EKATI DIAMOND MINE ICRP COMMENT /RESPONSE TABLE – SECTION 2

<u>ICRP Sections in this Review:</u> Section 6.1. Open Pits Section 6.2. Underground Mines Section 6.3 Waste Rock Storage Areas Appendix D (Section 6.1 – 6.3)

Note: WLWB directives in blue font.

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
	DFO-13 (July 27/07)	Section 6.1.4.1	Pit Lakes Fish Habitat	BHPB is proposing the construction of a channel between Panda Pit Lake and Koala Pit Lake (including Koala North) to reconnect surface drainage, and once water quality criteria are met flow will be reconnected from Koala Pit Lake to Kodiak Lake. Again, if water quality criteria is met and a shallow zone is created in the pit lakes to promote colonization of benthic invertebrates and plants, DFO is of the opinion that efforts should be directed to enhancing fish passage between the lakes rather than constructing fish barriers.	 DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes. This response addresses comments from Working Group reviewers regards commitment from BHPB to create littoral zone areas, beach areas, and/or aquatic systems that support fish habitat in the end pit lakes, to reclaim the flooded open pits to fish habitat, or at least to conduct experiments and investigations in relation to the same. BHPB does not agree that it would be feasible or practical to create or research the creation of fish habitat in pit lakes at EKATI, or that by doing so would be consistent with the reclamation goal for the following reasons: DFO has signed Fisheries Act authorizations (FAA) and Compensation Agreements with BHPB which establish that fish habitat lost through the project has been compensated for and is not a reclamation requirement. FAA and Compensation Agreements were established through review of recommendations made by the EIARP, and comprehensive input from all interested and affected parties. By asking BHP Billiton to commit to the creation of fish habitat, or the investigation of the Compensation Agreement and the FAA. Because BHPB has already compensated for fish habitat loss, DFO is seeking to alter the terms of the Compensation for fish habitat loss, DFO is recent recommendation for fish habitat loss, DFO's recent recommendation for fish habitat loss, DFO's recent recommendation for fish habitat replacement in pit lakes, goes beyond BHP Billiton's responsibilities of returning the EKATI Diamond Mine to a viable self-sustaining ecosystem, to a more enhanced ecosystem, with more fish habitat than avisted originally. 	No Revision Proposed		
2	INAC-33 (July 27/07)	Section 6.1	Pit Lakes Fish Habitat	INAC-WRD understands that BHPB plans to connect pit lakes but eliminate the potential for fish passage to and through pit lakes. It is assumed that this is the proposed option as the water quality is not expected to be acceptable to fish. If this is the case, how does BHPB propose to limit the amount of water that enters the receiving environment downstream of the pit lakes, as these discharges will also affect fish further downstream? On the other hand, if it is demonstrated that the water quality is acceptable/sufficient for fish, why would fish passage not be allowed? Note, INAC-	The reasoning for preventing fish passage into pit lakes is because BHPB has already compensated for fish habitat loss through FAA and Compensation agreements through DFO. Refer to Tracking # 1 for discussion on fish habitat in pit lakes, and to Appendix C, Table 21, Wildlife 1. Fish barriers have not been proposed for the reason of poor water quality in pit lakes. The ICRP has closure objectives and criteria in place for water quality discharge. Please refer to Appendix C, Table 21, Water 4.	Section 6.1.4 will be updated to provide the reason for fish barriers to pit lakes.		

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				WRD suggest that BHPB investigate the creation of littoral zones further and that these investigations should not be contingent on whether or not fish passage is expected.				
3	INAC-48 (July 27/07)	Appendix C Table 21	Pit Lakes Fish Habitat	Wildlife 1. Uncertain if fish barriers are required (research, modeling and monitoring is needed to determine if barriers are required?).	As outlined in the ICRP, fish barriers will be constructed to prevent fish passage into pit lakes. The design of the barriers will be assisted by communities. Pit lake water that flows from the pit lakes to downstream lakes will meet the water license discharge criteria. See Volume 1, Section 3.2.4 for discussion on Community participation in fish barrier design, and Section 6.1.4 for discussion on final landscape with fish barriers. Refer also to Tracking # 2.	No Revision Proposed		
4	JW-2 (Aug 14/07)	Section 6.1 Page 84 (top of page)	Pit Lakes Fish Habitat	Assumption that boulder fields are fish barriers – (used as reclamation feature to prevent fish passage (e.g., p99 2 nd Par)) – with the wide range in flow character through snowmelt to low summer conditions – is there an implied intent to allow a minimum amount of fish passage or none at all?	Fish barriers will be created with the intent of not allowing any fish to travel through connecting streams into pit lakes. See Tracking # 1 and 2.	No Revision Proposed		
5	DFO-15 (July 27/07)	Section 6.1.7.2	Pit Lakes Fish Habitat	 BHPB states that "lake productivity is expected to be low because only limited littoral development will be possible on the steep pit slopes, and the large depths of the pit lakes will result in lost nutrients from the water column". If an effort is put forth to create littoral zone areas, lake productivity should increase which will also be beneficial to downstream aquatic habitat. A pit lakes pilot study should be conducted as soon as a pit becomes available, to determine if there are any issues with water quality and other parameters that need to be addressed prior to pump flooding any other pits. A contingency plan should be developed that describes what BHPB proposes to do if water quality criteria designed to protect aquatic life cannot be met for the pit lakes. This should be included as part of the Adaptive Management Plan that is yet to be completed. 	 WLWB Aug 14, 2007 - The WLWB agrees that contingencies and adaptive management strategies will be integral to the reclamation of EKATI. However, the Adaptive Management Plan required under Part H, item 7 of WL MV2003L2-0013 is meant for the active mining phase. The WLWB will consider the comment to be a recommendation that the ICRP should included separate contingencies and adaptive management strategies specific to closure. This is done with the recognition that information contained within the Adaptive Management Plan for the mining phase will feed into the adaptive management strategies for closure. BHPB is to address this recommendation in their response to review comments. BHPB. Please see Tracking # 1 for discussion on fish habitat in pit lakes. Please refer to Tracking # 285 in regards to an Adaptive Management Plan for Closure. 			
6	DFO-11 (July 27/07)	Section 6.1.4	Pit Lakes Fish Habitat	BHPB states that "the pit lake will have steep high walls remaining around some of the pit lake perimeter, which will provide raptor nesting locations, while other areas of the lake edge will be sloped back to allow wildlife access and/or egress. Beach areas that are able to support riparian habitat will be encouraged through stabilization work and some plant seeding if required. Fish passage or habitat will not be constructed in the pit lakes, and fish access will be prevented by the use of fish barriers". DFO supports this integrated approach but is of the opinion that fish access must be considered in long- term reclamation plans. DFO supports the creation of shallow littoral areas to increase diversity and	Please refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision	· · · · · ·	
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				productivity of the aquatic ecosystem as well as near- shore riparian areas. To reiterate, DFO does not consider the creation of littoral areas in the end pit lakes to be fish habitat compensation but part of an overall reclamation plan that takes into account terrestrial and aquatic ecosystems. If there are certain areas of the pit lake edge that are important for raptor nesting DFO supports their protection.				
7	DFO-1	Appendix C Table 21	Pit Lakes Fish Habitat	Comment carried forward from Section 1. (DFO-2) The reclamation goal should also apply to aquatic ecosystems. End pit lakes should be designed to provide and function as fish habitat (ie. Sloping the last bench of the pit to create a littoral zone) if feasible and practical.	DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		
8	DFO-2	Section 6.1	Pit Lakes Fish Habitat	Comment carried forward from Section 1. (DFO-3) DFO does not believe that refining the ICRP to focus on end pit lakes as fish habitat rather than just large pits holding water is contrary to the intentions of the plan. As stated on page 31: <i>This ICRP is an interim plan</i> designed for an operating mine that has a substantial mine life remaining. This interim plan is conceptual in nature and the detail included is appropriate for this stage of closure planning. As the ICRP is updated in the future, further detail will continue to be refined when results of ongoing and planned research studies are known. A final closure plan will be prepared and submitted at least 2 years before final closure of the mine. DFO believes if research addresses the concerns associated with end pit lakes, it is important that self- sustaining aquatic ecosystems are established after mine closure.	 WLWB April 13, 2007 – As this comment relates to a specific mine component it will be more fully discussed at the Working Group Meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO. BHPB. DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes. 	No Revision Proposed.		
9	DFO-3	Appendix F	Pit Lakes Fish Habitat	Comment carried forward from Section 1. (DFO-4) DFO recognizes that there are concerns with end pit lakes becoming nutrient sinks; however, DFO advocates conducting end pit lake experiment(s) to determine if nutrient sinks concern is valid. Research needs for successful closure of mine components will evolve through the life of the mine and will draw heavily on our existing environmental programs. DFO recommends that an end pit lake experiment should be included as a high priority for BHPB when refining the detailed reclamation research program for the end pit lake component.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at the Working Group Meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO. BHPB. BHPB agrees that research needs to be conducted on pit lakes as nutrient sinks. However the focus of this research would be the examination of how nutrient loss in pit lakes might affect downstream aquatic ecosystems. BHPB. DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes. 	Appendix F, Table 43, will be reviewed and updated to ensure that research is conducted on nutrient loss in pit lakes and how this could potentially affect downstream aquatic ecosystems.		
10	DFO-7	Section 6.1	Pit Lakes Fish Habitat	Comment carried forward from Section 1. (DFO-8) On page 116, Appendix C BHPB states that: The biological stability of the closed site and potential effects on the surrounding environment are closely related to methods of reclamation, the end land use, and the physical and chemical characteristics of the site. Biological stability at EKATI applies to vegetation, aquatic habitats, and wildlife habitats, and is reached	WLWB April 13, 2007 – As this comment relates it will be more fully discussed at the Working Group Meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO.	No Revision Proposed.		

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				when these habitats are stable, self-sustaining, and productive, and meet the agreed stakeholder requirements. To reiterate, DFO believes that the end pit lakes (aquatic habitats) should be designed to be stable, self-sustaining and productive. This would be valuable for both fish and wildlife.	BHPB. BHPB agrees with DFO that end pit lakes should be stable, pit perimeters productive and safe for people and wildlife use, and the water flowing from the lakes meet water quality criteria that is safe for downstream aquatic ecosystems and for human use. DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes.			
11	DFO-8	Appendix G	Pit Lakes Fish Habitat	Comment carried forward from Section 1.(DFO-9) Post closure monitoring should include components related to end pit lakes being designed to support fish, especially over-wintering populations.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at the Working Group Meeting for open pits/LLCF. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO. BHPB. DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes. 	No Revision Proposed.		
12	JW-13 (Aug 14/07)	Section 6.1 Page 104 (top of page)	Pit Lakes Fish Habitat	In some cases, fish passage is being "prevented" (e.g., Fox) and in other cases its being "discouraged" (e.g., Beartooth). Are there different objectives for each "pit system"? and what is the level of certainty of success?	The objective for all pits lakes is the same. Fish passage into all the pit lakes will be prevented. (Reference Section 6.1.4, and Appendix C, Table 21, Wildlife 1). The level of certainty will be determined through the design process. Please also reference Section 3.2.4 for discussion on	The ICRP (in particular Sections 6.1 and 6.4) will be reviewed to ensure consistent language is used for the purpose of fish barriers to pit lakes and the LLCF.		
13	DFO-9 (July 27/07)	Section 6.1.2	Pit Lakes Fish Habitat	 In this section, BHPB states that fish habitat that was lost due to dewatering of Beartooth, Panda, Koala North, Fox and Misery lakes as well as the fish habitat that will be lost due to the Sable, and Pigeon developments has been compensated for through Department of Fisheries and Oceans Authorizations and that "as a result, replacement of fish habitat in pit lakes is not a requirement for reclamation and closure of open pits and accordingly is not part of the 2007 ICRP". It is DFO's opinion that the compensation provided under the <i>Fisheries Act</i> authorization does not preclude reclamation work being conducted in the aquatic ecosystem. DFO agrees with BHPB that the key objectives of a closure plan should be, as described in the December 1994 <i>Project Description Report</i>, to "minimize disturbances to the environment and to attempt to restore the site and watercourses to original undisturbed conditions". DFO's decision regarding the Fisheries Act Authorization was largely based on the understanding that BHPB would follow these closure objectives and reclaim the aquatic ecosystem and restore watershed connectivity. (For the additional comments from DFO please refer to letter from DFO to WLWB July 27, 2007) 	 WLWB Aug 14, 2007 - DFO and BHPB are responsible for resolving any disagreements regarding reclamation requirements under the Fisheries Authorizations (and compensation). The WLWB will move forward based on DFO's advice that the Fisheries Act authorizations do not preclude reclamation work being conducted in the aquatic ecosystem. Discussions by the Working Group on the creation of fish habitat in the pit lake will be allowed. BHPB and DFO are advised to resolve this issue together. BHPB. The operations and closure for EKATI have been based on the 1995 EIS, 2001 EA, and subsequent approved Interim Closure Plans. The Project was assessed on the EIS and the Sable, Pigeon and Beartooth EA. The Project was not assessed to restore the site to original undisturbed conditions. Restoration is not possible, and if it was the requirement the Project in all likelihood would not have proceeded. It should be noted that DFO issued Fisheries Authorizations and fish habitat financial compensation agreements following the 1996 Environmental Assessment Review Panel's (EARP) recommendation to DFO that "cash compensation for the loss of fish habitat should be considered by DFO only when there are no viable options to avoid the loss of habitat or to recreate the lost habitat". 	No Revision Proposed.		

Tracking	Comment	ICRP	Topic	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item (if applicable
				DFO advises the creation of a littoral zone in the end pit lakes independent of the decision to allow fish, as it will provide a diversity of aquatic habitat that would be beneficial for waterfowl, benthic invertebrates, and riparian and aquatic vegetation.	DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes.			
14	INAC-27 (July 27/07)	Section 6.1	Pit Lakes Fish Habitat	INAC-WRD agrees with the suggestion put forward by DFO regarding the creation of littoral zones in the near shore areas of pit lakes. It would seem the benefits of these shallow water zones would outweigh the cons; particularly as they will be more representative of natural water bodies and potentially remove the need for pit perimeter berms.	Please refer to Tracking # 1 for discussion on fish habitat in pit lakes, and Tracking # 41 and 42 for pit berms.	No Revision Proposed.		
15	INAC-28 (July 27/07)	Section 6.1	Pit Lakes Fish Habitat	INAC-WRD suggests that returning the mine site to as close to original conditions should be the goal of BHPB. The establishment of shallow water habitat (littoral zones) should be incorporated in BHPB's ICRP – at minimum, investigated further. Although littoral zones in the near shore areas of the pit would likely increase the overall footprint of the present open pits, their creation would foster riparian vegetation, provide more natural shore-like conditions, provide additional habitat for wildlife (birds and potentially fish) and could eliminate the need for pit berms to prevent access to pit lakes. It is probable that safety issues would exist even if pit berms are installed, particularly during winter months as drifts form and in the long term as the berms degrade over time.	 BHPB agrees that vegetation areas (eg riparian) will serve as habitat for wildlife such as caribou and birds. Vegetation will be used as a means to stabilize pit perimeters, and foster wildlife use. As stated BHPB has committed to reclaim the EKATI Minesite in accordance with the Reclamation Goal. This does not mean restore to original conditions. Please refer to Tracking # 1 for discussion on fish habitat in pit lakes, and Tracking # 41 and 42 for pit berms. 	No Revision Proposed.		
16	NSMA-3	Section 6.1.2	Pit Lakes Fish Habitat	Issue/Concern was fish habitat compensated as stated, or was money paid to do something that has not been done? Rationale/Explanation FA does not relieve BHP from commitments made to aboriginal peoples regarding their ecosystems during environmental assessment. The EAR states that monitoring is required to assure that habitat compensation efforts are successful. The Board has stated the reclamation goal to be to return the site to viable and self sustaining ecosystem compatible with human activities and healthy environment. Proposal/Solution BHP needs to provide references and details of where the habitat compensation took place and report on monitoring results showing how successful it was, or remove the sentence claiming it has occurred.	Refer to Tracking # 1 for discussion on fish habitat in pit lakes. The NSMA is advised to contact DFO to discuss locations and results of where habitat compensation has been provided, as well as information on community consultation which DFO conducted to determine where this work was or would be completed.	No Revision Proposed.		
17	NSMA-4	Section 6.1.2	Pit Lakes Fish Habitat	Issue/Concern stakeholders have not agreed that BHP may abandon the pit lakes in a condition unsuitable for a healthy and self sustaining ecosystem compatible with human use and the surrounding environment. Rationale/Explanation Fisheries Authorizations must not infringe on aboriginal rights without consultation, accommodation, and compensation. FN and the Board are not bound by the Fisheries Authorization. The Waters Act and the MVRMA require restoration, or compensation to existing water users. FN are entitled to rely on the commitments made during the environmental assessment.	 WLWB Aug 14, 2007 - This issue is between DFO and the NSMA. BHPB is not required to respond. Claims for compensation must be made at the time of application for a water license or land use permit. Plans, including the ICRP, being reviewed as part of water license administration are not considered to be applications. BHPB. Refer to Tracking # 1 for discussion on fish habitat in pit lakes. 	No Revision Proposed.		

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Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
				Proposal/Solution BHP should consult with stakeholders regarding the practicability of restoring fish habitat in the pit lakes, and accommodate FN rights in this closure plan.				
18	NSMA-7	Section 6.1.4	Pit Lakes Fish Habitat	Issue/Concern preventing fish access may not work, and is not agreed with communities. Concern about inaccurate EA predictions and lack of adaptive management response. Rationale/Explanation the suggestion to exclude fish conflicts with commitments made during environmental assessment, the TOR, and the WLWB directive of closure objectives. This might be considered a substantial change in the project requiring re-assessment, and re-negotiation of project conditions. Proposal/Solution Until the results of the pit lakes studies are available, and a test pit in northern conditions is tried, and fish habitat is shown to be impracticable (supported with evidence) BHP should maintain its commitments. It is too early to give up.	Refer to Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		
19	NSMA-8	Section 6.1.4.1	Pit Lakes Fish Habitat	Issue/Concern no fish habitat in pit lakes - no community agreement. Inaccurate EA predictions, and no adaptive management response. Rationale/Explanation the suggestion to exclude fish conflicts with commitments made during environmental assessment, the TOR, and the WLWB directive of closure objectives. This might be considered a substantial change in the project requiring re-assessment, and re-negotiation of IBA / EA / SEA. Proposal/Solution BHP should continue to search for practicable methods to create fish habitat after completion of pit studies and TK consultation.	Refer to Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		
20	NSMA-9	Section 6.1.4.1	Pit Lakes Fish Habitat	Issue/Concern connecting streams are proposed to not be re- established as fish habitat or not connected at all Rationale/Explanation exclusion of fish (which is likely impossible) does not agree with TOR, WLWB directive, EA, or any other agreements. Proposal/Solution BHP should continue to search for practicable methods to create fish habitat in the streams after completion of the pit studies, TK studies, and consultation. If a change in objectives becomes necessary it can be done in next revision of Plan.	Refer to Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		
21	NSMA-11	Appendix C Table 21	Pit Lakes Fish Habitat	Land 1. Issue/Concern criteria for beaches for pit lakes not specified Rationale/Explanation there should be criteria for measurement of whether the pits are have the same type and amount of shoreline habitat as baseline conditions (replacement of habitat units) compatible for use by waterfowl, fish, wildlife, people, and the consultation needs to be done to obtain	At this time the measurable amount of shoreline type and habitat has not been determined for use by humans or wildlife. The ICRP works toward reclamation of pit lake shorelines, not restoration to baseline. BHPB has outlined in the ICRP that the pit lakes should be stable, pit perimeters productive and safe for people and wildlife use, and the water flowing from the lakes meet water quality criteria that is safe for downstream aquatic ecosystems and for human use.	Appendix F, Table 43 Research Summary - Open Pits, Community 1 will be updated to include discussions with communities on reclamation research for pit lake perimeters.		

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				support, so there can be some certainty in reclamation cost estimates. Proposal/Solution BHP and consultants should consult with FN to see what types of beach, where and how much beach is required, what size and type of material, the slope, etc.	BHP Billiton appreciates NSMA's suggestion to discuss the type of beach areas around pit lakes with communities, and this will be included in Appendix F, Table 43 Research Summary - Open Pits, Community 1.			
22	NSMA-16	Appendix C Table 21	Pit Lakes Fish Habitat	 Wildlife 1. Issue/Concern fish and wildlife barriers should only be considered a temporary measure as they can't be counted on long term - need criteria for chronic toxicity testing and tissues contaminant analysis that shows fish safe to eat for people birds wildlife and able to reproduce viable young. Rationale/Explanation fish will get in and live there, and permanent destruction of lakes was not part of the deal. Proposal/Solution complete pit lake studies, if the water is not going to be good for fish, figure out how to clean the water or ensure stratification through engineering, or design for closure by filling old pits with waste rock from new pits. 	Refer to Tracking # 1 for discussion on fish habitat in pit lakes, and Tracking # 2 on fish barriers.	No Revision Proposed.		
23	NSMA-22	Section 6.1.	Pit Lakes Fish Habitat	Issue/Concern assumes that fish and wildlife should be deterred from pits Rationale/Explanation this closure option was not assessed during EA and has not gone through a public hearing. Interveners may object or claim compensation which might change the risk-benefit ratio. Alternatives should be considered for returning the pit lakes to viable and self sustaining ecosystems compatible with surrounding environment and human use. Proposal/Solution Amend pit lake study to also answer the question - what would it take to make the pit lakes viable and self sustaining ecosystems? After describing the measures required, the practicability can be discussed.	Wildlife will be deterred from open pits during mining operations and during pit flooding for safety reasons. After flooding is completed wildlife will not be deterred from these lakes.Refer to Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		
24	DFO-12 (July 27/07)	Section 6.1.4.1	Pit Lakes Fish Habitat	This section outlines how the re-connection of the pit lakes with the local hydrological regime will be required to allow drainage. DFO supports re-connection of the various water bodies within the BHPB mine site as an important part of the overall reclamation plan, but does not support the creation of fish barriers as part of the long term reclamation strategy. It is DFO's opinion that fish access must be considered as part of the long term reclamation plan if the water quality meets the necessary criteria to be discharged downstream into other fish bearing waters. Again, DFO is recommending that littoral zone be created to diversify the depth found in pit lakes to provide habitat for a number of aquatic organisms and plants.	DFO is requested to refer to letter Sept 14, 2007 from BHPB to DFO regarding fish habitat replacement in pit lakes, and see Tracking # 1 for discussion on fish habitat in pit lakes.	No Revision Proposed.		
25	IEMA-15 (July 27/07)	Section 6.1	Pit Lakes Fish Habitat	We understand that BHPB had a Fisheries Habitat Compensation Agreement with Fisheries and Oceans, but this arrangement should not preclude the pit lake edges being returned to a condition that promotes fish use and for the overall pit lake to be safe for fish passage. It is premature for the company to put	WLWB Aug 14, 2007 - DFO and BHPB are responsible for resolving any disagreements regarding reclamation requirements under the Fisheries Authorizations (and compensation). The WLWB will move forward based on DFO's advice that the Fisheries Act authorizations do not preclude reclamation work being conducted in the	No Revision Proposed.		

