## **BHP Diamonds Inc.**

### **Detailed Response to MVEIRB Recommendations**

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***stated in the EAR, BHP is confident that a productive pit lake can be established at Beartooth. Should this not be the case, BHP would implement contingency plans as necessary.***

57) That BHP continues negotiating with DFO to satisfy the “no net loss” objective.

***This is the same recommendation as number 38.***

***BHP is currently negotiating with DFO and will continue to do so in pursuit of a Fisheries Authorization.***

58) That BHP’s proposed mitigation measures for the breaching of dams and dykes be incorporated into the water license.

***BHP intends to fulfill its commitments to the use of mitigating measures for the breaching of dams and dykes as outlined in the Environmental Assessment Report.***

59) That BHP monitor water quality during and after the breaching of the dykes to ensure that discharge criteria are maintained. Appropriate contingency plans need to be prepared in the event that water of unacceptable quality is released to the environment.

***BHP anticipates that the Mackenzie Valley Land and Water Board will establish limits on the discharge water quality during the breaching of dams and dykes. BHP concurs that contingency plans need to be available should the water quality degrade during the course of this activity.***

60) The Review Board recommends that the appropriate regulatory agencies take into account the effect of the environment on the development proposal during the regulatory phase.

***BHP anticipates that appropriate regulatory agencies will take this into account.***

The Review Board recommends the following:

61) That DIAND and EC jointly initiate an evaluation of the cumulative effects of total loadings of nutrients and metals into Lac de Gras watershed, and that the resulting long term effects on this oligotrophic system. BHP and Diavik, and others, as requested, shall assist DIAND and EC by providing the monitoring and predictive data needed to examine the anticipated total loadings of contaminants into the Lac de Gras watershed.

***BHP concurs and will provide DIAND and EC any data that is collected as part of normal monitoring activities at EKATI™ to assist in the implementation of this recommendation. BHP, as a representative of the NWT Chamber of Mines is actively involved as a steering committee member for the development of a Cumulative Effects Assessment and Management Framework (CEAMF) for the***



**Detailed Response to MVEIRB Recommendations**

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***Northwest Territories. As such, BHP understands the importance of site specific data for use regional monitoring efforts.***

- 62) That BHP to implement any mitigation measures aimed at reducing cumulative impacts as reported in the EAR and supporting documents. The Review Board also recommends that BHP, with the assistance of appropriate regulatory agencies and aboriginal organizations, consider expanding its socio-economic and wildlife monitoring to evaluate the accuracy of its cumulative effects predictions.

***BHP intends to implement the mitigation measures discussed in the EAR and supporting documents. BHP contends that mitigation of project level effects is the only means in which individual proponents can reduce the potential for cumulative effects.***

***However, BHP has objection with the recommendation to expand the socio-economic and wildlife monitoring programs to evaluate regional cumulative effects. The evaluation of regional cumulative effects is not the responsibility of any one proponent, it is seen as a responsibility of government.***