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				forward fish barriers as the closure option for the pits. This is not consistent with the overall closure goal and will, in all likelihood, require perpetual care and monitoring.	aquatic ecosystem. Discussions by the Working Group on the creation of fish habitat in the pit lake will be allowed.			
					BHPB . The ICRP states that end pit lakes should be stable, pit perimeters productive and safe for people and wildlife use, and the water flowing from the lakes meet water quality criteria that is safe for downstream aquatic ecosystems and for human use.			
					The IEMA is requested to refer to Tracking # 1 for discussion on fish habitat in pit lakes.			
26	JW-7 (Aug 14/07)	Section 6.1 Page 88	Pit Lakes Fish Habitat	What is reasoning for not allowing (encouraging) fish passage to lakes (besides that it is not a requirement under DFO authorization – sec 6.1.2 p 88)?	Please refer to Tracking # 2	No Revision Proposed.		
27	IEMA-35 (July 27/07)	Appendix C Table 21	Pit Lakes Fish Habitat	Wildlife 1. This objective (fish barriers) is not consistent with the overall site closure goal and is more of an option than an objective. Although further research may be needed to establish expected pit water quality, it would be premature to say that fish should be kept out of the pit lakes. This may not even be possible in the long-term without some sort of perpetual care regime to ensure that effective fish barriers remain in place. What is needed is a determination of whether restoring the pits to self sustaining ecosystems is practicable, how long this may take using various methods of pit filling, and whether fish barriers may be necessary temporary structures until acceptable water quality is established. This is what Task 7 of the Pit Lake Study is supposed to do and should be referenced in Table 43.	 WLWB Aug 14, 2007 - BHPB is to address this comment. Please note that on April 30th, 2007, the WLWB merged the Sable, Pigeon and Beartooth Pit Lakes Studies with the Reclamation Research Plan included in the ICRP. This expands the Pit Lakes Studies to cover all pits, not just Sable, Pigeon and Beartooth and allows stakeholders to re-evaluate the pits lakes research needs (it has been a long time since the pit lakes terms of reference were approved). As part of this merger, the WLWB requires that BHPB submit (1) a report describing the results of any research on pit lakes BHBP has undertaken since 2005, and (2) an updated ICRP Reclamation Research Plan that incorporates the task outlined in the pit lakes studies terms of reference. BHPB may propose changes to the tasks to reflect research results received to date and Working Group discussions. This information is to be provided prior to the start of the review of Section 4 of the ICRP as this section focuses on reclamation research and monitoring. BHPB. Please refer to Tracking # 1. 	No Revision Proposed.		
28	INAC-17 INAC-19	Appendix C Table 21 Appendix C Table 21	Open Pits Closure Objectives and Criteria	Comment carried forward from Section 1. (INAC-30) Table 21 – Open Pits. The physical stability section makes no reference to hydraulic criteria for inflow and outflow channels.	 WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB - Table 21. Closure Objectives and Criteria for Open Pits, Water 2 provides objective and criteria for stream flow in the outflow streams. At this time the volumes of flow cannot be defined. Measurable criteria for discharge will be included in future updates of the ICRP. WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed 	No Revision Proposed		
			Objectives and Criteria	"risk assessment" as an action item. What does this mean?	at the Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3.			

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Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
					BHPB should begin considering this comment and engage in discussions with INAC.			
					BHPB - Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs. "risk			
					assessment" under biological criteria has been removed.			
30	INAC-52 (July 27/07)	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Community 2. What is the definition and measurement criteria for negligible residual effects on archaeological sites?	The reason it is predicted that there will be negligible residual effects on archaeological sites during closure is that EKATI has and continues to do extensive archaeological survey related to potential new development. This up front work has allowed EKATI in most cases to avoid archaeological sites by moving infrastructure away from the sites. During construction and operations to date this has resulted in 9 of the 200 known sites having to be mitigated by data recovery prior to Misery development. One site was disturbed by a contract environment employee who was dismissed and another disturbed by an drill rig operated by a regulatory agency that was dropped in the middle of a site. The construction and operations impact has been described as minimal. Because EKATI has either mitigated already or built away from archaeological sites, there is no reason that during closure any more disturbances should occur to archaeological sites. Obviously care is still needed so that for instance, a quarry source that has either not been previously surveyed or contains a known site but someone neglects to check the archaeological management plan in complying with the sites land disturbance policy. These plans and policies if followed should further help prevent future accidental damage. The risk is not zero but it is negligible.	No Revision Proposed.		
31	NSMA-19	Appendix C	Open Pits Closure Objectives and Criteria	Health & Safety 5. Issue/Concern not clear whether use of water in pit lakes would be safe Rationale/Explanation talks about land use only Proposal/Solution criteria need to include use of waters.	See Table 21 Closure Objectives and Criteria - Open Pits, Water 4.	No Revision Proposed		
32	IEMA-26 (July 27/07)	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Land 2. The stated objective is really an option. The objective might be better stated as 'making the land around the pits safe for future uses'.	BHPB agrees with the IEMA that the current objective is an option, and a more applicable objective would be to ensure the site reclamation work makes the land safe for future uses.	Appendix C, Table 21 Closure Objectives and Criteria - Open Pits, Land 2 will be removed. Health and Safety 5 (on the same table) covers this objective and criteria more appropriately.		
33	IEMA-27 (July 27/07)	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Land 3. Does BHPB see any role for GNWT's November 2003 Environmental Guideline for Contaminated Site Remediation?	BHPB agrees that the GNWT-ENR Environmental Guideline for Contaminated Site Remediation 2003 is a useful reference for remediation of contaminated sites at EKATI. This is a territorial guideline, the federal equivalent is called the "Canadian Soil Quality Guidelines for Protection of Environment & Human Health" by the CCME (Canadian Council of Ministers of the Environment) <u>http://www.ccme.ca/publications/ceqg_rcqe.html?catego</u> ry_id=124 Either of these guidelines can be used.	The NWT Environmental Guideline for Contaminated Site Remediation, 2003 (GNWT-ENR), and the Canadian Soil Quality Guidelines for Protection of Environmental and Human Health by the CCME, will be included in the Reference List.		
34	NSMA-12	Appendix C Table 21	Open Pits Closure	Land 3. Issue/Concern	The WLWB approved the Hydrocarbon Contaminated Materials Management Plan June 15, 2007. The Plan	No Revision Proposed		

Tracking	Comment	ICRP	Topic	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
			Objectives and Criteria	Industrial standards have not been agreed to, and CCME guidelines not necessarily acceptable here. Rationale/Explanation TOR, EAR, project description all say "compatible with viable healthy ecosystem and surrounding environment and human use" and communities are expecting that. Proposal/Solution closure criteria should be return to baseline levels, whatever they were naturally.	states that hydrocarbon contaminated materials in the EKATI Landfarm would be treated to meet GNWT's industrial remediation criteria. Please reference Section 2.0, Pg 8-18 of this Plan for more information.			
35	IEMA-32 (July 27/07)	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Water 2. This objective should also include an indication that the pits should stay filled within some variation of natural seasonal levels. Drainage between the lakes should occur in natural channels not be subject to regular blockages of flooding. It may also be desirable to make trade-offs amongst a number of conflicting effects so as to balance loss of raptor nesting, minimize sedimentation during refilling, and minimize groundwater infiltration into the pits. The current objective may appear to suggest that plugs will not be used. The use of plugs or not, are two options and the consequences of each need to be assessed and understood. If the plan is to use plugs, research should look at the consequences of failure and the design of appropriate plugs to minimize this outcome.	At this time the use of criteria to measure lake levels is not possible given that the pit lakes will be man made and not natural. Fluctuations in water level are expected throughout the seasons, and possibly between years depending on the magnitude and timing of freshet.	Section 6.1.4.1 Pg 101 will be updated: Plugs will be constructed in the underground connections between Panda and Koala underground mines. However, BHP Billiton will also continue to research the hydrologic effects should no plugs be installed, or should one or more of the plugs fail after pit lake filling. This research has been identified in Appendix F, Table 43 - Research Summary - Open Pits, Water 2. In addition more discussion on drainage flow from pit lakes to the external watershed will be provided (ie. channel design, preliminary expectations on flow characteristics).		
36	INAC-46 (July 27/07)	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Water 3. What is meant by "stable" lake stratification and how can this be achieved and determined?	Objective Water 3 should read "Any permanent stratification caused by meromixis remains stable." This correction is required because summer thermal stratification is expected to break down as winter approaches. A number of characteristics of the EKATI pit lakes could lead to meromixis - depth to surface area ratio, salinity from groundwater inputs and protracted winter ice cover. Detailed predictive modeling is planned to determine the likelihood of establishing meromixis for the EKATI pit lakes. The stratification of the pit lakes will be monitored after flooding using standard temperature and conductivity profiling as part of the AEMP. BHPB currently undertakes similar closure monitoring at its Island Copper Mine pit lake.	Appendix C, Table 21, Water 3 Objective will be updated to state. Any permanent stratification caused by meromixis remains stable.		
37	INAC-50 (July 27/07)	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Wildlife 5. Sumps and collection ponds filled with waste rock, what about potential seeps and acceptable seep criteria?	Sumps are those areas on site where runoff from camp and laydown pads, and the tundra has been collected during operations. At closure the liners from these facilities will be removed and landfilled. Materials under the liner will be assessed for contaminants and treated as outlined in the Hydrocarbon Contaminated Materials Management Plan. Granite will be used to backfill the remaining depressions. It is expected that there would be no water quality concerns if any residual contaminated materials located below the liner have been managed, or from the waste rock used to fill these sump areas.	No Revision Proposed		
38	IEMA-13 (July 27/07)	General	Open Pits Closure Objectives and Criteria	There is some mixing of objectives and options for each of the mine components. Furthermore, some of the objectives conflict with each other. For example, minimizing access to open pits for wildlife, while at the same time leaving a pit ramp in place. It is not clear how community preferences were factored into, or reflected in, the objectives.	The IEMA identified in their letter July 27/07 the specific objectives/options, and conflicting objectives for mine components. Response to these has been provided where individually discussed. See also Tracking # 41 & 42. Community concerns for wildlife safety have been	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
					included as part of the open pit closure. Two of the main concerns that BHPB heard from communities was the safety of caribou and wildlife near large open pits, and the quality of water in the pit lakes, and flowing from pit lakes into the Coppermine River. Closure objectives and criteria have been identified to minimize hazards for caribou near open pits. Please refer to Appendix C, Table 21, Land 1-3, Wildlife 2, 3 and 5; Health & Safety 5. Water quality objectives and criteria have been included. Refer to Appendix C, Table 21, Land 1, 3 and 6; Water, 3 and 4.			
39	NSMA-14	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Land 5. Issue/Concern needs to be more clear that natural fluctuations are seasonal, and that seasonal ranges should be matched. Rationale/Explanation people can misinterpret things Proposal/Solution add a couple of words	Appendix F, Table 43 Land 2 Research will include reference sites. These sites assist in monitoring how natural disturbances influence the progress of vegetation at reclamation sites.	No Revision Proposed.		
40	NSMA-21	Appendix C Table 21	Open Pits Closure Objectives and Criteria	Air Issue/Concern no criteria, but there should be for radon perhaps Rationale/Explanation abandoned mine sites tend to attract wildlife and people and they may be exposed to high levels mentioned in EA Proposal/Solution perhaps a simple monitor could be placed near openings	Comment outside the WLWB's jurisdiction. BHPB. Radon occurs naturally as a radioactive gas which comes from radium found in the ground everywhere. This gas can collect in enclosed spaces and forms radon decay products that attach to dust particles in the air. These particles, referred to as radon daughters, are a source of radiation and are therefore a health hazard to humans. During operations radon radon levels are managed by ventilating the underground to ensure regulatory compliance. The mine underground workings and final voids will be flooded during closure to create pit lakes. The flooded works will no longer be a source of radon daughters, and underground workings will no longer be accessible. Any remaining openings that are not flooded (e.g., vent raises and portals) will be capped or sealed to eliminate access to humans and wildlife. Therefore, exposure of humans and wildlife to radon daughters will be negligible, if any, and monitoring and a criterion for radon are not warranted.	No Revision Proposed		
41	IEMA-43 (July 27/07)	Appendix C	Open Pits Reclamation	Health & Safety 1. Another option to minimize access to open pits might be to make access roads impassable.	Berms will be constructed around the full perimeter of the open pits to deter wildlife while the open pits are being flooded. This includes berms across the access ramps into the pits. The period when these berms will be of most benefit will be when the pits are being flooded. These berms will be inspected during pit flooding but will be allowed to slowly degrade once the pit lakes are full.	No Revision Proposed		
42	NSMA-18	Appendix C Table 21	Open Pits Reclamation	Health & Safety 5. Issue/Concern have not agreed to permanent loss of use, restricted access Rationale/Explanation closure goal is to be compatible with surrounding environment and human use - obstructed access would be an infringement Proposal/Solution restore as close as possible to baseline conditions	The open pits will have restricted access during pit flooding for obvious safety reasons. There is no plan to restrict access to the lakes, once flooding is complete and closure objectives have been met. The pit lakes at EKATI will be reclaimed to meet the Closure Goal, Objectives and Criteria. Full restoration of the pit lakes to baseline conditions will not be possible. The physical dimensions of the lake will have changed, and Fish Habitat will not be replaced through signed agreements between BHP Billiton and DFO.	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
					Water quality criteria for pit lakes will be in place to ensure that pit lakes and water bodies downstream of these lakes will be safe for human and wildlife use.		(jee of no)	(" approable_
43	IEMA-36 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Wildlife 2 & 3. These objectives appear to conflict with one another. Objective 2 states "minimize access to protect wildlife safety", while Objective 3 is to "allow emergency access and egress from flooded pits". The closure criteria may well work against each other: berms versus pit ramps? How is this to be rectified?	See Tracking # 41 and 42.	No Revision Proposed		
44	IEMA-2	Appendix C	Open Pits Reclamation	Comment carried forward from Section 1. (IEMA-8) The physical criterion proposed by BHPB should consider the notion of planned and controlled failure of engineered and physical structures that may take place over the long term rather a simple approach of attempting to minimize erosion.	The degree of significant slumping or erosion that may take place during and/or after pit flooding is unknown at this time, but is not expected to be catastrophic. This however is something which will be researched to assist with future predictions and refined criteria. The conceptual measurement of 'significant' in the closure criteria at this time is based on the definition of significant meaning 'something that merits attention, or deviates from what we might expect to occur'. Significant in engineering standards and related to pit perimeters would be any major slumping or integral failure of the pit wall. Significant thermokarst erosion would be any erosion that results in sediment transport exceeding water discharge criteria. Significant thermokarst subsidence would be any settlement that negatively impacts surface drainage through the area or causes ponding of water. This may in turn lead to further permafrost degradation. However significant in the view of communities might mean wildlife death. Significant from a health and safety point of view would mean fatality to a human (This is measured with the BHPB Health, Safety, Environment and Community risk assessment). Until a more appropriate level of significance is agreed upon BHP Billiton has used significant as an interim criteria measure. Pit lake perimeters and connection channels will be inspected and reported on annually by a qualified	Appendix F, Table 43 will be updated to include predictive modeling of pit perimeter stability after mine operations cease.		
45	INAC-13	Appendix C	Open Pits	Comment carried forward from Section 1. (INAC-24)	engineer. Reference Appendix F, Table 49, Land 1. BHPB agrees that remediation of physical engineered	Appendix C, Section 3.4 will be updated to		
			Reclamation	Section 3.4. Pg 115. This section does not mention that physical stability must continue to be met in the long- term (although one might infer it from objective 7). Physical stability should address extreme events (floods and earthquakes) as well as erosion and decay. These are not expressly stated. Physical stability criteria should also recognize the need for closure measures to be resistant/tolerant of changes that may arise due to climate warming.	structures should be designed for long-term physical stability.	include discussion that several of the existing structures have already been designed with consideration given to flood events, earthquakes, climate warming. These same considerations will be given to the long-term stability of the structures at mine closure.		
46	INAC-16	Appendix C Table 21	Open Pits Reclamation	Comment carried forward from Section 1. (INAC-29) Table 21 – Open Pits. Physical Criteria refer to "geotechnically stable" pit slopes. This should be defined – does it refer to large scale failure involving the entire slope? What about unraveling? What about instability of any overburden slopes?	WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC.	No Revision Proposed		
47	INAC-18	Appendix C	Open Pits	Comment carried forward from Section 1 (INAC-31)	WLWB April 13, 2007 – As this comment relates to a	No Revision Proposed		
1,11	111/10-10	T APPENDIX C	opennia		TETE April 10, 2001 As this comment relates to a			

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision	1	
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
		Table 21	Reclamation	Table 21 – Open Pits. The biological criteria refers to pit berms outside the "zone of instability". Phrased as such, this conflicts with the physical stability criteria.	specific mine component, it will be more fully discussed at the Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC.			
					have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs. "Zone of instability has been removed". See Table 21, Land 1.			
48	IEMA-31 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	It is not clear who would inspect the remaining operational engineered structures and how often this would take place. There are no monitoring provisions spelled out for this closure objective in Table 49.	This was an omission, and will be corrected.	Table 49 (Appendix C) and Table 55 (Appendix G) Closure Monitoring and Performance, and Monitoring Frequency respectively - for Open Pits Land, will be updated to include Geotechnical Inspections for engineered structures.		
49	INAC-42 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Land 1. Definition of significance for slumping and erosion; what is to be considered significant; clarity is required on the physical inspection action – will this be a one time thing at closure or ongoing as part of the monitoring?	See Tracking # 44	No Revision Proposed		
50	IEMA-25 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Land 1. It is not clear how slumping or erosion might be measured other than through a physical inspection. Will there be a standardized inspection report or form with clear criteria for remedial or mitigative measures? For example, if 5% of the pit walls experience some sort of failure, then further blasting or reinforcement might be undertaken. Would TSS sampling in the pit lakes provide any indication of slumping or erosion?	Geotechnical Inspections will be completed annually as outlined in Appendix G, Table 55. Annual Reports for these inspections will be submitted to the WLWB. TSS would be a method of measuring erosion, but it would be might be more appropriate to measure and control erosion before it becomes a TSS concern. Geotechnical inspections would be means of monitoring for potential erosion before it becomes a water quality concern.	No Revision Proposed		
51	INAC-60 (July 27/07)	Appendix C Table 23	Open Pits Reclamation	Land 15. Definition of significance for thermokarst erosion or subsidence, what is to be considered significant and clarity is required on the physical inspection action – will this be a one time thing at closure or ongoing as part of the monitoring?	See also Tracking # 44 Physical Inspection has been covered under Appendix G Table 51, Land 2. Monitoring has been included for 5 years in Table 57 - Monitoring Frequency, in the same Appendix. See Tracking # 44 regards 'significant thermokarst erosion or subsidence'.	No Revision Proposed		
52	IEMA-63 (July 27/07)	Appendix C Table 23	Open Pits Reclamation	Land 15. It is not clear how "significant thermokarst erosion or subsidence" will be measured or monitored, and what triggers there may be for contingency measures.	See Tracking # 44 regards 'significant thermokarst erosion or subsidence'. See Tracking # 285 regards Adaptive Management.	No Revision Proposed		
53	INAC-53 (July 27/07)	Appendix C Table 22	Open Pits Reclamation	Land 2. Definition of significance for ground slumping or subsidence, what is to be considered significant and clarity is required on the physical inspection action – will this be a one time thing at closure or ongoing as part of the monitoring?	See Tracking # 44 on 'significant' and Tracking # 85 & 79 for geotechnical inspections.	No Revision Proposed		
54	IEMA-49 (July 27/07)	Appendix C	Open Pits Reclamation	Land 2. It is not clear how "significant slumping or subsidence" would be measured. As similar criteria is raised above in the Pit Lakes Land 1 Closure Criteria.	See Tracking # 44 regards 'significant thermokarst erosion or subsidence'.	No Revision Proposed		
55	IEMA-30 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Land 6. We understand that there was an extreme pit flooding event last summer at EKATI. The Agency would like to ensure that this event would fit within the proposed closure criteria of design for a 1:100 year storm event.	 Please note, that this question is applicable to a mine component that will not be operational at closure. However, for the Working Group's Information - In BHPB's letter to the DIAND Inspector June 10, 2005 the 	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
					 company stated that the Panda Underground Emergency Dewatering Line was designed to capture as much water as possible before it enters the underground. The underground system was sized to collect typical flows that cannot be collected in the surface and in-pit systems. The emergency dewatering system was sized to handle excess water volumes from a 1:100 year storm event. A BHPB internal report on the June 29, 2006 flooding of the underground indicated that rainfall was 77mm over 9 hours, and measured at a 1:70 storm event. The actual flooding of the underground was not caused by the storm event itself, but by an electrical failure, which caused the pumps not to work. This failure has since been investigated and dealt with. 			
56	INAC-20	Appendix C Table 21	Open Pits Reclamation	Comment carried forward from Section 1. (INAC-33) Table 21 – Open Pits. Objective 7 Physical Stability refers to the 1:100 year storm event for engineered structures. This is not an acceptable standard for closure. Even low risk structures should be constructed for a higher standard than this. The current mine closure guideline does not include the design criteria tables, however the earlier versions recommended that the minimum hydraulic standard for low risk structures would be the 1:200 year storm event, moderate risk structures would be the 1:500 year event and high risk structures based on upon the PMF (probable maximum flood).	 WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. The only remaining engineered structures remaining on site that will be operational after closure will be the Panda Spillway and the Panda Diversion Dam. Details on the Panda Spillway are found in Appendix D Section 4.2; and on the Panda Diversion Dam in Section 6.5 Dams, Dykes and Channels. Structural integrity of the Panda Dam and the consequences of Climate Change are found in Volume 1, Sections, 6.5.2.1; 6.5.3.1 and 8.8.6. The standard of design for engineered structures will be reviewed through the Dams Safety Guidelines, and risk assessment prior to reclamation of the mine component (or construction in the case of the Panda Spillway) 	Closure Criteria associated with Engineered structures will be updated to state: Remaining operational engineered structures are signed off by a professional engineer, and constructed to standards as applied to the Canadian Dam Association Guidelines and/or as determined by risk assessment.		
57	INAC-44 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Land 6. Operational and engineered structures meet the 1:100 year event, this is a minimal accepted level – in 100 years it is likely that these structures will be compromised.	See Tracking # 56.	No Revision Proposed		
58	NSMA-15	Appendix C Table 21	Open Pits Reclamation	Land 6. Issue/Concern 1:100 event not that rare, especially since baseline data not extensive Rationale/Explanation Proposal/Solution 1:200 might be a bit more conservative	See Tracking # 56.	No Revision Proposed		
59	IEMA-28 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Land 4 & 5. The use of indigenous vegetation for rehabilitation work is an option, not an objective, that is, a means of meeting the goal for the open pits. While the agency tends to agree that it is better to use indigenous species for revegetation, it is not clear what areas in and around pits will be revegetated other than the pipeline routes for pit filling (see Tables 23-29 in Volume 1, and Table 33 Biological Stability and Closure	Land 4. BHPB has made the commitment to use indigenous vegetation for reclamation, and regards this as a measurable objective, and not an option. Land 5. There will be disturbed sites around pit perimeters (shorelines and banks) and along connecting and outlet channels where vegetation may assist with surface stabilization. The type of vegetation, location	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item (if applicable
				Activity cell in Volume 1). Does BHPB intend to revegetated pit shorelines or berms? If so, there may be a need for metal uptake toxicity risk assessment for revegetation in these areas. The Agency understands that BHPB is undertaking a revised risk assessment for revegetation that should include riparian areas and species.	 and percentage cover will be refined through future research (Please refer to Appendix F, Table 43, Land 1 & 2), and updates of the ICRP. Please also refer to Volume 1, Section 6.1.4 Final Landscape at Closure for discussion on vegetation to stabilize beach areas. BHPB does not believe a risk assessment is necessary to establish vegetation along beach areas and channel banks. Substrate material for vegetation establishment at these sites would either be in-situ tundra soils, salvaged lake sediments and/or topsoil. The local tundra vegetation is not a risk to wildlife, and if salvaged amendment materials are determined to be a risk for vegetation then they will not be used. 			
60	IEMA-40 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Wildlife 4. It may be better to consider wildlife habitat and use of the lake periphery and shorelines including possible waterfowl use of the pit lakes. Things such as possible contaminant loads in submergent or emergent vegetation used as food by geese or ducks should be taken into account by research on revegetation metal uptake (see discussion above under Land 4 and 5).	Vegetation risk assessments will be conducted if modeling results indicate poor water quality in pit lakes. See also Tracking # 59.	No Revision Proposed.		
61	IEMA-48 (July 27/07)	Appendix C	Open Pits Reclamation	As mentioned above (Wildlife Objectives 2 and 3), permanent berms are not conducive to future community land use in and around pit lakes.	See Tracking # 41, 42 and 62.	No Revision Proposed		
62	INAC-49 (July 27/07)	Appendix C Table 21	Open Pits Reclamation	Wildlife 2 & 3. Need for both a berm and pit ramp is confusing here and what type of wildlife use is intended?	Berms will be constructed around the full perimeter of the open pits to deter wildlife while the open pits are being flooded. This includes berms across the access ramps into the pits. Berms will be constructed approx 20 + m away from pit. The period when these berms will be of most benefit will be when the pits are being flooded. These berms will be inspected during pit flooding but will be allowed to slowly degrade once the pit lakes are full. Since therefore, the berms will be used during reclamation operations, BHP Billiton suggests that Wildlife 2 be removed from Table 21.	Propose removing Wildlife 2 from Appendix C, Table 21 Closure Objectives and Criteria - Open Pits.		
					See also Tracking # 41 and 42			
63	NSMA-17	Appendix C Table 21	Open Pits Reclamation	vviidine 2. Issue/Concern access should not be impaired after pits re-established as lakes Rationale/Explanation closure goal is to be compatible with surrounding environment and human use - obstructed access would be an infringement Proposal/Solution viable self sustaining pit lakes compatible with human and wildlife use and the surrounding environment	See Tracking # 41, 42 and 62			
64	JVV-32 (Aug 14/07)	Section 6.1 Page 127 (3rd paragraph)	Open Pits Reclamation	vvnat is the estimate (in length of shoreline, and % of total shoreline) per pit of potential littoral development?	I ne estimated slope angle around the pit perimeters is unknown at this time, but will be provided in future updates of the ICRP. This also includes the slope specifics such as angle, substrate type and what type of surface stability work will be required (egs rock cover, vegetation cover).	volume 1 Table 13, Section 6.1.3.7 will be updated to include pit perimeters.		
65	JW-6 (Aug 14/07)	Volume 1 Section 6.1 Page 99 (2nd	Open Pits Reclamation	How has pit stability under submerged conditions been assessed (what are assumptions?)? The statement that "other areas of the lake edge will be sloped back for wildlife accessand that beach areas capable of	Pit wall stability under submerged conditions has not been assessed, but will be included as future updates of the ICRP. Also, the extent of area which will require stabilization (and vegetation cover) is not known at this	No Revision Proposed.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
		paragraph)		supporting riparian habitat will be stabilized with some seeding." These statements are fairly vague with respect to total area involved, proportion of shoreline affected, extent of seeding, etc. Although it is early in the planning stages, perhaps some relative quantification can be provided (how important will these 'improvements' be?).	time, and will also be included in future updates of the ICRP.			
66	JW-27 (Aug 14/07)	Section 6.1 Page 121 (top of page)	Open Pits Reclamation	The 5,900 m ² equivalent area of new disturbance is what % of the total affected area footprint?	The Environmental Impact Report 2006 states that the footprint area of the mine as of 2005 was 2,009 ha. This is 16% of the total area of EKATI's land leases, 0.58% of the area of the claim block (344,000 ha), and 81.9% of the predicted (2.447 ha) disturbance stated in the 1995 EIS. The 0.59 ha of new disturbance proposed for pipeline routes would be 0.024% of the total predicted in the 1995 EIS.	No Revision Proposed		
67	IEMA-24 (July 27/07)	Section 6.1	Open Pits Reclamation	The Agency remains concerned that back filling pits with kimberlite tailings does not appear to receive serious consideration as an option for pit closure. Since pump flooding of Beartooth is scheduled to start before the next revision of the ICRP, it appears that pump flooding is the only option. This point reinforces the Agency concern about the need for specific timelines for the reclamation research. Note that the Life of Mine Plan (Volume 1, Pg 76) has Beartooth being mined in 2010, whereas on page 111 BHPB says Beartooth open pit completion will be in 2009. These timing differences may be crucial in planning progressive closure of that pit.	 BHPB has stated on numerous occasions that the filling of open pits with processed kimberlite remains an option for closure. However, this option is dependent on the availability of an open pit in the Life of Mine Plan. BHPB again reinforces the concern that lengthy timeframes of review and approval of the ICRP may also impede the timing of research which will assist in the engineering and environmental decisions to use open pits for processed kimberlite backfill. 	Section 6.1.6 (1st paragraph) will be corrected to say Beartooth Open Pit completion is 2010.		
68	IEMA-37 (July 27/07)	Appendix C Table 43	Open Pits Reclamation	Wildlife 2 & 3. Under "Application of Results" in Table 43, there is a suggestion that the berms are for the flooding period and not, perhaps, in perpetuity. Temporary berms may be necessary in the interest of safety, during refilling. Permanent berms are not compatible with promoting wildlife use of the pit lakes. If there are stable sides and shorelines with relatively sable water levels, is there really a need for permanent berms? Lack of permanent berms would also be more consistent with Health and Safety Objective 5 – continuation of land use activities.	See Tracking # 41, 42 and 62.	No Revision Proposed.		
69	ENR-5 (July 27/07)	Section 6.1.6	Open Pits Reclamation	BHPB indicates that "The Beartooth and Panda open pits are candidates for processed kimberlite backfill during active mining operations because each of these pits is completed before final mine closure". ENR staff support the consideration of this option as it would greatly reduce the extent of waste rock deposited on the surface; waste rock piles will not be revegetated upon closure and therefore represent habitat that is essentially removed from what would have previously been available to wildlife. Waste rock piles also pose somewhat of a hazard to wildlife (although wildlife ramps are an attempt to mitigate this hazard). None the less any attempt to minimize the extent of waste rock deposited on the surface is seen as a positive initiative with respect to minimizing effects on wildlife.	BHPB agrees that when there are opportunities to backfill open pits with waste rock from operating mines in the vicinity of the exhausted pit, or with processed kimberlite they should be used. Please refer to Section 6.1.6, and to Tracking # 67.	No Revision Proposed.		
70	ENR-3 (July 27/07)	Section 6.1.3.7	Open Pits Reclamation	BHPB indicates that a <i>pushback</i> may be required in the Fox and Misery Pits to access ore that is below the bottom of the existing pit design and that this pushback will "significantly increase the surface expression of	Research on the reclamation effects of push backs will be included when these plans have been incorporated into the Life of Mine Plan.	No Revision Proposed.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
				the pits and the Waste Rock Storage Areas" (p. 96). An explanation of how this will effect the closure approaches for these two pits and the WRSA is required.				
71	ENR-2 (July 27/07)	Section 6.1.2.7	Open Pits Reclamation	BHPB proposes the use of wildlife berms around the pits to deter wildlife access upon pit closure. This approach has been taken with the Misery Pit. ENR staff currently support this measure recognizing that more information on the characteristics of the berm (i.e. height, width, size of covering rock, angle of repose) along with monitoring information of the effectiveness of the Misery Pit berm is necessary before berms can be implemented with any confidence. BHPB has identified this as a research priority in Table 43 (Appendix F).	Agree	No Revision Proposed.		
72	DFO-4	Section 6.1	Open Pits Reclamation	Comment carried forward from Section 1. (DFO-5). On page 114, Appendix C it is stated that: Although backfill of the WRSA into the open pits may address aesthetic concerns raised by some stakeholders, it does not achieve the objective of environmental protection. The assessment shows a number of negative environmental effects from this option. It is important to identify what negative environmental effects have been demonstrated by the assessment of backfill of the WRSA into the open pits. As the mine plan changes over time, options such as open pits becoming available for deposit of waste rock should be considered. If waste rock is placed in the open pits and Acid Rock Drainage is not a concern, the end pit lakes will be shallower, reducing the amount of water/time required to fill them. This will lessen impacts on water source lakes, eliminate the footprint associated with more waste rock piles, and prevent further lakes from being impacted by being used as waste rock storage areas.	 WLWB April 13, 2007 – As this comment relates to a specific mine component it will be more fully discussed at the Working Group Meeting for WRSA. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO. BHPB. BHPB has stated that open pit(s) would be backfilled with waste rock should an active pit become available during mining operations, if that pit is no longer required for future mining operations, and the available pit is adjacent to the pit being mined. Waste rock that cannot be placed in an open pit is placed in WRSAs. The storage areas have been designed and constructed to encourage permafrost development in the piles, as well as to encapsulate PAG materials. They have not been designed to be reworked and moved back into open pits. For discussion on how permafrost develops in WRSA please reference Volume 1, Section 6.3.2.2. 	No Revision Proposed.		
73	INAC-38 (July 27/07)	Section 6.3	Open Pits Reclamation	Again, INAC-WRD feels that placing newly available waste rock and processed kimberlite in the pits is a practical closure option. This would reduce the size and footprint of the final rock piles, reduce the depth of the pit lakes and could eliminate the need to dewater Desperation Pond. It is noted, this option would be contingent on any affects the rock might have on water quality and the dynamic nature of the mine plan; however this is still a sensible closure option.	Agree	No Revision Proposed.		
74	DFO-5	Section 6.1	Open Pits Reclamation	Comment carried forward from Section 1.(DFO-6) The LLCF has not been identified as a water source for filling the pits but is being looked at as a potential alternative. DFO recommends that the LLCF not be used as a water source. If Cells D&E meet water quality criteria upon cessation of mining activity, re- establishment of connectivity with downstream water bodies should be considered as the concerns associated with end pit lakes as fish habitat do not apply. The physical habitat has not been substantially altered and therefore the two cells could provide productive fish habitat without much effort on the part of BHPB. DFO recommends that BHPB include the return of Cells D & E of the LLCF to fish habitat as another specific closure	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at the Working Group Meeting for open pits/LLCF. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO. BHPB. BHPB will continue to keep the option open for use of the LLCF as source water for pit filling. The reason for this is that the LLCF water should remain a consideration if: water quality modeling indicates that using the LLCF water will not prevent BHPB from meeting water license criteria, 	No Revision Proposed.		

Tracking	Comment	ICRP	Topic	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
				objective.	 water withdrawal rates do not significantly impact aquatic habitats downstream of the LLCF. 		() = = = = ()	(F F
					BHPB will provide a response to the remainder of DFO's comment in the Section 3 review for PKCA's.			
75	INAC-9	Appendix C Section 3.3	Open Pits Reclamation	Comment carried forward from Section 1.(INAC-18) Section 3.3. Pg 113. The statement that backfilling of open pits cannot achieve the objective of environmental protection is not well supported. Backfilling may not be the least costly; however it is feasible and could achieve the objective of environmental projection. This option, and any other, should not be discounted without adequate justification.	BHPB - A number of options were considered for reclamation of open pits, including natural fill, waste rock backfill and processed kimberlite backfill). Waste rock backfill was ruled out as an option for closure at the Closure Options Workshop July 2006. INAC participated in that workshop, along with other regulatory agencies, and the communities. The risk assessment for waste rock backfill identified the following risks: thermokarst erosion when exposing permafrost that has developed in the waste rock pile, greenhouse gases emissions with additional hauling requirements, dust release from waste backfill, increased emissions from blasting, increased potential for seepage runoff with permafrost melting, and metal leaching from re-exposure of materials such as waste kimberlite and biotite schist. The option of hauling waste material from one pit to another during pit development is dependent on the Life of Mine and the availability of an open pit at the time of pit development and within practical range for hauling. If an open pit is not available, materials such as waste kimberlite, metasediments, hydrocarbon contaminated materials are deposited in the WRSAs with the intent of permanent encapsulation and no re-handling. To that end, the present WRSAs have been designed for long term placement and have been demonstrated as stable through monitoring of the cooling of the piles and permafrost development. The increased cost for backfilling would also affect further development at EKATI and the economics of the Life of Mine. The use of an open pit for waste rock deposition will remain an option for reclamation at EKATI but at this time BHPB proposes to leave the present WRSAs in place and flood the pits with water from source lakes.	No Revision Proposed.		
76	INAC-5	Section 6.1	Open Pits Reclamation	Comment carried forward from Section 1. (INAC-5) Beartooth Pit: The Closure and Reclamation Guidelines 2007 (pg 4) states that the ICRP should place emphasis on "Detailed reporting on progressive reclamation activities". The Beartooth pit is to begin pump flooding in 2010. Greater detail of the closure plans, specific to Beartooth pit, are needed in order to determine if the closure criteria and measurement endpoints are acceptable to achieve successful closure, as this is a final closure component.	 WLWB April 13, 2007 – As this comment relates to a specific mine component and progressive reclamation it will be more fully discussed at future Working Group meetings. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. Detailed closure plans for Beartooth will be developed with the approval of the ICRP. Since the development, submission and review of this ICRP began the mining plans for Beartooth have been under review. At this time BHPB are reviewing the feasibility of expanding the Beartooth open pit or an underground mine. BHPB again reinforces the concern that lengthy 	No Revision Proposed.		

Tracking	Comment	ICRP	Topic	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision	[
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
					timeframes of review and approval of the ICRP may impede the timing of research and development of more detailed closure plans which will assist with Beartooth Reclamation.			
77	IEMA-45 (July 27/07)	Appendix C	Open Pits Reclamation	For pit lakes, it will be important to ensure that winter travel over lake ice is safe for human use into the future. Ice thickness measurements might be useful as an indicator of safe travel.		Appendix G, Table 49. Ice thickness will be included as part of the Health & Safety monitoring, and in Table 55, Closure Monitoring Frequency, under Health & Safety.		
78	JW-8 (Aug 14/07)	Volume 1 Section 6.1 Page 99 (3rd paragraph)	Open Pits Reclamation	Has it been demonstrated that the all pit lakes will be a net positive for – seasonal and annual (i.e., dry years) variation? Does this assume all natural inflows will be returned?	No this has not been demonstrated at this time, and does not assume that all natural inflows or outflows will be returned to original conditions.	Appendix F, Table 43, Water 2. Will be expanded to include modeling of downstream flow rates.		
79	INAC-31 (July 27/07)	Section 6.1	Open Pits Reclamation	It is understood that BHPB will conduct research on the appropriate level in the pits. At this time does BHPB have an idea of acceptable water levels in the pits? Will these levels allow natural fluctuations in level and allow normalized flow through the connecting channels?	No, this information is not available at this time.	No Revision Proposed.		
80	JW-16 (Aug 14/07)	Section 6.1 Page 111 (1st paragraph)	Open Pits Reclamation	How much of the pit volume could/would be filled with processed kimberlite (what scenarios are being considered?). What research is being done to predict water quality for these scenarios?	Identified research for processed kimberlite filling of open pits has been included in Appendix F, Table 43, Operations 2 and 3. Research on pit lake water quality with processed kimberlite filling has been identified in the Pit Lakes Studies, Waste Materials Characterization (Appendix F, Table 43, Water 3).	No Revision Proposed.		
81	ENR-4 (July 27/07)	Section 6.1.5	Open Pits Reclamation	Table 14 Closure Criteria Open Pits needs to be revised based on the agreed upon structure during Section 1 Review. The downstream effects on aquatic mammals does not appear to have been assessed in the consideration of extraction volumes and rates of source lakes for pump flooding of pits (it is not included in the Environmental Effects Assessment provided in Section 8). ENR staff request that this be completed and provided for our review. While BHPB states that "Beach areas that are able to support riparian habitat will be encouraged through stabilization work and some plant seeding if required" and that research will be conducted on identifying locations, appropriate vegetation types and methods for establishment (Table 43, Appendix F), it is not indicated in Tables 23-29 outlining pit closure activities. ENR staff request that stabilization and vegetation be included in these tables.	 WLWB Aug 14, 2007 - Please refer to an email dated June 23, 2007 from Board staff to Working Group members. Attached to this email are revised tables. BHPB. Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs. 	An additional Criteria will be included for Appendix C, Table 21, Water 1, to ensure that water quality of source lakes and streams is maintained. Consideration of source lake fish habitat was included in the research and monitoring, but omitted in the Criteria). Tables 23-29 (in Volume 1, Section 6.1.6.9) will be updated to include the reclamation activity to stabilize pit perimeters (with rock and/or vegetation).		
82	EC-5 (July 18/07)	Section 6.1	Open Pits Reclamation	The current plan for the open pits structure includes a combination of steep walls, sloped wildlife access/egress, and beach areas if feasible. The current plan does not have any benching in place and there is still little detail on what the final structures would look like, ie. How much area will be steep sloped, beached or wildlife egress areas? We anticipate further discussions surrounding the final landscape at closure and the feasibility of a safe area combined with suitable wildlife habitat areas.	Refer to Tracking # 64 and 65 regards pit perimeter stability work, and Tracking # 15 and 38 regards areas for wildlife use.	No Revision Proposed.		
83	INAC-63 (July 27/07)	Section 6.1	Open Pits Reclamation	In some parts of the pit perimeters, where weak or ice- rich soil conditions are encountered, it may be necessary to supplement closure measures with slope flattening and/or placement of a rock buttress to control erosion. This potential effect is noted in Section 6.1.7.1 but there is no commitment to any type of stabilization	Please reference Appendix C, Table 21, Land 1. Also refer to Tracking # 81 regards inclusion of this work in Section 6.1.6.9 Tables 23-29.	No Revision Proposed.		

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Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
84	INAC-29 (July 27/07)	Section 6.1	Open Pits Reclamation	measures.INAC-WRD believes that placing processed kimberliteand, potentially newly available waste rock fromongoing operations into the pits to reduce the depth is apractical closure option. This is contingent on modelingthe water quality that will result when the pits are filled,test pits (as proposed) and/or additional modelingand/or research should be performed before thisbecomes a practical closure technique (concerns oversalinity, TSS, TDS, metal leaching, ammoniaconcentrations, remnant hydrocarbons, etc). Additionalinformation on pit lake infilling can also be attained fromINAC's Contaminated Sites Office for remediation workcarried out at the Colomac Mine Site. Benefits toplacing processed kimberlite and waste rock in thebottom of pits once operations are finished in the pit arereduced size/footprint of waste rock piles. It isunderstood that the mine plan and timing can potentiallyinfluence placing material in the bottom of some pitlakes.	Modeling of water quality for processed kimberlite backfill in open pits has been identified in the Pit Lakes Studies, Waste Materials Characterization (Appendix F, Table 43, Water 3). Refer to Tracking # 72 regards backfill of open pits.	Appendix F, Table 43 Research Summary - Open Pits, Water 3, will be updated to include water quality modeling if waste rock is backfilled into the open pits.		
85	INAC-30 (July 27/07)	Section 6.1	Open Pits Reclamation	INAC-WRD understands that in addition to placing processed kimberlite in the bottom of pits, the slurry could be thickened; however in addition to this, the processed kimberlite mixture could be covered with a layer of waste rock to form a more resistant top layer that also may reduce leaching.	BHPB will take INAC's suggestion into consideration. See also Appendix F, Table 43, Operations 2 where the method of processed kimberlite fill (including slurry) has been identified in the research.	No Revision Proposed.		
86	NSMA-24	Section 6.1.7 Table 35	Open Pits Reclamation	Issue/Concern community risk evaluations not shown Rationale/Explanation loss of use, human health and safety, wildlife and fish need quantification - ratings of significance Proposal/Solution the internal risk assessment should be compared side by side to a public risk assessment to identify differences	The social, human, and wildlife risks associated with Project were reviewed as part of the 1995 EIS. The risks related to closure options for open pits were discussed at the Closure Options Workshop in July 2006. NSMA representatives attended the workshop and would be a good source within the community to provide discussion on the pros and cons of open pit reclamation that were discussed at the workshop. Appendix B should also be referenced for community discussions on Pros and Cons related to the various options review at the July 2006 Closure Options Workshop.	No Revision Proposed.		
87	NSMA-23	Section 6.1.7 Table 35	Open Pits Reclamation	Issue/Concern negligible effects are <\$50K, but minor are \$50M- \$500M - what about the \$51K - \$50M category? Rationale/Explanation is there a typo in the table and does BHP mean that economic impacts less than \$50M are considered negligible? Proposal/Solution clarify	Not covered under Section 2 Review	No Revision Proposed.		
88	NSMA-1	Section 6.1	Open Pits Reclamation	Issue/Concern Project should be designed for closure - new pits should deposit waste rock in old pits without the need to rehandle. Rationale/Explanation If pits are filled with waste rock, on top of PK or not, they will resemble natural lakes more closely, and be more likely to be chemically stable and supportive of viable ecosystems. No rationale has been submitted demonstrating that this would not be practicable.	See Tracking # 72.	No Revision Proposed.		

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				Especially since there are so many pits on the go now. Proposal/Solution One mine should be completed for each new open pit started, so that as much waste rock as possible can be deposited in a completed pit.				
89	NSMA-27	Section 6.1	Open Pits Reclamation	Issue/Concern revegetation Rationale/Explanation communities need to be involved in determining where and what vegetation there should be, and it needs to be a viable self sustaining ecosystem compatible with wildlife and human use and the surrounding environment. Proposal/Solution Aesthetics, wildlife, and human use of the WRSA's should be considered early. A TK design committee should be established	BHPB agrees that aesthetics, wildlife and human use of mine area components should be reviewed as part of the closure planning, and will take into consideration NSMA's suggestion on a TK design committee.	No Revision Proposed.		
90	NSMA-2	Section 6.1.1	Open Pits Reclamation	Issue/Concern the pre-disturbance conditions of the pits are not described according to the TOR Rationale/Explanation aquatic habitat and chemical conditions are missing from table 12 and figures Proposal/Solution add them		Section 6.1.1.5 Table 12 will be updated to include information on water quality and aquatic habitat - as outlined in the Appendices of 1995 EIS, Volume II.		
91	NSMA-10	Section 6.1.4.2	Open Pits Reclamation	Issue/Concern the use of berms is not a closure design feature but a temporary operational safety feature Rationale/Explanation Once the pits have been turned back into lakes suitable for use by wildlife, fish, and people, there will not be a need to keep wildlife out. Proposal/Solution BHP needs to talk to FN about wildlife use of the pits after closure, and find out what they want done.	See Tracking # 41 and 42. BHPB provided the NSMA community and community representatives with opportunities to discuss wildlife use of the pits after closure throughout the development of this ICRP, and will continue to engage the communities on this in the future. For more information on closure consultation during the most recent ICRP development, and what the communities told BHPB during that consultation, please refer to Appendix B.	No Revision Proposed.		
92	NSMA-6	Section 6.1.3	Open Pits Reclamation	Issue/Concern there is no discussion of how aesthetics concerns are addressed Rationale/Explanation WL and TOR required this; needed to record fulfillment of EA commitments, and to help FN determine whether it will be compatible with their future use of the site. Proposal/Solution add details, and report on consultation regarding aesthetics.	Agree	Section 6.1 will be updated to include discussion on aesthetics related to closure and reclamation of open pits.		
93	INAC-65 (July 27/07)	Section 6.1	Open Pits Reclamation	It is proposed that the weir be made of concrete. Even in northern Canada where there are fewer freeze-thaw cycles, concrete will degrade with time. The company should consider alternatives to concrete or provide security to replace the concrete periodically. The court records (R. v BHP Diamonds Inc., 2002 NWTSC 74, 2002) associated with the Panda Diversion Channel failure show that the company was certain of bedrock in the vicinity of the Grizzly lowlands. Perhaps this bedrock would be a better location for an overflow weir.	The proposed weir around the Panda Dam was developed to a concept level only. Concrete was suggested as a possible material type, but was not investigated beyond a concept level. Design of the weir will consider long-term performance of the structure and the materials used in its construction.	No Revision Proposed.		
94	DFO-10 (July 27/07)	Section 6.1.3.4	Open Pits Reclamation	Panda pit (as well as Beartooth) may be partially backfilled with processed kimberlite prior to refilling with lake water upon mine closure. This would be beneficial		No Revision Proposed.		

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				as it would extend the life of the LLCF and reduce the amount of time and water required for filling the lake. However, an end pit lake experiment should be conducted in order to ascertain whether processed kimberlite negatively effects the water quality in the pit lake. This is acknowledged by BHPB in Section 6.1.6 Engineering and Environment Work. If the results are positive this progressive reclamation method can and should be used in other pits.				
95	JW-9 (Aug 14/07)	Section 6.1 Page 99 (bottom of page)	Open Pits Reclamation	Sable pit lake flow will be connected to downstream system (Two Rock) only when pit water quality meets discharge criteria (this comment is relevant for all pit lakes)how will this be demonstrated? Number of years of monitoring required that establish criteria is met (that water quality is in metastable equilibrated condition? What is expected seasonal variation? expected short and long-term trends? What are contingencies?	Pit lake water quality will be demonstrated through water discharge criteria (Please refer to Appendix C, Table 21, Water 4). Water quality monitoring would commence 2 years prior to pit fill completion, and continue for 10 (Please reference Appendix G, Table 49, Water 3). A possible contingency for poor water quality would be water treatment. Please also refer Tracking # 285 regards Adaptive Management.	No Revision Proposed.		
96	IEMA-5	Section 4.8	Open Pits Reclamation	Comment carried forward from Section 1. (IEMA-12) Pg 37. Schedule for progressive reclamation is not available yet some mine components, such as Beartooth will be reclaimed and closure before the next revision to the ICRP is made.	The schedule for progressive reclamation has been provided in Appendix D. The schedule outlines the progressive planning requirements for preparation for Beartooth pit closure (Conceptual, PreFeasibility 2007, Feasibility 2008-2009, and Execution 2010). The work activities associated with closure and reclamation of Beartooth pit have been provided in Section 6.1.4 and Table 25, Vol 1, and work on the Beartooth Pit closure planning will be commenced as soon as the ICRP has been approved.	No Revision Proposed.		
97	INAC-67 (July 27/07)	Section 6.1 Tables 23 and 29	Open Pits Reclamation	Tables 23 and 29 describe the specific closure activities for each pit. Provision for local stabilization of slopes should be added to each pit, as noted above. Section 6.1.4 of the ICRP indicates that closure works will include efforts to establish riparian habitat. This is not indicated in any of the tables.	See Tracking # 81.	Tables 23-29 (in Volume 1, Section 6.1.6.9) will be updated to include the reclamation activity to stabilize pit perimeters (with rock and/or vegetation).		
98	JW-5 (Aug 14/07)	Section 6.1 Page 93 Figure 20	Open Pits Reclamation	Water collected at bottom of Misery Pit – is water volume/water level being measured? Has the infill rate been calculated? This data could help calibrate natural infill rates for other pits. Is the source of water into Misery Pit only precipitation with minor slope runoff? This will continue to fill prior to recommencing workhas water been sampled/analyzed? What will happen to water when pit is re-opened?	Yes, the water elevation in Misery pit is monitored, as well as the volume of water being pumped out of the pit (total volume of water pumped). Agree, the research for pit filling should include learnings from the Misery pit during the Temporary Suspension of Operations.	Section 8.4 as well as Appendix F, Table 43, Water 3 will be updated to include Misery as a resource for the Pit Lakes Study research.		
99	JW-25 (Aug 14/07)	Section 6.1 Page 117 (2nd paragraph)	Open Pits Reclamation	What are the maximum acceptable "cliff heights" of each former pit wall after flooding?	These have not been assessed at this time but will be discussed in future updates of the ICRP. The heights of remaining pit walls which extend above the final pit lake elevation would have to be evaluated on the proportion of steep slopes expected, how this will impact safe use by humans and wildlife, and how these compare to cliffs near water bodies in the surrounding environment.	No Revision Proposed.		
100	JW-28 (Aug 14/07)	Section 6.1 Page 121 (top of page)	Open Pits Reclamation	What are the risk ratings (Negligible, Minor, Moderate and Major) based on? How were they determined?	Appendix E has been provided for reference on risk ranking. Sections with relate to this question are Sections 5.1 through 5.3, and Table 35.	No Revision Proposed.		
101	JW-3 (Aug 14/07)	Section 6.1.1.5 Page 87	Open Pits Reclamation	What were/are the maximum depths of these lakes? How were average discharge values calculated (based on watershed area?)? Has data been updated from	Average discharge (based on watershed area) was estimated for each watershed based on an average annual precipitation of 333 mm and average runoff	Section 6.1.1.5 Table 12 will be undated to include maximum pre-mining depths.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision	,	
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
		Table 12		earlier baseline work to refine these values? Are there stream flow data available for any of these streams? Will any of this natural inflow be used to fill pits or do calculations presented later in text assume all pit inflow is pumped from a lake source?	coefficient of 0.50. The average annual precipitation estimate is the most up-to-date, based on analysis of 11 years of data from the Koala meteorology station, as well as data from Lupin. The average runoff coefficient was based on the average runoff coefficient observed at all hydrology monitoring stations from 1997 to 2005. These two parameters (average annual precipitation and runoff coefficient), produce an estimate of annual runoff of 166 mm. Note that the 1995 EIS used an average annual runoff of 180 mm, however, 166 mm is based on analysis of on-site data, where the EIS relied more heavily on regional data. Average discharge was calculated by multiplying the watershed area of a given watershed by the annual runoff depth, and dividing by the length of the open water season (which was assumed to be from May 15 to October 15, or 152 days).	With respect to data collected to assist with pit flooding estimates please refer to the report Open Pit Flooding Study, EKATI Diamond Mine, EBA Engineering Consultants Ltd, 2007.		
					Average Discharge (at watershed main outflow) was based on data from the 1995 EIS as well on data collected subsequently for baseline studies. For example Long Lake and Slipper were taken from the 1995 EIS, because this represented pre-development. Data for Cujo was from 1999 and 2000 (pre- development of Misery), and data for Horseshoe, Logan and Pigeon are from more recent baseline studies.			
102	JW-30 (Aug 14/07)	Section 6.1.7.1	Open Pits Reclamation	What's the uncertainty in estimating the depth of the talik zone along the pit sidewalls and at the pit bottom (Figure 32 – what are the dimensions of the talik based on?). What happens to the thawed pit wall stability and strength when flooded (saturated)? How is the potential for sloughing along the pit walls evaluated and what are these estimates?	When flooded, the pit wall stability should not be negatively impacted. As noted in Section 6.1.7.1, "No structures have been identified that could impact long term stability of pit lakes". The talik zones in open pits were estimated by a site geotechnical engineer based on experience to date. There will be a geotechnical evaluation of the final pit walls as part of the open pit reclamation feasibility work closer to final closure of each open pit.	No Revision Proposed.		
103	JW-4 (Aug 14/07)	Section 6.1.2.7 Page 92	Open Pits Reclamation	Why was Misery pipe put into temporary suspension? (operations and economics only? or are there unresolved environmental issues?)	The Misery site was put on Temporary Suspension of Operations on April 25 th , 2005. The reason for this was that mining operations at Misery had been completed in line with the planned pit design and BHPB intended to then determine the future of the Misery kimberlite pipe, based on economic evaluations and options for future mining. Future options include modification(s) to the open pit design, expansion into underground development, or closure of the open pit. Ore production from the Misery Pit was completed in April 25th, and all the remaining ore located on the Misery Ore Temporary Storage Pad is now being hauled to the EKATI Minesite Ore Storage Facility. (Referenced from letter to DIAND Inspections, May 6, 2005).	No Revision Proposed.		
104	JW-10 (Aug 14/07)	Section 6.1 Page 100 (2nd paragraph)	Open Pits Reclamation	Will fish be isolated upstream of Beartooth Pit lake after pipeline is de-commissioned?	Based on the Sable, Pigeon, Beartooth 2001 Environmental Assessment fish passage did not occur between Bearclaw and Beartooth Lake prior to mine operations. The above noted Environmental Assessment (page 3- 102) states "The Bearclaw-Beartooth Stream is 160 m in length and has two distinct reaches. Habitat characteristics of each reach are provided in Table 3.5-	Section 6.1.4.1 will be updated to include the discussion that fish passage did not occur between Bearclaw and Beartooth lakes prior to mining operations.		

Number ID Section	Resolved?	A atlan kan
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10. It is unlikely that this stream provides habitat for fish because it is ephemeral, very		, II —
shallow and has an average gradient of 11%. Given the		
high gradient and shallow water depths, migration		
possible."		
As noted in Section 6.1.4.1 of the ICRP a fish barrier will		
be in place between Bearclaw lake and the Beartooth pit		
105 INAC-68 Section 6.1 Open Pits Table 24 (Pigeon) and Table 29 (Miserv) should have a BHPB agrees that pit walls (notably Miserv and Pigeon) No Revision Proposed.		
(July Water Quality contingency to mitigate the pit water quality associated may affect pit water quality. Pit wall contribution of ARD		
27/07) with ARD in the pit walls. Both of these pits contain to pit lakes has been included in the Pit Lakes Studies.		
6.3.3.3 that the final stripping of the Misery pit is Pigeon and Beartooth Pit Lake Studies. Oct 2004		
expected to produce about 55% biotite schist and 45 % Modeling results from this research will assist in		
granite. This suggests that 55% of the final pit wall understanding the type and level of expected		
could be potentially acid generating material.		
106 JW-15 Section 6.1 Open Pits Table 15 seems out of place (discusses WRSA Agree, this table provides water quality criteria for both Table 15 (Volume 1, Section 6.1.4.1) will be		
(Aug Page 111 Water Quality seepage criteria)is this the same criteria that will be pit lakes and seepage, and would be more appropriate relocated to Appendix C.		
14/07) Table 15 Used for the pit lakes? Are the criteria the same as the in the Appendix C. Section 6.1 and 6.3 in Volume 1 will be existing WOC?		
The 25 mg/L average and 50 mg/L max grab for TSS reference to its location in Appendix C.		
are from the N7L2-1616 license. These were changed		
to 15 mg/L max average and 25 mg/L max grab with the Table 15 TSS concentrations will also be		
MV2001L2-0008 SPB license. License.		
107 JW-31 Section 6.1 Open Pits "meromicitc conditions are desirable – especially in The Pit Lakes Studies will be used to identify and model No Revision Proposed.		
(Aug Page 127 Water Quality lakes where bottom waters and sediments are waste inputs to pit lakes and the pit lake water quality.		
paragraph) sediment, or are these expected? kimberlite, WRSA seepage, and pit walls.		
The Pit Lakes Studies will also be used to assess		
meromictic conditions in pit lakes.		
Table 21 Water Quality We note that fish barriers are proposed for open pits, be more fully discussed at future Working Group		
and expect there will be further discussion on how pits meetings. However, time permitting; some initial		
will function post-closure. There should be contingency discussions may take place during the meeting on May		
water quality and meromixis, and it is acknowledged in BHPB should begin considering this comment and		
the body of the ICRP (Section 8) that further engage in discussions with Environment Canada.		
Investigations are needed.		
Management Plan.		
109 INAC-32 Section 6.1 Open Pits INAC-WRD agrees that connecting the pit lakes can be The water quality criteria will be reviewed with No Revision Proposed.		
(July Water Quality part of the long term closure plan, but only if the water subsequent water license renewals. Please refer to the quality in the pit lakes can be comfortably predicted and MVI WB Reasons for Decision (WI Renewal		
pit lake water quality meets acceptable limits. INAC- MV2003L2-0013) regards Term of the License.		
WRD position is that the current Effluent Quality Criteria The Closure Objectives and Criteria, Water 1 uses the		
(EQCS) IN EXISTING WATER ILCENSES IS NOT ACCEPTABLE FOR CUITENT discharge criteria in the MV2003L2-0013 WL.		
modeling and research is needed to better predict water		
quality in pit lakes, however, INAC-WRD expects water		
quality in the pit lakes would be of better quality than See Tracking # 285 regards Adaptive Management		
thresholds will BHPB use as a decision criterion to		
discontinue pit filling if water quality in the pits is poorer		
than expected? Research that utilizes test pits (i.e. pilot projects) for pit lake flooding is a must and should be		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
				performed as soon as possible. What contingencies will be in place if water quality in the pit lakes do not meet acceptable/license standards (cessation of pump flooding, leave pits half full, altered pump rates, eliminate connectivity to environment, etc.)?				
110	IEMA-34 (July 27/07)	Appendix C	Open Pits Water Quality	The table suggests that "water license criteria are met" as closure criteria. Does BHPB intend to use the discharge criteria shown in Table 15 of Volume 1 of the ICRP or measure acceptability of water quality in pit lakes? The Agency generally supports the establishment of water quality closure criteria that will protect aquatic life, as is consistent with the overall mine closure goal of establishing viable and self- sustaining ecosystems. See IEMA letter July 27/07 for additional discussion points.	See Tracking # 109	No Revision Proposed.		
111	IEMA-33 (July 27/07)	Appendix C Table 21	Open Pits Water Quality	Water 3 & 4. It is not clear what is meant by "stable" lake stratification. Is there a timeline involved and what is the contingency if this does not happen? What happens if the water quality does not meet discharge criteria?	The results from the Pit Lake Studies modeling will assist with the level of contingency required. At this time contingency measures have been identified as water treatment.	No Revision Proposed.		
112	JW-17 (Aug 14/07)	Section 6.1 Page 111 (3rd paragraph)	Open Pits Water Quality	What is the proportion of fines (and type of fines) that can be expected, and how long will it take for turbidity to be acceptable for discharge?	These questions have been identified in the research. Please reference Appendix C, Table 43, Operations 2 and 3.	No Revision Proposed.		
113	IEMA-16 (July 27/07)	Section 6.1	Open Pits Water Quality	What water quality standards should apply to the final condition of the pit lakes? The Agency's position is that the water quality should be protective of aquatic life and the onus should be on BHPB to prove whatever contaminant levels it may suggest, are indeed protective of aquatic life. It may well be that more stringent standards such as CCME guidelines for the protection of aquatic life may be more suitable.	See Tracking # 109	No Revision Proposed.		
114	EC -1	Appendix C	Open Pits Water Quality	Comment carried forward from Section 1.(EC-2) Appendix C refers to water quality discharge criteria, and in the course of working through Section 6 there will need to be further discussion of the parameters and numbers cited in Table 15 Section 6.1.5 (Pg 111). These limits will need to be evaluated in terms of the receiving environment water quality, and in terms of loadings which will occur over time.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at a future Working Group meeting. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with Environment Canada. BHPB. BHPB agrees with EC. 	No Revision Proposed.		
115	JW-26 (Aug 14/07)	Section 6.1.6.8 Page 117 (last paragraph)	Open Pits Water Quality	Not sure what is implied by last sentence. It seems to suggest that EKATI will not provide detailed scientific engineering and analysis <i>until</i> the application for a license to pump is submitted. Wouldn't it be more prudent to provide this information sconer than later, especially if one is to sufficiently understand the reasonableness of each reclamation scenario?	The intent of section 6.1.6.8 was only to acknowledge that further regulatory approvals will be needed in the future, and that those regulatory approvals will require the provision of specific and detailed information. BHPB has already carried out preliminary work to evaluate the feasibility of source lakes. This work indicated that there would be no significant impacts to fish habitat at the rate of water withdrawal proposed. In addition, BHPB has plans to continue more rigorous studies to assess more accurate withdrawal volumes. See Appendix F, Table 43, Water 1. As this is an interim plan, these studies may lead to changes in future updates of the ICRP.	No Revision Proposed		
110	(July	Table 21	Water Quality	license effluent quality criteria are too liberal as	ICRP only to show that at this time there is not enough			

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
	27/07)			discharges from pit lakes will also enter the receiving environment for years to come, an additional point source).	information for appropriate water quality criteria to be set. BHPB acknowledges that the criteria set in the current licenses are for discharges from active containment facilities and may not be appropriate for pit lakes discharges. Ongoing research such as the Pit Lakes Studies will assist in determining the type of water quality expected in the pit lakes, and in turn will help refine the criteria. See also Tracking # 109.			
117	JW-34 (Aug 14/07)	Section 6.1.9	Open Pits Formatting	Add <i>duration</i> to monitoring parameters, location and frequency	Duration has been provided in Appendix G, Tables 55- 57.	Section 6.1.9 (Volume 1) will be updated to the new tables, and will include duration.		
118	EC-4	Appendix C	Open Pits Formatting	Comment carried forward from Section 1.(EC-5) Table 62 in Appendix C, Row 3 "Physical Stability" – the 2 nd bullet should be amended to say " and no expected erosion", also on Table 62 in Vol 1.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs. Appendix C, Table 23, Land 3 would be a replacement for Physical Stability, bullet # 2 in the previous table.	No Revision Proposed		
119	IEMA-42 (July 27/07)	Appendix F	Open Pits Research	The research for Objective 4 in Table 43 does not identify specific work that may be required for natural hydrocarbon contamination that occurs in Sable pit rock as identified as item #9 in the Appendix E Risk Assessment.	The information on natural hydrocarbons in Sable is at this time limited and preliminary. Research associated with the reclamation of this material will be included in the Research Plan in future updates of the ICRP.	No Revision Proposed		
120	IEMA-44 (July 27/07)	Appendix F	Open Pits Research	No measures are specified to quantify or monitor use of the pit ramps. The temporary closure of the Misery pit would seem to offer a good opportunity for reclamation research to test whether pit ramps may be used by wildlife or humans.	The WEMP includes monitoring of the Misery Site for use by wildlife, and the results from this monitoring will be included in future updates of the ICRP. It is also important to remember that although the Misery site remains under Temporary Suspension of Operations activities at the site (ie. hauling of kimberlite ore from the top of the Misery WRSA) may not be a good example of wildlife use at closure	No Revision Proposed.		
121	IEMA-38 (July 27/07)	Appendix C Table 43	Open Pits Research	Reclamation research for Objective 3 should also include a risk assessment for metal uptake in revegetated areas, including shorelines. Lessons learned here could benefit from the Cell D studies undertaken some time ago. These studies determined that kimberlite makes an acceptable medium for underwater vegetation to grow.	Assessments of metals uptake for processed kimberlite will be included when/if a pit has been identified to be backfilled with processed kimberlite, and if it is determined there will be beached processed kimberlite on pit perimeters/beaches.	No Revision Proposed.		
122	IEMA-50 (July 27/07)	Section 6.1	Open Pits Research	Water 1. The Agency has urged BHPB to make the LLCF water quality study available on many occasions and reiterates that call here.	For LLCF Water Quality modeling predictions for closure (after 2020) please refer to Volume 1 Section 8.6.1 and 8.6.2.	No Revision Proposed.		
123	JW-33 (Aug 14/07)	Appendix F	Open Pits Research	 What research is being conducted or considered: for the reclaim and make-up water strategy? to identify functional berm heights (suggest adding slope and shape as well)? to identify type and location of egress (suggest adding minimum numbers)? for modeling to predict long-term pit lake water quality? To the context of source lakes - aquatic habitats are not impacted by water extraction – add "and downstream waters" Reference to baseline monitoring to determine maximum volumes and rates of water withdrawal – what is the current and future monitoring plan? 	Appendix F, Table 43: Reclaim and make-up water - Refer to Operations 3. This research has been identified, but as yet there are no lessons learned or application of results at this time. Long term pit lake water quality - Refer to Water 3. Currently at baseline monitoring for identified source lakes and outlet streams, and monitoring at time of water withdrawal is included under the monitoring tables.	Appendix F, Table 43: Wildlife 2 will be updated to include berm slope and height. Wildlife will include Research on type and location of egress. Water 1 will include "and downstream water bodies".		
124	(Aug 14/07)	Appendix F (Also Section 6.1	Monitoring	once pits are filled or during filling or prior to filling?	years prior to pit lake levels reaching the elevation of outflow or connecting channels.	page) will be updated to include the following. In the case of pit lakes monitoring will		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
		Table 33)		Are biannual samples sufficient to see seasonal trends? What is the recommended sampling timing? Should AEMP response criteria be based more on identifying that a trend exists and then make sure that there is sufficient assessment of upstream conditions (since many of the AEMP stations may not be in close proximity to a discharge criteria location.)? The WEMP describers are vague – perhaps something with more quantifiable objectives.	The monitoring schedule in Appendix G, Table 55, AEMP is recommended as a conceptual level of monitoring until the Pit Lakes Studies have been completed and the results of the water quality modeling indicate a change (if required) in the monitoring frequency. It is also advised that conductivity/temperature chains would also be installed to monitor stratification continuously during the open water season. This frequency of sampling should be done until there is sufficient understanding of whether the pit lake stratification is behaving as predicted. The instrument moorings would be similar to what is currently used to monitor stratification in the LLCF. Closure criteria should identify a measure. Triggers and thresholds identify if there are changes, and Adaptive Management Plans identify procedures and responses to assess and mitigate those changes. See Tracking # 285 for discussion on Adaptive Management. See also Tracking # 252 for discussion on WEMP in Closure Objectives and Criteria.	 commence at least 2 years before pit flooding finishes. Appendix G, Table 55 - Monitoring of the pit lakes will be updated to occur four times in each year (three times in the open water season, and once in the winter). This frequency of monitoring is consistent with current AEMP monitoring for lakes and would be re-evaluated with the completion of the Pit Lakes Studies and again after five years of pit lake monitoring. Appendix G, Table 49 Water 3 will be updated to include conductivity/temperature chains for monitoring stratification. This monitoring would be included as part of the Closure AEMP. 		
125	INAC-69 (July 27/07)	Appendix G Table 49	Open Pits Monitoring	Table 30 provides a description of closure monitoring programs. A threshold for the "response trigger" is indicated. However, there is no description or commitment to a Response. The table is not clear as to when "Year 1" occurs (end of mining or end of pit flooding). It is recommended that "Year 1" coincide with end of pit flooding and the initial verification of acceptable water quality.	 Table 30 has been replaced by Table 49 (Appendix G). At this time thresholds and responses are conceptual and will be refined with the development of an Adaptive Management Plan. See Tracking # 285 for discussion on Adaptive Management. See Appendix G, Pg 233 (last paragraph) for discussion on monitoring commencement. For most cases the monitoring commences at the end of the reclamation activity. However, for pit flooding, water quality sampling will begin 2 years prior to completion of flooding. See Tracking # 124. 	No Revision Proposed		
126	JW-24 (Aug 14/07)	Section 6.1 Page 115 and 116 Table 20	Open Pits Source Lakes	"downstream flow will be maintained through freshet and to end of September." What does maintain mean? Would make sense to quantify "maintain" such that allowable pumping rates would be based on a % of the instream flow at any given time, and also a determination if it should be allowable to have pumping rates exceed natural discharge rates (especially if lake storage buffer has been reduced to the point where outlet stream flow is zero or below acceptable levels). <i>I assume much of the above is covered in Rescan's</i> <i>preliminary assessment and reported on in Section 8 of</i> <i>the Environmental Assessmentbut this information is</i> <i>not available at this time.</i> Not sure how the values were determined, or what they mean. If Ursula Lake will take nearly three years for the lake water level to recover, this implies a much bigger impact than the 0.02 m change reported on p 113. Again, figures depicting natural and affected hydrographs would be very helpful here. It seems prudent to examine the effects (of pumping from source lakes, of minimizing time to fill, on long-term energy/\$\$	 Maintain in the context of this conceptual study would be defined as continuance of flow. Source lake evaluations were developed at a concept level. As such they were analyzed with respect to average climatic conditions. Further evaluation of source lakes and acceptable extraction rates have been identified as an area of additional research in Appendix F, Table 43, Water 1. BHPB is not sure why Section 8 Environmental Assessment is not available to JW at this time. This should be available as reference for reviewers. Reductions in lake elevations were determined using a simplified model, assuming the discharge sill elevation was the same as the static lake level. Further information is available in the Open Pit Flooding Study, EBA Engineering Ltd, 2007. The source lake evaluation was conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Table 43, F, Table 43, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Conceptual and additional refinement of the allowable extraction rates is required (see Appe	No Revision Proposed.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
				requirements, etc.) of using additional pumps to accelerate pit filling.	Table 43, Water 1). Pumping rates will require adjustment in response to downstream stream flows. The pit filling strategy did not consider energy requirements, fuel consumption or air quality.		() == == = = ()	
127	JW-23 (Aug 14/07)	Section 6.1 Page 115 Table 18	Open Pits Source Lakes	"Allowable annual extraction volume" – what are these values based on? Should be rate based to reflect natural seasonal and annual variation. Expand table to show estimated reductions as monthly minimums, maximums and means (or medians), and provide measure of uncertainty of estimate. "All extraction rates have been selected to produce minimal change in downstream lake levels and/or alteration to existing shorelines" This is a confusing sentence: what does minimal mean? Does downstream lakes include the source lake? Does "and/or" imply that license criteria could be established based on a measure of lake level change that might have an assumed effect on the source lake shoreline? Last sentence refers to "the study concluded that pumpingwould not negatively impact" Ursula and Upper Exeter Lakes. Study is not referenced? Which study is it? Also no study was done on Lac de Gras – as it was assumed effects will be negligible. Is this based on the estimated 2% reduction value? Does the above-referenced study provide values to support the Lac de Gras conclusions?	Source lake evaluations were developed at a concept level. As such they were analyzed with respect to average climatic conditions. Further evaluation of source lakes and acceptable extraction rates have been identified as an area of additional research in Appendix F, Table 43, Water 1. Preliminary extraction volumes were selected to not negatively impact the aquatic environment in both the source lake and downstream watershed. The extraction volumes were reviewed as part of a fish habitat analysis completed as part of the development of the ICRP. The analysis concluded that the proposed extraction rates would not be expected to negatively impact aquatic habitat. "potential impact on the downstream hydrologic regime ." includes source lakes. At this time it is uncertain as to whether water withdrawal will require a water license or a drawdown plan. Please reference the Open Pit Flooding Study, EBA Engineering Ltd, 2007 for further information. Inference is made that Lac de Gras study was not done as it was assumed effects will be negligible. Please refer to Appendix F, Table 43, Water 1.	No Revision Proposed		
128	DFO-6	Section 6.1	Open Pits Source Lakes	Comment carried forward from Section 1.(DFO-7) If Ursula, Upper Exeter, and Lac de Gras are used as water sources for filling the pit lakes, BHPB should ensure that the withdrawal rate / volume will not result in a negative impact to these source lakes. Diavik also proposes to use water from Lac de Gras to fill in open pits created by their operations. The amount of water required from Lac de Gras from both operations should be considered.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at the Working Group Meeting on open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with DFO. BHPB. BHPB agrees. Please also refer to Appendix F, Table 43, Water 1, where additional studies have been identified to refine the volumes of water withdrawal from sources lakes. 	No Revision Proposed		
129	INAC-2	Section 6.1.6	Open Pits Source Lakes	Comment carried forward from Section 1.(INAC-2) Table 16. Page 112. The Life of Mine timeline shows the pump flooding of the first pit to begin in 2010 and continue until 2046. The concern is that there are no guaranties that the pump rates will remain at 0.4 m ³ /s, as stated in Table 16.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at a future Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. BHPB agrees. Please also refer to Appendix F, Table 43, Water 1, where additional studies have been identified to refine the volumes of water withdrawal from sources lakes. 	No Revision Proposed		
130	INAC-3	Section 6.3	Open Pits Source Lakes	Comment carried forward from Section 1.(INAC-3) In addition, according to the numbers presented on Pg	WLWB April 13, 2007 – As this comment relates it will be more fully discussed at a future Working Group	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
				21; a minimum of two pits will be drawing water from LDG from 2020 to 2025. This will increase the volume of water taken from LDG to 0.8 m ³ /s over the 5 year period. How will the pump rates be assessed to minimize potential effects to the water balance or water levels in LDG?	 meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. The evaluation of Lac de Gras was evaluated based on average annual conditions. Additional assessment and research is required as noted in Appendix F, Table 43, Water, 1. Filling of the EKATI pits has been scheduled not to interfere with pit filling activities at the Diavik mine site. 			
131	DFO-14 (July 27/07)	Section 6.1.6.4	Open Pits Source Lakes	DFO recognizes that BHPB has committed to conduct baseline monitoring prior to pumping water from Ursula and Upper Exeter lakes as well as monitoring of lake levels during pumping to ensure that no negative impacts to fish habitat from the source lakes will occur. A detailed bathymetric survey should be conducted on these source lakes to provide an accurate estimate of total volume and basin shape. Once this is complete, DFO would be able to provide advice to the WLWB and BHPB on what the maximum extraction amount should be to ensure no negative impacts occur to fish and/or fish habitat. DFO has concerns regarding the allowable annual extraction volumes listed in Appendix D, Table 28 (Ursula 2,300,000 m ³ , Upper Exeter 5,000,000 m ³). An accurate volume estimate is required to ensure that downstream flow from the source lakes is not reduced to a level that would impede fish passage. DFO appreciates the fact that BHPB has committed intake screens that follow the 1995 DFO Freshwater Intake End-of –Pile Fish Screen Guideline.	A bathymetric survey will be completed for source lakes. Preliminary work for this ICRP included a detailed littoral bathymetric and fish habitat data along 15% of the perimeter Upper Exeter Lake and 12% of perimeter of Ursula Lake were collected in August 2006. The purpose of collecting data was to estimate the relative value of the littoral areas that would be temporarily lost during water sourcing for the flooding of the pit lakes. In addition, the August surveys collected on the cross- sectional geometry and fish habitat of the outflow stream channels from Upper Exeter Lake and Ursula Lake. This information was obtained to calculate the changes in wetted depth, wetted width and wetted perimeter that would follow reductions in stream flow during pit lake flooding. For the pumping rates recommended by EBA (in the Open Pit Flooding Study, EBA Engineering Ltd, 2007) 0.4 m3/s for Upper Exeter Lake and 0.2 m3/s for Ursula Lake), reductions in water surface elevation for the low- flow month of October were predicted to cause losses of littoral habitat within the natural ranges for both lakes (35 cm for Upper Exeter Lake and 40 cm for Ursula Lake)	Section 6.1.6.4 will be reviewed and updated to ensure details of the littoral bathymetry and fish habitat assessment have been included.		
132	INAC-34 (July 27/07)	Section 6.1	Open Pits Source Lakes	INAC-WRD recommends that a proper assessment of the volume of Ursula and Upper Exeter lakes is required (at a minimum-bathymetry is needed). Baseline monitoring of lake levels and recharge rates area required to ensure any proposed pump rates are acceptable and do not effect these lakes. BHPB has committed to this as they have identified more data is required and data gaps need to be filled. This work should be done as soon as possible.	Agree Refer to Appendix F, Table 43, Water 1, and to Tracking # 131.	No Revision Proposed		
133	JW-20 (Aug 14/07)	Section 6.1	Open Pits Source Lakes	The reported estimate of Lac de Gras average annual recharge equates to about 130 mm/yr (over the entire watershed)assuming this is based on flow data at the outlet, how much has this varied over the period of monitoring and what is the seasonal variability? The extraction rate from Lac de Gras is estimated to be a 2% reduction in the annual flow at the outlet; what is the maximum reduction at any given time (i.e., during a dry September/October? Besides the Misery Pit, will there be (and are there) other users of Lac de Gras water (i.e., Diavik) –	The evaluation of Lac de Gras was evaluated based on average annual conditions. Additional assessment and research is required as noted in Appendix F, Table 43, Water 1. Filling of the EKATI pits has been scheduled not to interfere with pit filling activities at the Diavik mine site.	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
				estimate of cumulative water use in entire watershed?				
134	INAC-45 (July 27/07)	Appendix C Table 21	Open Pits Source Lakes	Water 1. Assurances on pump rates and lake levels influence in source lakes should be assured prior to pump filling pits and strictly monitored during pump flooding.	Agree	No Revision Proposed		
135	JW-18 (Aug 14/07)	Section 6.1 Page 112 and 113 Table 16	Open Pits Source Lakes	What are seasonal limitations to active pump flooding? Active filling time assumes about 150 days per year (June 1 through October 30), but this duration appears to be somewhat variable? Also, what are possible minimum and maximum pumping days per year (based on late freshet and early freeze-up scenarios)? How much of the filling is comprised of natural inflow from runoff, precipitation and groundwater? How much is lost to evaporation and groundwater loss? This should be depicted graphically or tabulated by season to demonstrate effect on hydrographs of source lakes and relative contributions by season (month)which can then be used to more accurately predict water quality variations and effect on source lake water balances.	Agree, these are questions which should be included as part of the more defined research on source lake water extraction. Please reference Appendix F, Table 43, Water 1.	No Revision Proposed.		
136	JW-19 (Aug 14/07)	Section 6.1	Open Pits Source Lakes	Which source lakes have stream flow monitoring stations at their outlets? Any water level monitoring at lakes? How long has data been collected? What are assumed natural annual/seasonal variations? Is data reported annually as part of water license? Are there plans to establish gauging stations at sites where no data has been collected (e.g., Upper Exeter Lake) prior to using them as source lakes?	Upper Exeter Lake Gauged outflow data from 2001 to 2003 Lake level data from 2002 to 2006 Ursula Lake Gauged outflow data from 2001 to 2006 Lake level data from 2001 to 2003 Assumed natural annual and seasonal variation were estimated from the above dataset. The above supplemental dataset was obtained as part of a data gap project specifically for pit lakes studies. The data are currently unpublished. There are no plans at the moment to further supplement this dataset.	Section 6.1.4.1 will be updated to include more detail on the data collection for source lake water extraction.		
137	JW-22 (Aug 14/07)	Section 6.1 Page 113 and 114 (bottom of page)	Open Pits Source Lakes	 "A pumping rate of 0.2 m³/s from Ursula Lake is expected to result in a reduction in lake surface elevation of 0.02 m and a reduction in Ursula outflow volume of 21.5%." How was elevation reduction calculated (what inflow and outflow rates were assumed and how much of the lake storage will be required each year to make up the difference?). The 21.5% estimate is an annual average – most of the water to Ursula is derived during freshet – so using averages are not the best measure of effect. Even so, 21.5% appears to be a large amount. What is the minimum 0.4 m³/s flow rate based on? The plan is to cease pumping in mid October to avoid pumping more water than natural discharge rates (i.e., no less than 0.4 m³/s?). Pumping discharge criteria should be rate based not volume based, and the value should reflect an amount sufficient to protect aquatic habitat for each stream. As a result, pumping rates should also increase and decrease with stream flow rates – but this concept is not explicitly stated nor implied. Thus, using the average rate may overestimate total pumping (unless pump rates also vary). What will the energy requirements be to sustain each pumping system (accounting for head losses and 	Reductions in lake elevations were determined using a simplified model, assuming the discharge sill elevation was the same as the static lake level. Further information is available in Open Pit Flooding Study, EBA Engineering Ltd, 2007. The source lake evaluation was conceptual and additional refinement of the allowable extraction rates is required (see Appendix F, Table 43, Water 1). Pumping rates will require adjustment in response to downstream stream flows. The pit filling strategy did not consider energy requirements, fuel consumption or air quality.	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
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				booster stations)? Since pumping will be filling only one pit at a time, it appears that there will be pumping for 38 years? Have large fuel price rises been considered in assessing the feasibility of this option? What are expected local and regional air quality effects? Perhaps provide some quantification of diesel consumption and expected emissions (short and long term carbon footprint). All comments above on Ursula are also relevant to other pits (e.g., Pigeon, Panda, Koala, Fox).			x <i>i</i>	
138	INAC-4	Section 6.1	Open Pits Source Lakes	Comment carried forward from Section 1.(INAC-4) It is important to note that the EKATI mine is not working in isolation within the LDG watershed. Diavik is also looking to fill its open pits with water from LDG. Future modeling is required and must take this into account.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at a future Working Group meeting for open pits. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. BHPB agrees that Diavik water use should be taken into account. 	No Revision Proposed.		
139	JW-21 (Aug 14/07)	Section 6.1	Open Pits Source Lakes	Data should be presented as hydrographs depicting annual minimums (or exceedence curves/tables).	The source lake evaluation was conceptual in nature. Additional information generated in the future from research identified in Table 43 can be used to develop hydrographs at the design phase. This information will be provided in future updates of the ICRP.	No Revision Proposed.		
140	JW-29 (Aug 14/07)	Section 6.1. Page 123	Open Pits Source Lakes	What "further evaluation of LLCF as a source" is being conducted?	LLCF studies on the physical structure of the water column in Cell D, water quality investigations, load balance modeling and downstream modeling are ongoing to assist BHPB in the operation of this facility. The information from these studies will be used to evaluate the feasibility of the LLCF as a source of water for pit flooding. Section 6.4 will be updated with this information, as part of the Section 3 review.	No Revision Proposed.		
141	IEMA-54 (July 27/07)	Appendix C	Underground Mines Closure Objectives and Criteria	Health & Safety 1. See the point under Land, Closure Criteria for Objective 2. "It is not clear how 'significant slumping or subsidence' would be measured."	See Tracking # 44.	No Revision Proposed		
142	INAC-55 (July 27/07)	Appendix C Table 22	Underground Mines Closure Objectives and Criteria	Community. Unclear why the "Community" section only references the Open Pit tables – will fish barriers be required? What about impacts to archaeology?	Fish barriers will not be required for underground mines since it will be the pit lakes outflow channels where fish would access these lakes. The surface disturbance for underground mines is currently, and is planned to be within the footprint of the open pit areas, and therefore any archaeological objectives and criteria would be covered under Open Pits Closure Objectives and Criteria.	No Revision Proposed		
143	JW-12 (Aug 14/07)	Section 6.1 Page 101 (2nd paragraph)	Underground Mines Reclamation	"The type of plug remains unsolved, since plugs would serve two purposes" What types of plugs are being considered and what will the two purposes be?	The two types of plugs would be determined by whether or not flooding of the Panda open pit would commence prior to completion of underground operations in the Koala Underground Mine. Six plugs would be required. Plugs required for filling while people are working in the Koala Underground would have higher engineered structural specifications than those without a human safety requirement.	Section 6.2.6 will be updated to include discussion on underground plugs.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
144	JW-38 (Aug 14/07)	Section 6.2 Table 33 (item 3)	Underground Mines Reclamation	How are the disturbed surface sites being enhanced to encourage natural recovery of vegetation growth?	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs. This objective was removed since most of the underground surface disturbances, other than some capped vent raises, and plugged portals, are covered under other Mine Components (ie. Open pits include most vent raises, and the Underground surface buildings etc are covered under Volume 1, Section 6.6.	No Revision Proposed		
145	INAC-71 (July 27/07)	Section 6.2.6	Underground Mines Reclamation	Section 6.2.6 indicates that vertical shafts will be "plugged and backfilling will conform to the surrounding area". It is not clear if this means construction of concrete caps overtop the vertical openings or filling them to ground surface.	All entrances to the mine will be sealed as per NWT Mine Health and Safety regulations. Engineered plugs for the vertical shafts have not been designed at this time of the mine life. More detail will be provided in future updates of the ICRP. (Reference. Part 17.03 NWT Mine Health and Safety Act and Regulations).	Direct reference to the Mine Health and Safety Act and Regulations will be included.		
146	ENR-6 (July 27/07)	Section 6.2.6	Underground Mines Reclamation	Table 35 and Table 36 <i>Koala North Underground Mine</i> <i>Closure Activities</i> and <i>Koala Underground Mine Closure</i> <i>Activities</i> both include the statement "contour local surface drainage and flow away from sealed mine portal" with their Engineering Works Section. However, <i>Panda Underground Mine Closure Activities</i> (Table 34) fails to address drainage contouring. Is this exclusion for Panda Underground intentional?	Yes, because the Koala North Portal (which is the entrance to Koala, Koala Nth and Panda Underground Mines) located on the Underground Surface Facilities pad (See Figure 34) and the Conveyor Portal (located adjacent to the Process Plant) are both covered under Koala Underground Mine Closure Activities. Panda Vent Raises are all located within the perimeter of the open pit and will be flooded along with the open pit. Please reference Figure 36. As noted on Figure 34 and 36 Koala North Fans are located outside the Koala Open Pit Perimeter.	Tables 35 and 36 will be updated to clarify the Engineering Works for the Koala and Koala North Underground Mines.The 2nd and 3rd bullets under Engineering Works for Table 35 will be removed.The 3rd bullet under Engineering Works for Table 36 Koala Underground Mine Closure Activities, will remain, since this covers the reclamation of both of the underground portals, and Koala is the last underground to complete operations in the Life of Mine Plan.		
147	INAC-66 (July 27/07)	Section 6.2	Underground Mines Reclamation	The pit flooding Scenario 2 results in an extended period of post-closure site presence. It may be more cost effective to construct the plugs in the underground workings to shorten the flooding period. This aspect will have an affect on post-closure costs. If the company does not commit to the construction of the plugs, then the reclamation security should be modified to provide for the extended site presence. This is 9 years longer than was assumed in the 2004 estimate prepared for INAC.	 WLWB Aug 14, 2007 - Once the ICRP is approved, the process for re-evaluation security will begin. BHPB. Discussion on the decision for plugs is related to safety for Koala Underground workers. See Tracking # 143. 	No Revision Proposed		
148	JW-36 (Aug 14/07)	Section 6.2 Page 137 (top of page)	Underground Mines Reclamation	What is the basis and validity for the "cone" assumption regarding estimation of zone of subsidence?		Section 6.2.4.1 will be updated to include the basis and validity for the identification of angle of subsidence.		
149	JW-39 (Aug 14/07)	Section 6.2 Table 33 (item 7)	Underground Mines Reclamation	With respect to underground mines, what diversion structures are being referred to (are these different than those discussed in Section 6.5?)?	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
150	INAC-56 (July 27/07)	Appendix C Table 22	Underground Mines Reclamation	Operations 3. BHPB is proposing to remove mobile equipment and salvageable material. BHPB should reword this to not limit removal if items are not salvageable but have the potential to influence underground water quality. Also, what is defined as salvageable material?	Salvageable material is that equipment, material etc that is of value for future use. This objective and criteria have been included as an operations objective, not as a water quality or land objective. The removal of materials, equipment, fluids that can influence water quality has been covered under Land 1. Material and equipment that is not considered as salvageable and/or will not negatively impact water quality will remain in the underground, rather than be hauled to surface and landfilled in the WRSA.	No Revision Proposed		
101	(July	Section 6.2	Mines	material from the underground is that it would be		NU REVISION PLOPOSEO		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
	27/07)		Reclamation	reasonable to remove most underground material and machinery. The sole decision on what is or isn't removed should not be based on whether it is salvageable or not.				
152	INAC-7	Section 6.2	Underground Mines Reclamation	Comment carried forward from Section 1.(INAC-8) Underground Mines. Section 1.6.2. Pg 22. States that remaining equipment with salvage value will be removed. Clarification is needed to define what is salvageable equipment, and conversely, what is to remain. An explanation of what effect the remaining equipment may have on ground water and water quality would be of value.	 WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for underground mines. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. Salvageable material is that equipment, material etc that is of future value. The materials that will be removed is covered under Volume 1, Section 6.2.6. The removal of materials, equipment, fluids that can influence water quality has been covered under Appendix C, Table 22. Land 1. See Also Tracking # 150. 	Section 6.2.6 will be updated to include a summary list of materials that will remain in the underground.		
153	INAC-70 (July 27/07)	Section 6.2.6	Underground Mines Reclamation	Section 6.2.6 indicates that equipment (mobile and stationary) which cannot be salvaged will be left in place. Generally, this is reasonable provided that it is de-contaminated first. This should include removal of batteries, hydraulic/engine/transmission/ electrical transformer oils, fuel and coolants.	See Tracking # 150, and refer to Appendix C, Table 22, Land 1.	No Revision Proposed		
154	JW-40 (Aug 14/07)	Section 6.2 Table 37	Underground Mines Water Quality	There is no reference to any water sampling and analysis monitoring program? Are the predictions of long-term mine water quality to be based on <i>only</i> the 14-day monitoring program coupled with the historical data collected to date?	Appendix C, Table 50, Water - reference is made to open pits, since the underground is located at the base of the open pits, and water quality will be monitored through the pit lakes.	No Revision Proposed.		
155	INAC-54 (July 27/07)	Appendix C Table 22	Underground Mines Water Quality	Water 1. Effluent quality criteria met in underground (Water license effluent quality criteria are too liberal as mixing with pit lakes will likely occur and affect pit lake water quality for years to come) – also concerns regarding "significant" impact determinations as presently worded of the objective.	See Tracking # 109.	No Revision Proposed		
156	JW-37 (Aug 14/07)	Section 6.2.4.2	Underground Mines Water Quality	It's not clear how water volumes and contaminant loadings were estimated using the 14-day period of sampling with historical data. Are the data representative and adequate for long-term predictions? What monitoring is currently occurring and what is the long-term plan for monitoring to help update the database and refine the water volume and contaminant loading estimates? It is evident that the predicted long-term steady state flow rate of 20 L/sec has a high degree of uncertainty. What monitoring, modeling and/or investigations are being undertaken to reduce this uncertainty? What is meant by "increase marginally in the future with depth"? Perhaps quantify the degree of increase over what time period and to what depth. What data (deep groundwater samples? trend analysis?) is being used to refine these estimates?	See Tracking # 156	Section 6.2.4.2 will be reviewed and updated to ensure the information outlined in the reviewer's comments have been included, or referenced to the appropriate reports.		
	(July 27/07)		Mines Water Quality	important in determining or underground water is important in determining overall pit lake water quality and whether meromixis will take place.				
158	IEMA-18	Section 6.2	Underground	The crucial issues for this mine component are the	Agree	No Revision Proposed.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
	(July 27/07)		Mines Water Quality	design and operation of effective pit plugs, and the need to effectively predict pit water quality and its effects on closure options and final water quality in the pit lakes.				
159	INAC-36 (July 27/07)	Section 6.2	Underground Mines Water Quality	INAC-WRD understands that TDS in the underground will likely increase in the future. It is also understood that salinity levels (from connate water) in the underground/open pits will also increase. Mixing of underground water with the water in the bottom of the pits is likely and what influence would this water have on overall pit water quality? Does BHBB have any way to stop mixing from occurring to limit potential degradation from underground water? It is assumed that the only true way to fully assess this would be to fill a test pit (pilot project) to determine what the effects are.	The preliminary assessment of mixing in the proposed pit lakes is presented in section 8.4.3. Also refer to response in Tracking # 160 below.			
160	IEMA-51 (July 27/07)	Appendix C	Underground Mines Reclamation Research	Under "Lessons Learned", BHPB claims that TDS from underground will increase only "marginally" in future. Beartooth pit water show TDS concentrations at 300 mg/L (May 2007 SNP data) and Rescan used 800 – 1000 mg/L as the basis for discussing possible meromixis in pit lakes. However, Rescan stated in the Pit Lake #2 study (pg. 2-3) that 800 mg/L is likely and this concentration has already been "observed in existing EKATI pits". The claim of future marginal increases does not appear to be consistent with these facts. We need a better understanding of this matter.	The order of magnitude estimate of 1000 mg/L TDS for preliminary pit lake stability calculations was taken considering the experience at other pit lakes (Reference Section 8.4.3, Table 86: 700-1800 mg/L TDS) as well as EKATI pit sump water measurements (Reference Section 8.4.3, Table 85: 48-800 mg/L TDS). Section 8.4.3 states that meromixis is a possibility, not a certainty: "The total mass of dissolved salts available to the pit lakes during flooding is not known and the ultimate salinity of the pit lakes is, at present difficult to predict. If the final salinity of a flooded pit is close to that of the water from the source lakes identified in Table 85, then meromixis is unlikely. However, higher salinities are likely given the presence of sump water with salinities of order of 1000 mg/L. If this is the case, comparison with other, already existing pit lakes (Table 86) indicates that meromixis is a possibility." In addition, section 8.4.3 acknowledges additional work is required to reliably estimate pit lake salinity and stability: "In conclusion, meromixis is possible in all the proposed EKATI pit lakes. Before any reliable assessment can be made, further understanding of the potential salinity of the resulting pit lakes must be developed." Please also refer to Appendix F, Table 43, Water 3.	No Revision Proposed.		
161	IEMA-52 (July 27/07)	Appendix F	Underground Mines Reclamation Research	Research on the pit plug failure and pit filling without pit plugs, may be important in determining water quality in the underground mines but is not mentioned in the reclamation research Table 44.		Appendix F, Table 43, Water 2 Research Objective and Methodologies will be expanded to include research water quality in pit lakes should an underground plug fail.		
162	IEMA-67 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Community 1. See the discussion above on pit lakes and their future human use. <i>Refer to IEMA-46.</i>	Human use of the WRSA mine component has been identified in Health & Safety 1.	No Revision Proposed		
163	IEMA-66 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Health & Safety 2. There is an error in this section as it refers to "pit lakes".		Appendix C, Table 23. Closure Objectives and Criteria for WRSA, Health and Safety will be corrected to 'WRSA'.		
164	IEMA-58 (July	Appendix C Table 23	WRSA Closure Objectives and	Air 1. BHPB should consider adding an objective such as avoidance of adverse effects from fugitive dust. This	WLWB Aug 14, 2007 - Comment outside the Board's jurisdiction.	No Revision Proposed		

Tracking	Comment	ICRP	Topic	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
	27/07)		Criteria	could be measured through appropriate closure criteria that relate to acceptability of surrounding vegetation for herbivore consumption and no significant loss of ground cover due to dust deposition.	BHPB. Current procedures in place to reduce dust generation at EKATI include: Use of dust suppressant on haul roads, site roads and airstrip during summer months. Road watering of WRSA and Pit Ramp haul roads during summer.			
					Air quality will continue to be monitored as part of our ongoing operations, and updates to the Air Quality monitoring during operations will be reflected in the closure monitoring.			
					However, it is important to note that reclamation operations planned for closure are not expected to exceed the current generation of fugitive dust (during operations), and most likely will be considerably reduced. Therefore BHPB does not see a need for measurement of impacts to vegetation from fugitive dust that exceeds operations monitoring.			
165	INAC-23	Appendix C Table 23	WRSA Closure Objectives and Criteria	Comment carried forward from Section 1.(INAC-36) Table 23 – Waste Rock. Objective 4 refers to maintaining dump lift heights at 20m maximum. How is this a closure criteria and what benefit does it provide?	WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for WRSA. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC.	No Revision Proposed		
					BHPB - This objective was removed. Please see updated Table 23 Closure Objectives and Criteria.			
166	IEMA-59 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	In the criteria specified in Table 23, does BHPB see any role for GNWT's December 2002 Ambient Air Quality Standards?	Comment outside the Board's jurisdiction. BHPB. The GNWT's standards for ambient Total Suspended Particulate (TSP) concentrations should have been cited. In effect, the GNWT's standards are identical to the National Ambient Air Quality Objectives (NAAQO) maximum desirable level for annual average TSP concentrations (60 ug/m3). The NAAQO for maximum 24 hour concentrations are likewise identical to the GNWT's standards. The difference between the NAAQO's and the GWNT's standards is that the NAAQO's also have a maximum acceptable level of annual average TSP concentration of 70 ug/m3.	Appendix C, Tables 21 and 23, Air 1 Closure Criteria will be updated to include the GNWT standards, and the CAAQC will be corrected to NAAQC.		
167	IEMA-60 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Land 1. The stated objective is really an option (encapsulation). A better objective may be to prevent problem drainage from the waste rock piles escaping into the receiving environment.	BHPB agrees with the IEMA that the stated objective is an option. Land 1 will be changed.	Appendix C, Table 23 Closure Objectives and Criteria, Land 1 will be updated to: Materials defined in the WROSMP as potentially acid generating are stabilized to prevent poor water quality seepage from WRSAs.		
168	INAC-59 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Land 12 & 13. % cover of revegetation – is this % to be determined as part of the research?	Yes. The research for % cover of vegetation for topsoil and lake sediment areas was omitted in Appendix F, Table 43 Research Summary - WRSA Land 3, (under the Methodology column). This will be corrected.	Appendix F, Table 43 Research Summary - WRSA, Land 3. (Methodology) will be corrected to state: Identify the location, substrate types, methods of establishing plant cover, and appropriate percentage cover for surface stabilization of topsoil and lake sediments storage piles.		
169	INAC-57 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Land 6. Temperatures within the WRSA to be at or below freezing - this should be reworded to "must be below freezing", to remain frozen into the future.		Land 6 will be changed to: Permafrost temperatures at measurement points in the		

Tracking Number	Comment ID	ICRP Section	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed
				Because of the various constituents within the WRSA (including grain size, water quality, etc.) temperatures below freezing is likely required to actually keep the WRSA frozen.		WRSA are below freezing.
170	INAC-58 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Land 9. BHPB's plan for removal of contaminated soil and the pumping of water potentially laden with hydrocarbons to the LLCF is unclear (i.e. acceptable criteria are needed.	Please refer to The Hydrocarbon Contaminated Materials Management Plan, Sections 4.0 and 5.0. The management (including disposal) of water and hydrocarbons as outlined in this plan will continue into closure.	No Revision Proposed
171	INAC-61 (July 27/07)	Appendix C Table 23	WRSA Closure Objectives and Criteria	Water 1. Effluent quality criteria met is seepage (Water license effluent quality criteria are too liberal as these seeps will enter the receiving environment for years to come creating additional point sources).	See Tracking # 109 and 116.	No Revision Proposed
172	ENR-21 (July 27/07)	Section 6.3.2.7	WRSA Reclamation	A table identifying the waste rock types in the Fox WRSA, as done so for Panda/Koala/Beartooth (Table 40) and Misery (Table 41) should be provided.		A table identifying the waste roo Fox WRSA will be provided.
173	JW-54 (Aug 14/07)	Section 6.3.3.2 Page 166 (4th paragraph)	WRSA Reclamation	How will the referred to 'metasediments' be evaluated?	During mining, waste rock samples will be collected and analyzed using protocols developed for the other open pits. These results will be used to determine the appropriate management response based on the geochemical characteristics.	Section 6.3.3.2 will be updated discussion/reference on how 'm are evaluated.
174	DFO-17 (July 27/07)	Section 6.3.3.3	WRSA Reclamation	BHPB states that the location of the permitted extension to the existing WRSA includes the requirement to de- water Desperation Pond but the design for the WRSA extension will be reviewed prior to mining re- commencing at Misery Pit. All alternatives should be closely examined to see if it is possible to accommodate the additional waste rock without de- watering Desperation Pond.	The mine plan for Misery was approved under the 1995 EIS. Any changes to the Mine Plan will be discussed in future ICRPs, after engineering studies have been completed.	No Revision Proposed
175	ENR-7 (July 27/07)	Section 6.3.2.1	WRSA Reclamation	"To minimize the footprint of the WRSAs while at the same time ensuring they blend in with surrounding topography, WRSA heights do not exceed 50 m above the highest topographic point over which the WRSA extent." As discussed during the Closure and Reclamation Workshop 2006, some stakeholders are of the opinion that the WRSAs do not blend in with surrounding topography. How was the design criteria selected (waste rock heights constructed 50 m above the highest point – presumably on the claim block)? Stating that the waste rock piles blend in with topography is a subjective point and should be removed from this section where technical points related to WRSA are presented. It is recommended that the rationale for the design criteria, whether it was selected randomly or with consensus with stakeholders should be included in a separate paragraph.	This statement was part of the 2002 Approved A&R Plan, and the main reason for the height criteria was to set a limit on the height of the WRSA's for long term aesthetics. WRSA height criteria are for 50m above the highest point of land within the WRSA footprint, and not for the claim block. BHPB does not believe that restricting dump heights to ensure negative aesthetics has no place in the ICRP. However, it would be appropriate to include this in Section 6.3.3.6 Designing for Closure.	"To minimize the footprint of the at the same time ensuring they surrounding topography" will be Section 6.3.2.1 to Section 6.3.3
176	JW-65 (Aug 14/07)	Section 6.3 Table 43 (item 7)	WRSA Reclamation	Distance from pit walls refers to? Which mine components are being designed for a 1:100 storm event? What is the level of uncertainty in these estimates? How is long-term climate change being considered in developing these estimates?	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs. See Tracking # 44 for discussion on Storm Events. Refer to Section 8.8 for how climate change has been considered for the large remaining structures at closure.	No Revision Proposed
177	INAC-41 (July 27/07)	Section 6.3	WRSA Reclamation	INAC-WRD understands that BHPB will conduct community consultation to determine if wildlife ramps will or will not be a strategy for closure. It will be difficult for BHPB to decide where to place ramps and how	At this time the Misery mining operations have not been completed. The site remains under Temporary Suspension of Operations, but because kimberlite ore, which was placed on the top of the Misery WRSA, is still	No Revision Proposed

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	Resolved? (yes or no)	Action Item (if applicable_
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aste rock types in the ded.		
pdated to include how 'metasediments'		
nt of the WRSA while ng they blend with the " will be moved from on 6.3.3.6.		

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				many ramps would be necessary. Will BHPB consider using the Misery WRSA to monitor and assess wildlife use and potential ramp placements and numbers?	being hauled to the Process Plant this storage area remains active and therefore would not be a good example of wildlife use at closure.			
178	JW-62 (Aug 14/07)	Section 6.3 Page 176 (1st paragraph)	WRSA Reclamation	Is the statement that "No recontouring of the side slopes will be conducted" meant for the source areas of granite listed in Table 42?	This statement is meant for all the WRSA's. When material is removed for operations or reclamation activities, the quarry areas will be graded to ensure permafrost development is encouraged and maintained in the pile(s).	No Revision Proposed		
179	NSMA-25	Section 6.3.3.6	WRSA Reclamation	Issue/Concern designing for closure should include access ramps and contouring Rationale/Explanation the current slope and materials are not human and wildlife friendly, and not compatible with surrounding environment. Proposal/Solution to minimize disturbance and expense later on the design of the waste rock piles should be done now with community guidance	 BHPB is not comfortable with constructing wildlife access ramps that will intentionally allow wildlife access to the WRSA during the period of operations. These are active mining areas, and until all active work is completed at these sites (eg. Hauling of granite, landfilling from decommissioning, and removal of materials for reclamation activities such as rock cover on the LLCF or topsoil and lake sediment for site stabilization work), wildlife will not be encouraged to access or use them. WRSAs are designed and constructed as stable structures (Reference 6.3.3.6) and the side slopes of the piles are constructed to promote cold air convection and the maintenance of permafrost (Reference 6.3.2.2). Wildlife access ramps will be constructed to enable safe passage and egress from the WRSAs for people and wildlife. BHPB intends that the access ramps will be designed with input and guidance from communities. Refer to Section 3.2.4 and Section 6.3.4 (bullet 7). 	Section 6.3.4, 1st paragraph after list of bullets will be updated to explain why there would be no re-sloping of WRSAs.		
180	NSMA-26	Section 6.3.3.6	WRSA Reclamation	Issue/Concern final profile of WRSA Rationale/Explanation the communities should be involved in determining final profile, as it will be too late to change it after it is all ready in place, as committed during EA. Proposal/Solution Aesthetics, wildlife, and human use of the WRSA's should be considered early. A TK design committee should be established	As discussed at the Closure Options Workshop in July 2006 and presented in Volume 1, Section 6.3.4 one of the main reasons for the final profile (lifts and benches - with no resloping; and flat surface on top of the WRSA) is to ensure maintenance of permafrost in the WRSA. NSMA representatives attended the workshop and would be a good source within the community to provide discussion on the pros and cons of WRSA reclamation that were discussed at the workshop. See also Tracking # 179.	No Revision Proposed		
181	JW-71 (Aug 14/07)	Section 6.3 Figure 58	WRSA Reclamation	Physical stability should also include water quantity (timing and duration to achieve water balance).	The recommendation refers to Figure 58 - WRSA Research Study Plan which has since been replaced by the updated Appendix F, Table 45. However, BHPB agrees that this information would be useful in understanding water inputs and outputs are balanced over the long term.	Water balance information for WRSA will be provided in Section 6.3.		
182	JW-60 (Aug 14/07)	Section 6.3.3.5 Page 174	WRSA Reclamation	References are made to, for example, monitoring of water flow, potentially reactive material, potential seep locations – but have not been described in previous text – and may be discussed in more detail in sections 6.4 or later; so it is difficult to comment on this section.		References will be provided in Section 6.3.3.6 list of bullets on Pg 174 for reference sections within the ICRP document, and for BHPB reports.		
183	JW-45 (Aug 14/07)	Section 6.3.2.6 Page 157 (2nd para)	WRSA Reclamation	Regarding the statement: "They were initially placed directly on the tundra and are now placed on a 5 m thick bed of granite over the tundra," what is the current and future condition of the coarse rejects – are they still placed on the tundra – and what is the long-term consequence (seepages still creating elevated	The coarse kimberlite rejects that were originally placed directly on the tundra, remain on the tundra. Two ground temperature cables have been installed in the coarse rejects pile. It is not known if these cables correspond to locations where coarse rejects were	No Revision Proposed.		

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Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
				parameters?)?	placed directly on the tundra. Measured temperatures at each location indicate the coarse rejects have reached the zero temperature curtain but have not yet frozen. Please refer to Section 6.3.7.1 and Table 50, and		<u> </u>	
184	INAC-72 (July 27/07)	Section 6.3.2.9	WRSA Reclamation	Section 6.3.2.9 indicates that PAG rock will be covered with 5 m of granite to mitigate against ARD. However, Figure 51 shows that the zero degree isotherm in August is between 4.5 and 7 m deep in 2004. It is noted that in the years 2001 and 2003 the zero degree isotherm was at about 9.5 m depth. Data for 2005 and 2006 are not presented. The later data should be presented to show that 2004 was not an unusual fluctuation in the temperature in the perimeter of the dump. This may be a minor issue. However modification of the PAG rock encapsulation in the perimeter of the dump with more than 5 m of rock may be prudent. This could be achieved by placing a thicker layer over the perimeter areas, although it would be less costly to modify the rock pile disposal plan such that no PAG within 5 m of the final surface in the perimeter areas. This latter approach would reduce the need to monitor and show that there is not a problem.	Section 6.3.2.9 refers to capping of PAG at the Misery WRSA; however, Figure 51 refers to a temperature plot for a ground temperature cable in the Panda WRSA. Figure 51 cannot be directly used to evaluate performance at the Misery WRSA. More generally, ground temperatures in the WRSAs are monitored regularly. Ongoing ground temperature monitoring is also identified as a research area in Table 45 of Appendix F. This information can be used to refine predictions of permafrost growth and its required maintenance over the long-term.	No Revision Proposed.		
185	JW-53 (Aug 14/07)	Section 6.3 Page 166 (2nd paragraph)	WRSA Reclamation	What is the criterion or protocol for determining the use of frozen toe berms?	Please refer to Section 6.3.3.6 (5th bullet).	No Revision Proposed.		
186	JW-64 (Aug 14/07)	Vol 1, Section 6.3 Table 43 (item 3)	WRSA Reclamation	Physical criteria should also include water (as in water quantities, water balances and drainage patterns [diverted]).		Section 6.3 will be reviewed and updated, or referenced to reports, to provide discussion on how the WRSA is designed to function in relation to active zones, water balance and interactions with the local hydrosphere.		
187	JW-61 (Aug 14/07)	Section 6.3.4 Page 176 (6th bullet)	WRSA Amendment Materials	What type of re-vegetation plan is envisioned and where deployed to stabilize/prevent erosion?	Please refer to Appendix F, Table 45 WRSA Research Summary, Land 2 & 3. See also Tracking # 220.	No Revision Proposed.		
188	ENR-9 (July 27/07)	Section 6.3.2.2 (last bullet)	WRSA Reclamation	"the core will remain frozen and saturated for the long term" The time frame identified in this statement is unclear. If a time frame can be deduced using data collected to date, it should be noted here in years. The uncertainties related to long term freezing should be noted here as well as a commitment by BHPB to monitor the success of this proposed closure method beyond mine closure.	Please refer to Section 8.8.4 Impact of Long Term Climate Predictions - WRSA Modeling results indicate that the WRSA will remain frozen over the next 200 years, in contrast to the local permafrost which is expected to degrade over this time (Deepened active layer and ground temperatures close to 0^0 C).	Section 6.3.2.2 will be updated to reference Section 8.8.		
189	ENR-8 (July 27/07)	Section 6.3.2.2 (2nd bullet)	WRSA Reclamation	"the ice-saturated core is expected to form at a rate of 600 mm/yr". Please include a reference here so that the reader may be directed to data in support of this claim.		The reference for noted WRSA characteristics will be inserted in Section 6.3.2.2.		
190	JW-59 (Aug 14/07)	Section 6.3 Page 173 Table 42	WRSA Reclamation	How will the removal of granite waste rock effect temperature conditions on the WRSAs?	Removal of clean granite for construction and reclamation operations will not negatively impact the development of permafrost in the waste rock pile. However, the active layer will be lowered, elevation wise, as a function of material being removed at the surface.	No Revision Proposed		
191	JW-58	Section	WRSA	Is the apparent wide range in active zone only being	The range of active layer thicknesses measured is	The ICRP will be updated to include reference		

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	(Aug 14/07)	6.3.3.4.3 Page 172 (2nd and 3rd bullets)	Reclamation	attributed to the proximity to the outside of the WRSA? What is the density/distribution of deployed thermistors? It would be helpful to have all the data tabulated and graphically (e.g., the ground temperature profiles and ground temperature histories) presented (in an appendix) to evaluate the 'current' temperature conditions, how the conditions have changed over time, and what the level of uncertainty is in predicting future conditions?	attributable to several factors including snow drifting and proximity to water bodies. Further discussion pertaining to temperatures in the Misery WRSA and ground temperature cable locations is available Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd, September, 2006. This report has been provided along with this Section 2 review table.	to EBA's 2006 report.		
192	JW-42 (Aug 14/07)	Section 6.3.2.2	WRSA Reclamation	It is apparent that certain physical variations (e.g., dominant grain size, permeability, and layering of variable grain sizes) in WRSA affect the extent and rate of growth in permafrost into the piles. Are these effects sufficiently understood to develop protocols for building the pile to optimize permafrost growth and minimize, for example, depth of active layer, depth of snowmelt and/or rain infiltration, seepage?	The processes impacting permafrost development are understood. The existing waste rock pile design used at EKATI has been shown to successfully develop permafrost conditions within the majority of the pile.	No Revision Proposed		
193	JW-43 (Aug 14/07)	Section 6.3 Page 155	WRSA Reclamation	It is not clear where the 150 m wide unfrozen margin occurs (i.e., it is not represented on Figure 43), what causes it to develop, and why the active zone would be 4 m? What is the range and level of uncertainty of the expected rate (600 mm/yr) of ice-saturation core development? How would this geometry and/or process vary throughout the waste piles? It is not clear what is meant by "the growing frozen core will gradually increase the gradient and hence the seepage velocity;" e.g., gradient of what? seepage to where? The statement regarding "all melt water and rain infiltration" appears to oversimplify the process, as it implies there is no change in the dimensions of the active layer, and thus no opportunity for melting or refreezing (and exchange/release of physical and/or dissolved components). Under what temperature/precipitation regime would the waste piles (or portions thereof) become less stable (i.e., under a long-term [> 50 yrs] climate change (e.g., increased mean temperature, shorter winter season, increased rainfall volumes and intensities)?	The development of permafrost in waste rock piles has been documented in Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd, September, 2006. The active layer depth of 4 m reflects field measured values.	The ICRP will be updated to include reference to EBA's 2006 report.		
194	JW-56 (Aug 14/07)	Section 6.3 Page 171 (4th bullet)	WRSA Reclamation	On page 155 the width of the unfrozen zone is estimated as 150 m. What is the basis for the claim that it is actually only 10 m wide? These estimates are considerably different. What is the explanation for this discrepancy?	The unfrozen zone width of 150 m formed part of a hypothesis developed in 1995, describing permafrost development in the WRSA. This hypothesis is documented in Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd, September, 2006. and was included as part of the original EKATI 1995 EIS submission. Subsequent ground temperature measurements in the WRSAs have shown significantly narrower unfrozen zones from those estimated in 1995. Additional detail and discussion is available in Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd, September, 2006.	The ICRP will be updated to include reference to EBA's 2006 report.		
195	JW-55 (Aug 14/07)	Section 6.3 Page 162 (2nd paragraph)	WRSA Reclamation	There are only a couple examples of temperature profile data (i.e., Sites 4 and 5 – Figures 51-54) used to represent the conclusions stated here. A tabulated and graphical summary of <i>all</i> the temperature data (provided in an appendix) would help one to evaluate	An evaluation of the waste rock storage areas, including a summary of ground temperature data, is available in Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd, September, 2006.	The ICRP will be updated to include reference to EBA's 2006 report.		

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				the uncertainties associated with interpretations and conclusions presented.		
196	JW-57 (Aug 14/07)	Section 6.3 Page 171 (last bullet)	WRSA Reclamation	What data is used to substantiate that "the temperatures at the base of the fill aredecreasing" What would be the effect on convection cells of capping with fine-grained material?	Ground temperature cables have been installed in the toe berms. Ground temperature readings have shown a decrease in the temperatures at the base over time. Additional information is available in Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd. September, 2006.	The ICRP will be updated to ir to EBA's 2006 report.
197	JW-44 (Aug 14/07)	Section 6.3 Page 156	WRSA Reclamation	What is meant by "the lowering of the Mean Annual Air Temperature'? (of the pile, of the ambient air immediately around the pile?)	The convective component of heat does not lower the Mean Annual Air Temperature. It has an effect similar to the lowering of the mean annual air temperature.	No Revision Proposed
198	EC-7 (July 18/07)	Section 6.3	WRSA Reclamation	With respect to the function of the WRSA and permafrost development, the present model states that the precipitation and infiltration of rainwater and snowmelt will reach the dry permafrost water rock and freeze in the ice saturated rock. However, at some point the dry permafrost will become fully saturated with ice and any run off may remain in the active layer releasing potentially barmful toxins	Once the saturated core has reached its maximum elevation, runoff will flow through the active layer and ultimately out of the pile. However, prior to developing a fully saturated core, multiple freshet and storm events will flush water through the active layer and into the lower portions of the pile where it will freeze. No deleterious material is expected to be in the active layer once the saturated core reaches its maximum elevation	Section 6.3.2.2 Permafrost De be updated to include informa term destination of runoff in th
199	ENR-10 (July 27/07)	Section 6.3.2.3	WRSA Reclamation	"Permafrost has been recognized as an effective control barrier for the prevention of metal leaching and ARD at other mine sites across Northern Canada". Please provide references for this statement so that the reader can consult the appropriate papers/reports.	Guidelines for ARD prediction in the North, Department of Indian and Northern Affairs, September 1992. Steffen, Robertson and Kirsten (BC) Inc.	Reference for this statement v in Section 6.3.2.3
200	IEMA-62 (July 27/07)	Appendix F Table 45	WRSA Reclamation	Land 6. This section should address those portions of the WRSA that do not appear to be freezing (the coarse kimberlite rejects).	This question refers to the older Research Summary Table. Please refer to Appendix F, Table 45, Land 1 for identified research on rate and permanence of permafrost in WRSAs.	No Revision Proposed
201	IEMA-19 (July 27/07)	Section 6.3	WRSA Reclamation	The Agency has not taken a position on BHPB's preferred closure option for the WRSAs, which appears to be no sloping, no revegetation, and some wildlife access ramps. It is not clear to the Agency whether closure methods for the WRSAs should encourage or deter future wildlife and human use.		No Revision Proposed.
202	IEMA-20 (July 27/07)	Section 6.3	WRSA Reclamation	The Agency would like to have seen a stronger indication of community preferences and consensus on future use of the rock piles. There is a need for further community consultation by the company to formulate closure objectives and criteria that reflect community wishes. We intend to discuss this further with the company prior to the Working Group meeting.	Please reference WLWB letter Aug 21, 2007	No Revision Proposed.
203	DFO-16 (July 27/07)	Section 6.3.2.1	WRSA Reclamation	In order to minimize the footprint of future and if possible current waste rock storage areas, BHPB should consider placing waste rock in pits as they become available due to cessation of mining activity. This would not only reduce the footprint on the terrestrial landscape but reduce the amount of water and time required to fill the end pit lakes. It would also provide an opportunity for waste rock storage areas to be closed as envisioned in the 1995 EIS where they were to have sloped sides with vegetation communities established on the side slopes.	See Tracking # 72	No Revision Proposed.
204	JW-49 (Aug 14/07)	Section 6.3.2.7 Page 161	WRSA Reclamation	(<i>Re Sump Water Disposal Area</i>) What are the long-term plans and predicted conditions of this area?	As discussed in Section 6.3.2.7, Pg 161, the "disposal of excess decanted water" no longer is at the Coarse Kimberlite Reject Area, but is to the LLCF. Long term plans for this area have been covered in Section 6.3.4 Final Landscape at Closure (4th bullet).	No Revision Proposed
205	ENR-17	Section	WRSA	"Treated material from the Landfarm which meets	Agree with ENR - further information on the long term	Section 6.3.2.7 will be update

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	(July 27/07)	6.3.2.7 Page 161- 162	Reclamation	GNWT's Industrial Remediation Criteria, will be deposited at the Old Camp storage area". It should be noted if this treated soil is intended for further reclamation efforts and how this Old Camp storage area will be decommissioned during closure.	plan for this material should be included. Discussion on Old Camp reclamation is covered in Section 6.6. Buildings and Infrastructure.	discussion on the use of treated material.		
206	ENR-15 (July 27/07)	Section 6.3.2.7	WRSA Reclamation	As indicated within the <i>Hydrocarbon Impacted Materials</i> <i>Management Plan</i> " the Contaminated Snow Containment Facility (CSCF) and the Landfill require periodic skimming of the free phase hydrocarbons and subsequent draining of the sump. Oil skimmed from these sumps is into totes and stored for offsite shipment if contaminated, or incinerated on site if non- contaminated". It is recommended that this information be included within Section 6.3.2.7.		Section 6.3.2.7 will be updated to include this information, as outlined in the Hydrocarbon Contaminated Materials Management Plan.		
207	ENR-22 (July 27/07)	Section 6.3.2.9	WRSA Reclamation	At temporary suspension of mining the Misery landfill was covered with a granite cap. If and when the Misery site begins production again, is the Misery landfill intended for reuse?	The landfill at Misery will not be re-exposed. A landfill will be created adjacent to the old landfill, or at another location in the footprint of the WRSA as agreed to by the DIAND Inspector.	No Revision Proposed.		
208	IEMA-8	Section 5.0	WRSA Reclamation	Comment carried forward from Section 1.(IEMA-19) Pg 74. What are the projections of the amount of waste to be landfilled and/or backhauled during the remainder of the Life of Mine Plan, including closure and what is the capacity of existing sites to handle these materials?	The expected volume of backhaul material and truckloads at mine closure is unknown at this time, and will be reviewed closer to the completion of the Final Closure Plan. The current landfill site at the EKATI Main Camp will be used for inert waste during mining operations. The volume of inert waste disposed in the landfill in 2005 was approximately 40,380 m ³ . Should expansion of the landfill be necessary, it will be permitted as required and at the appropriate time. The location of the landfill to hold inert materials will be finalized closer to final closure. At this time the total expected volume of inert demolition material is 2.4 M m ³ . The options for demolition landfill location include the WRSA and exhausted open pits. As the inert material is land filled it will be layered and backfilled with waste rock. (Section 6.6.4.1).	No Revision Proposed.		
209	IEMA-9	Section 5.0	WRSA Reclamation	Comment carried forward from Section 1.(IEMA-21) Pg 74. The total volume of waste generated from now until closure should be accounted for and compared against remaining capacity.	See Tracking # 208.	No Revision Proposed.		
210	ENR-18 (July 27/07)	Section 6.3.2.7	WRSA Reclamation	Hydrocarbon-impacted material is also stored at the Old Camp and at the northern end of the Panda/Koala/Beartooth WRSA, and is monitored as part of the Closure and Reclamation Program. It is unclear as to why hydrocarbon-impacted material is being stored here as opposed to being treated at the Landfarm. What activities are proposed for these areas of contaminated soils? How are they monitored as part of the Closure and Reclamation Plan? It is requested that the plan include information detailing the decommissioning of these waste disposal areas.	The management of hydrocarbon impacted materials during operations is outlined in the Hydrocarbon Impacted Materials Management Plan. Materials from the Old Camp Fuel Farm and the containment area at the north end of the Beartooth WRSA are being stored temporarily in lined containment areas. This material is being tested with the intention of using as fill, or moving to the centralized treatment facility.	Volume 1, Section 6.3.2.7 will be updated to include how this material is monitored, and the long term plan for disposal/remediation of this material.		
211	ENR-19 (July 27/07)	Section 6.3.2.7	WRSA Reclamation	It is proposed that Zone S be encapsulated within the permafrost as waste rock is added to these areas. It is recommended that the depth of the coverage required be noted	Reclamation activities for Zone S have been provided in Section 6.3.4. (4th bullet)	No Revision Proposed.		
212	ENR-23 (July 27/07)	Section 6.3.2.9	WRSA Reclamation	Misery WRSA contains PAG material that was "encapsulated in granite at a thickness of 5 m to ensure encapsulation by permafrost in the long term. Monitoring of the WRSA demonstrates that the design is working".	Thermal monitoring data for the Misery WRSA are provided in the annual seepage reports. Readers are directed to a report on this topic (Thermal Evaluation of Waste Rock Storage Areas, EKATI Diamond Mine, EBA Engineering Ltd, September 2006).	Section 6.3.2.9 will be reviewed and updated to ensure references the EBA and Seepage Reports are included.		

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				 Section 6.3.3.4.3 further elaborates on the WRSA temperature data, but it is not clear what criteria have been met leading to the conclusion that the pile design is "working". It is recommended that further detail be provided to accompany this statement. As well, it would be appropriate to state BHPB's intention to monitor the success of the design in the future or to state instead that the pile design is working "to date". Given that there are active layers up to 21 m in thickness in the Misery WRSA, (pp 172) has there been any data collected to determine if acid is generated in this zone during summer months? Seepage summary tables provided are useful, but direct sampling of water from the Misery WRSA would be helpful in predicting future water quality trends. Is this information available? Acid generation is often postponed by the presence of neutralizing material, but acid can form much later when the supply of neutralizing materials is exhausted. The statement on the WRSA design should state the inherent uncertainty in any ARD assessment, especially where potentially acid-generating material 	No data have been collected specifically within the WRSA. SEEP-052 (data annual seepage reports) emerges close to the toe and is providing a good long term indication of whether acid is being generated inside the WRSA. At present, the drainage is consistently near neutral pH. The comment makes reference to delay of acid generation by the presence of neutralizing material. In fact, laboratory tests on biotite schist showed that the delay period was relatively short (less than a year) because the schist lacks abundant neutralizing material (see 2002 Seepage Report, Figure 5.4)			
213	ENR-24 (July 27/07)	Section 6.3.3.3	WRSA Reclamation	has been identified. The anticipated volumes of biotite schist to be mined in the future mine plan for Misery exceeds that of granite. Will granite from other parts of the site be used in the same design for future WRSAs? If it will be different, please provide details. The location for the WRSA extension is mentioned in Section 6.3.3.3 but not the design.	The anticipated volumes of granite and biotite schist will be provided when the final open pit (if this goes ahead as a pushback) or underground design for Misery is in place. Figure 50 outlines the design of the Misery WRSA pushback design.	No Revision Proposed.		
214	JW-68 (Aug 14/07)	Section 6.3 Table 49	WRSA Reclamation	The average NP/AP of the Misery Schist is 2.5, with some exceptionally low values. What is the long-term plan for this material?	The Misery WRSA storage area has been designed to encourage permafrost development and cooling of the rock to reduced weathering rates. The current thermal monitoring data indicate that the approach is functioning to prevent acidity from forming. The current plan is to continue thermal and seepage monitoring to evaluate trends.	Section 6.3.3.4.3 will be reviewed to ensure the long term plan for this material has been included.		
215	ENR-14 (July 27/07)	Section 6.3.2.7	WRSA Reclamation	Understandably, little information is provided here on the landfill contents (a table containing some of the materials disposed of in the landfill, pp. 161). However, a reference should be included in this section to reports containing detailed information on the types and quantities of material being stored here and recycling efforts.	BHPB believes that sufficient information has been provided on the contents of the landfill. (Please refer to Section 6.3.2.7, Pg 161).	Section 6.3.2.7 will be updated to include a summary of how and what materials will be recycled at closure.		
216	JW-48 (Aug 14/07)	Section 6.3 Page 161	WRSA Reclamation	What are the long-term plans for the CSCF? Will it remain in the CSRA?	Please refer to Section 6.3.4, Pg 176, 4th bullet, for the reclamation plan for the CSCF.	No Revision Proposed.		
217	JW-50 (Aug 14/07)	Section 6.3 Page 162 (3rd paragraph)	WRSA Reclamation	What are the long-term plans for the hydrocarbon- impacted material that do not meet GNWT's remediation criteria?Where will the material that meets GNWT's criteria be placed for long-term?	Please refer to Section 6.3.4, Pg 176, 4th bullet, for the reclamation of materials which have been identified to provide an adverse impact on the receiving environment.	No Revision Proposed.		
218	JW-51 (Aug 14/07)	Section 6.3 Page 163 (bottom of page)	WRSA Reclamation	What is the current level of understanding regarding the PAG of the biotite schist? Based on how many and what types of analyses?		Section 6.3.2.9 will be reviewed and updated to ensure information is provided on the PAG of the biotite schist in the Misery WRSA, along with appropriate references.		
219	INAC-22	Appendix C Table 23	WRSA Amendment Materials	Comment carried forward from Section 1.(INAC-35) Table 23. Overburden piles are not mentioned in this section.	WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for WRSA. However,	No Revision Proposed		

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					time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC.			
					Overburden material (Topsoil and Lake Sediments) have been included in the Closure Objectives and Criteria Table 23 (Version 1.0. June 20, 2007), under Land 12 & 13.			
220	JW-47 (Aug 14/07)	Section 6.3 Page 158 (bottom of page)	WRSA Amendment Materials	How/where will the Koala topsoil be used in reclamation?	Salvaged topsoil from the Koala, Beartooth, Misery, Fox, Sable and Pigeon sites will be used for reclamation of camp pads and laydown pads. The research for the use of topsoil and lake sediments for reclamation is covered under the Buildings and Infrastructure Reclamation Research Summary (Section 3 Review). Because topsoil and lake sediments have been stored near WRSA's in the interim, prior to use for reclamation, these storage sites have been included in the WRSA Section 6.3. The proposed use of topsoil and lake sediment at closure has been covered under Section 6.6.4.7 (Buildings and Infrastructure).	No Revision Proposed		
221	JW-14 (Aug 14/07)	Section 6.1.4.2 Page 105 (2nd paragraph)	WRSA Amendment Materials	Reference to lake sediments exposed after de-watering are excavated and stored for reclamation – first time this topic is mentioned. Are there significant volumes and what is value of this material? Current plans apparently do not call for re-vegetationso is there any other beneficial use for this material?	Lake sediments/glacial till overburden are stored near Panda/Koala/Beartooth WRSA. This is storage only. The closure plan use for this material is provided under Section 6.6.4.7. Volumes for this material have been provided in Table 40.	Section 6.3.2.6 Paragraph 3, will be updated to include the stored volumes for Panda and Koala North Lake Sediments.		
222	ENR-20 (July 27/07)	Section 6.3.2.8	WRSA Amendment Materials	Rehabilitation of Fox topsoil stockpile was conducted in September 2004 with seed and fertilizer application similar to Koala and Misery storage area. It would be worthwhile to indicate if rehabilitation of the stockpiles was successful, and if further treatment or monitoring is planned.	Topsoil storage sites are a temporary storage until this material is used for reclamation of mine components. At this time topsoil has been identified for use in reclaiming camp and laydown pads. In the interim rehabilitation of topsoil sites is required for stabilization, and to date there has been no indication of erosion from the Fox Topsoil pile.	Appendix F Table 45, WRSA Research Summary Table, Land 3 will be reviewed to ensure learnings are provided, and as well as if further monitoring and treatment are planned.		
223	JW-63 (Aug 14/07)	Section 6.3 Page 176 (2nd paragraph, Figures 55- 57)	WRSA Amendment Materials	If no active revegetationwill be conducted, how/where will the topsoil be used? Figures 55-57 depict projected landscapes at closure. These figures are not clear. It would help to have the same information depicted on estimated contour maps (with drainages, basin boundaries, pertinent facilities) and cross sections to better depict proposed closure conditions.	Reference Tracking # 220, 221 and 222 for discussion on salvaged materials use. Also, reference Tracking # 283 on formatting.	Figures 55-57 will be updated to include scale, and a map with contour, drainage basin boundaries will be included.		
224	JW-66 (Aug 14/07)	Section 6.3 Table 47	WRSA Amendment Materials	Closure method is listed as "no reclamation, no vegetation," this appears to be contrary to Appendix D (p 148) that describes lake sediments and till used for reclamation amendment or seed [and fertilize directly].	Lake Sediments and Topsoil will be used for future reclamation efforts to promote vegetation establishment at other sites at EKATI (Reference Section 6.3.2.6). However, in the case where some of this material may remain in place, and require final stabilization work this activity should be included. See Tracking # 220, 221 and 222 for discussion on salvaged materials use.	Volume 1, Section 6.3.6, Tables 44-48. An additional bullet will be included in Tables 44- 48 to cover Engineering/Environmental activities to complete this activity. In addition the Closure Method on these tables will be updated to include this work.		
225	INAC-73 (July 27/07)	Section 6.3.4	WRSA Amendment Materials	Section $6.3.4 - 6^{th}$ bullet states that "Topsoil, lake bottom sediment will be reused where possible". Section 6.1.4.2 (Pits) states "Lake sediments exposed after dewateringstored for use in reclamation and revegetation during closure." Apparently in contrast to these statements, Section 6.3.4 goes on to state "No active revegetation of the waste rock storage areas will	Lake sediments/glacial till overburden and topsoil are stockpiled for future reclamation use (where possible - since method of use and destination has not been finalized). These are storage sites only, and are indicated in Figures 46, 47 and 48. If this salvaged material cannot be used, or is not fully used the sites will be stabilized through vegetation or rock cover (See	Section 6.3.4 will be updated to provide an explanation for no-revegetation work on the top of WRSAs.		

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				be conducted". No rationale is provided as to why no effort in the interest of revegetation should be acceptable to stakeholders. This point also applies to Tables 44 to 48, where the closure method is "no vegetation".	Closure Objectives and Criteria Table 23, Appendix C, Land 12 & 13). Waste Rock piles mostly contain granite and coarse rejects. These will be permanent piles, with a flat, open surface. Within the pile there are large interstitial spaces which do not facilitate plant establishment because of the poor ability to hold moisture. It is very unlikely that vegetation will be able to establish on WRSA's. Also, in keeping with the local tundra, where there are extensive areas of boulder fields, not unlike the tops of the WRSAs, the common vegetation cover is lichens. BHP Billiton is testing the concept of lichen establishment and if this option looks feasible BHPB will include this research in future updates of the ICRP.			
226	IEMA-55 (July 27/07)	Section 6.3	WRSA Amendment Materials	The Agency has been under the impression that the salvaged soil areas were to be used for revegetation materials but BHPB's current approach appears to be simple promotion of revegetation of these areas as part of the waste rock storage areas. Is this the best use for this material that was carefully separated and stored?	See Tracking # 220, 221 and 222 for discussion on salvaged materials use.	No Revision Proposed		
227	IEMA-64 (July 27/07)	Appendix C Table 23	WRSA Water Quality	Water 1. Here, the relevant water quality criteria ought to be protection of aquatic life, not current license criteria (see the discussion above on Pit Lakes water closure criteria). See page 2 of this response for discussion regarding the water quality criteria.	See Tracking # 109, 115 and 116.	No Revision Proposed.		
228	ENR-12 (July 27/07)	Section 6.3.2.6	WRSA Water Quality	"Further information is requested regarding the acid generating potential of the barren kimberlite and diabase material. Text refers to biotite schist as potentially acid generating material and employs the same process for disposal. Are we to believe that since these materials will be frozen in place that they are also acid generating? Text should be explicit in this regard.	The reviewer is referred to the "Geochemical Characterization and Metal Leaching Management Plan, Appendix B" (November 2006, re-issued in August 2007 following comments by reviewers) for all available geochemical information on waste rock.	Section 6.3.2.6 will be updated to include this reference.		
229	JW-67 (Aug 14/07)	Section 6.3.3.7 Page 187	WRSA Water Quality	What are the risks of the existing seepages?	Please reference the bi-annual EKATI Diamond Mine Seepage Reports for further discussion on Seepage Monitoring during operations. Also, refer to Tracking # 285 regards Adaptive Management	Section 6.3.4 will include a discussion on predicted remaining seepages and risks (if any) associated with these seepages. References will also be provided to the operations Seepage Monitoring Reports.		
230	JW-46 (Aug 14/07)	Section 6.3 Page 158 (top of page)	WRSA Water Quality	Where do the minor monitored seeps drain to and what is the long-term plan for these seeps?	Please reference the bi-annual EKATI Diamond Mine Seepage Reports for the locations of seeps. Appendix G, Table 51 (Water 1), and Table 57 provide the Monitoring Plan and the Monitoring Frequency for WRSA Seeps.	No Revision Proposed.		
231	INAC-39 (July 27/07)	Section 6.3	WRSA Water Quality	INAC-WRD understands that it is possible that the freezing processes may actually cause increased concentrations of various parameters in the surrounding waters as the core of the WRSA freezes. Also, it is understood the coarse kimberlite rejects appear to be more difficult to freeze. What type of research and monitoring is BHPB planning to assess these particular issues? INAC-WRD notes that seepages from the WRSAs have been of poor quality, even though freezing is occurring in the WRSA and toe berms have been constructed (see INAC's comments on the 2006 Seepage Report).	Coarse rejects are typically deposited at higher moisture contents than waste rock. The high water contents mean that the latent heat that must be liberated to freeze the coarse rejects is orders of magnitude higher than it is in the waste rock. Therefore, it takes considerably more cold to overcome the zero curtain effect and actually freeze the material as compared to waste rock. Freeze concentration is well-known effect that leads to increased concentrations in water. This was noted as possible effect responsible for elevated concentrations of sulphate, magnesium and calcium in the CKRSA waters (Reference 2001 Seepage Report).	No Revision Proposed.		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item (if applicable
					BHPB respectfully disagrees with the reviewer that seepages from WRSA have been of poor quality. Only one seep (SEEP-019) has required action to address quality to discharge to Bearclaw Lake. All other seeps do not drain directly to the receiving environment and therefore cannot be compared to criteria and defined as "poor quality".			(
232	JW-69 (Aug 14/07)	Section 6.3.7.1 Table 50	WRSA Water Quality	With respect to the P95 values for the CKRSA – relatively low pH and high metal concentrations – what are the observed trends of these parameters and long- term predictions? Level of uncertainty in the predictions?	The annual seepage reports present the chemistry which is the basis for these statistics. Due to expansion of the Panda/Koala/Beartooth WRSA around the CKRSA, the seeps were covered and new monitoring points have been established. Prior to this occurring, seepage chemistry was relatively stable. Continued monitoring will allow trends at the new monitoring points to be established.	Section 6.3.7.1 will include a reference to the Annual Seepage Report for the Table 50 values.		
233	INAC-6	Section 6.3	WRSA Water Quality	Comment carried forward from Section 1.(INAC-6) Waste Rock Storage Areas Section 1.6.3. Pg 23. 'Seepage from the WRSA will be negligible and will be monitored for signs of adverse trends in seepage quality for a period after closure'. Greater detail is needed in terms of what constitutes an adverse trend and what will be done about it? The duration and procedure for the WRSA monitoring requires clarification.	 WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for WRSA. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. Please reference Appendix G, Table 23, Water 1 for monitoring of WRSA seepage. See also Tracking # 285 on Adaptive Management. 	No Revision Proposed.		
234	EC-6 (July 18/07)	Section 6.3	WRSA Water Quality	In Section 6.1 water quality parameters and numbers are cited in Table 15 with respect to closure discharge criteria for the WRSA. These limits will need to be evaluated in terms of the receiving environment water quality, and in terms of loading which will occur over time, as previously mentioned in our March 19 th letter.	Reference Tracking # 109, 115 and 116.	No Revision Proposed.		
235	ENR-11 (July 27/07)	Section 6.3.2.6	WRSA Water Quality	Placement of processed kimberlite on naturally acidic tundra resulted in "elevated levels of certain parameters." Where can this data be reviewed? A reference should be included here as well as the "parameters". All contaminants of concern should be readily identified to stakeholders. The language here does not reflect BHPB's commitment to transparency in all of its reporting efforts. Panda pit is said to contain only benign materials, yet there is a reference to diabase and barren kimberlite being frozen in place here. How does BHPB define benign in this context? Are these benign materials? If so, why is it important that they are frozen in place with the granite? It is recommended that a reference to documents containing more information on materials classification be included in this section.	 Water quality effects around the CKRSA were evaluated thoroughly and presented in the 2002 Seepage Report. Detailed water chemistry in the vicinity of the CKRSA can be found in Appendix D.7. These results formed the basis for the management decision presented in the referenced section. The geochemical characteristics of the rock at Panda Pit have been presented in seepage reports since 1999. The reviewer is also referred to the "Geochemical Characterization and Metal Leaching Management Plan, Appendix B" (November 2006, re-issued in August 2007 following reviewers comments) for all available geochemical information on waste rock. This report discusses the geochemical classification of the rock. Diabase and barren kimberlite are referred to specifically because these two rock types locally contain elevated subhur concentrations. The decision to place the rock at place the r	References will be provided.		
					a location where it would freeze was considered precautionary though no impacts were expected.			
236	ENR-16 (July 27/07)	Section 6.3.2.7	Quality	I ne Sump Water Disposal Area was a designated area located within the Coarse Kimberlite Reject Storage Area for the disposal of wastewater. In September 2006, following approval of the <i>Wastewater and</i> <i>Processed Kimberlite Management Plan</i> , all wastewater	This discussion is around the Racetrack facility. Not all water deposited in Cell B is tested prior to disposal. Truck shop sumps are tested periodically (Rich to confirm frequency), but Cell B also accepts rainwater in sumps around site which is not tested prior to disposal.	NO REVISION Proposed.		

Tracking	Comment	ICRP	Topic	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
				is now disposed directly to the LLCF, Cell B. It is not indicated whether or not Water License Criteria is applied to this wastewater directly entering the LLCF. In addition, the current status of the Sump Water Disposal Area is not provided. Has it been decommissioned?	The entire LLCF water body is tested for compliance to water quality criteria at 1616-30. The water License clearly states in Part F. 13. a) that 1616-30 (LLCF) meet the effluent water requirements. Other SNP stations upstream (1616-29, -28, -26) do not have to meet criteria. The Racetrack is not being used any longer, and there is presently no monitoring at the Racetrack, however, signs are present indicating that the facility is closed and all water now reports to Cell B of the LLCF.		x <i>i</i>	
237	IEMA-68 (July 27/07)	Appendix F Table 45	WRSA Reclamation Research	Are there any "Lessons Learned" from how the Colomac or other northern mine closures have treated waste rock piles?		BHPB will review and consider the benefit of, and inclusion of Lessons Learned from Colomac or other Northern Mines for future reclamation research.		
238	JW-72 (Aug 14/07)	Appendix G Section 6.3.9 Page 192 (bottom of page)	WRSA Monitoring	On page 30 the closure monitoring period [after pits are filled in?] is depicted as 9 years, which is different than the 5-yr period stated here.	Pg 192 (Vol 1 Section 6.3.9). This paragraph states that monitoring of WRSA will be over a 5 year period. Table 51 outlines the type and duration of monitoring.	No Revision Proposed		
239	INAC-74 (July 27/07)	Appendix G Table 51	WRSA Monitoring	Table 51 provides a description of closure monitoring programs. A threshold for the "response trigger" is indicated. However, there is no description or commitment to a Response. The table is not clear as to when "Year 1" occurs (end of mining or end of final contour activities). It is recommended that "Year 1" coincide with end of surface reclamation and the initial verification of acceptable seepage water quality.	INAC is correct, Year 1 could coincide with the end of surface reclamation (in the case of the WRSA this would be after materials for LLCF rock capping have been removed and the remaining surface is stabilized. See also Tracking # 285 for Adaptive Management Plan.	No Revision Proposed		
240	JW-52 (Aug 14/07)	Appendix G [Also Section 6.3 Page 164 (top of page)]	WRSA Monitoring	What type and frequency of monitoring of the WRSA is occurring? Does the clause "the design is working," meant to convey strictly that permafrost growth is occurring?	Ground temperatures in the Misery WRSA are monitored four times per year. Monitoring of temperatures in the Misery WRSA have shown the development of permafrost conditions in the majority of the WRSA, consistent with the original design intent. Additional information pertaining to the Misery WRSA performance is available in Thermal Evaluation of Waste Rock Piles EKATI Diamond Mine, EBA Engineering Consultants Ltd. September, 2006.	The ICRP will be updated to include reference to EBA's 2006 report.		
241	IEMA-61 (July 27/07)	Appendix G Table 51	WRSA Monitoring	Land 2. The monitoring period for revegetated sites should begin after effects of any fertilization have fully dissipated.	BHPB cannot commit to this, since it is not known at this time when 'fully dissipated' is reached/measured, and would not account for use of local or natural fertilizers, or enhancements to encourage vegetation growth or natural colonization.	No Revision Proposed		
242	INAC-40 (July 27/07)	Section 6.3	WRSA Formatting	In Table 58 (p.192) that outlines the WRSA Research Study Plan, the Chemical Stability section makes reference to Pit Lake water quality. It is assumed that this is an error as the text is identical to the Pit Lake Research Study Plan (p. 128).	Revised Research Summary Tables have been provided to the Working Group for Appendix G. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
243	IEMA-57 (July 27/07)	Section 6.3	WRSA Formatting	WRSA Figures 46-50 and 55-57 in Volume 1 have no scale on them. This makes them hard to understand.		A scale will be provided for these figures.		
244	NSMA-20	Appendix C Table 21	Stakeholder Engagement	Community 1. Issue/Concern design of fish barriers (if there were to be any) would not be sufficient evidence of community expectations or TK use Rationale/Explanation Communities should not be restricted or controlled as to where their knowledge is applied or what portions are considered more valuable.	BHPB will continue to look for opportunities for communities to participate in closure plan development. The company does not intend to limit the incorporation of TK in closure planning and activities, and will consider all suggestions the communities might have for closure and reclamation.	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved?	Action Item
				Proposal/Solution More respect should be shown to communities as owners and occupiers of lands and existing water users, the community should tell BHP how it wants to be engaged			(yes of no)	
245	ENR-25 (July 27/07)	Section 6.3.4	Stakeholder Engagement	BHPB states "The location and design [of wildlife egress ramps] are to be defined based on consultation with local communities and their understanding of caribou migration pathways and observations made local to the site prior to and during operations." ENR staff request that as a primary agency responsible for wildlife management and the availability of in-house expertise that we be included in these consultations.	BHPB has committed to the use of TK in closure planning with an equal weight as a science based analysis. Any information from communities that relates to the construction of wildlife access/egress on WRSA will be available for review by ENR and other regulatory agencies.	No Revision Proposed.		
246	IEMA-46 (July 27/07)	Appendix C Table 23.	Stakeholder Engagement	Community 1. It is not clear how traditional land use or TK has been used to set closure criteria that promote safe community use of pit lakes. Future uses may include travel routes, camping and/or fishing. Closure criteria should be developed around these potential uses (for example, ample ice thickness for safe crossings, potable water quality variables, safe fish) and specific monitoring programs should be in place to measure achievement of these criteria.	IEMA's comment relates to two different objectives. The criteria in place for the incorporation of TK are at the conceptual level. The purpose of the objective and criteria for community is to measure engagement, and will be refined with future updates of the ICRP. Ice thickness, water quality and maintenance of fish habitats downstream of pit lakes are included in Land, Water, and Health & Safety Objectives and Criteria.	No Revision Proposed.		
247	DFO-19 (July 27/07)	General Comments	Stakeholder Engagement	DFO realizes that this is an Interim Closure and Reclamation Plan that will change over time since the mine plan is dynamic. However, it is DFO's opinion that all parties represented in the working group should work together to form an overall vision of what the mine site should look like when BHPB is gone that is as close as possible to what was there before mining operations began. Closure objectives and criteria should be geared towards this outcome. If studies undertaken in the reclamation research plan provide data that demonstrate that objectives are unattainable we can adjust them, but at the outset we should aim to meet the BHPB reclamation goal. <i>Return the EKATI minesite to viable, and wherever</i> <i>practicable, self sustaining ecosystems that are</i> <i>compatible with a healthy environment, human activities</i> and the surround onvironment	 DFO, other regulatory agencies, the IEMA and the communities have all had the opportunity to participate in the development of this Draft ICRP. For more detail on regulatory and community participation please review Appendix B. BHPB is concerned that DFO is expecting a restoration plan, rather than a reclamation plan. Closure activities in the ICRP are toward a 'Reclamation' Plan, as is defined in the Reclamation Goal. 	No Revision Proposed.		
248	IEMA-17 (July 27/07)	Section 6.1	Stakeholder Engagement	We are also of the view that BHPB should conduct further community consultation to establish workable closure objectives and criteria for future human use of the pit lakes areas.	Please refer to Appendix B for stakeholder consultation through the development of the ICRP. Stakeholder engagement will continue with future updates of the ICRP.	No Revision Proposed.		
249	IEMA-47 (July 27/07)	Section 6.1	Stakeholder Engagement	While the Agency generally supports pump flooding of pit lakes, to fully develop closure criteria, there is a need for BHPB to consult with Aboriginal communities to reach some level of consensus of desired end uses for all mine components, and in this case for the pit lakes. Once the desired end uses are identified, proper closure objectives and criteria can be developed related to future community use that demonstrates the application of TK.	Please refer to Appendix B for stakeholder consultation through the development of the ICRP. Stakeholder engagement will continue with future updates of the ICRP.	No Revision Proposed.		
250		Appondix C	Wildlife	Hoalth & Safaty 5. The statement "wildlife and human	In the context of PUDD's Health, Seferic Environment	No Povicion Proposod		
230	(July 27/07)	Table 21	VVIIGINE	use not significantly compromised" is too general; what is the definition of significant in this context, how will	and Community Reporting Manual significant is measured as 'Single fatality and/or severe irreversible			

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
				consultation address this issue and the potential traditional use in the area.	disability or impairment (>30%) to one or more persons.'			
251	INAC-62 (July 27/07)	Appendix C Table 23	Wildlife	Health & Safety 2 (was 5). The statement "wildlife and human use not significantly compromised" is too general; what is the definition of significant in this context, how will consultation address this issue and the potential traditional use of the area.	See Tracking # 250	No Revision Proposed		
252	IEMA-41 (July 27/07)	Appendix G	Wildlife	Wildlife 4. (wildlife using the area) are vague and difficult to quantify (wildlife observed using the area adjacent to the pit lake). Something more detailed such as "observance of wildlife species similar to other control sites" or some other measure may be more appropriate.	BHPB proposes to replace the individual mine component wildlife monitoring as outlined in the Closure Objectives and Criteria Table 21 (Wildlife 1), with a WEMP program similar to the one currently used for operations. As discussed in Appendix G Section 7.1 this program is currently operationally based and there are regular review and updates to the program. The program is also expected to be adapted to suit the changing requirements during closure. The WEMP is based on a series of monitoring objectives and scientific studies which were designed, with community input, to determine whether or not mine activities have an impact on wildlife and/or wildlife habitat (with primary focus on VECs). More information on the WEMP can be obtained from annual WEMP reports. The Closure WEMP would commence in 2020, at the completion of mining operations, continue through the period of most intense closure activity (decommissioning), and continue for 10 years to 2030. This plan, similar to the present program, would monitor wildlife in the claim block, and would have specific focus in areas of concentrated infrastructure and closure activities.	Wildlife 1 will be removed from Table 21, in Appendix C. This would be replaced by an overall Closure WEMP. Appendix G Section 7.1 will be updated to discuss the Closure WEMP. Appendix G, Table 49, Wildlife 1 will remain the same, but Table 55 in the same Appendix, will have the monitoring WEMP monitoring expanded to 10 years.		
253	INAC-21	Appendix C Table 23	Wildlife	Comment carried forward from Section 1.(INAC-34) Table 23 – Waste Rock. Objective 4, Biological Stability refers to "wildlife use of WRSA has been demonstrated". What does this mean? Use is demonstrated if one animal goes there occasionally. Would this be acceptable to stakeholders? There should also be a need to demonstrate that any such use did not have any negative effects such as enhanced predation or damaged hooves.	 WLWB April 13, 2007 – As this comment relates to a specific mine component, it will be more fully discussed at the Working Group meeting for WRSA. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with INAC. BHPB. Please refer to new Closure Objectives and Criteria Table 23. Wildlife 1 covers access and egress for wildlife; Health & Safety 2 covers safe use of the WRSA. See also, Tracking # 252 	No Revision Proposed		
254	ENR-28 (July 28/07)	Section 6.1	Wildlife	The link between increased raptor nesting habitat and the effect on passerines and other migratory birds is not discussed.	This will be discussed once there is a more informed outline of the amount of exposed pit walls remaining after pit lake flooding.	No Revision Proposed		
255	IEMA-39 (July 27/07)	Appendix G Table 55-57	Wildlife	Wildlife 1. BHPB proposes a 5-year period to conduct a WEMP for all closure monitoring programs. Given that much of the monitoring will relate to how wildlife (especially caribou, but also bears and other VECs) will adapt over time to the physical structures left (e.g. roads, pits, LLCF, WRSAs, wildlife ramps), and what the permanent impacts will be, a 5-year monitoring period seems far too short to address these issues. Many of the effects of the Mine observed with wildlife were not evident until more than 5 years of data were obtained (WEMP 2005). BHPB should consider a minimum 10-year closure WEMP, consistent with the AEMP and other monitoring.	 WLWB Aug 14, 2007 - Comment outside the Board's jurisdiction. BHPB. See Tracking # 252 	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item
256	ENR-27 (July 27/07)	Section 6.3.3	Wildlife	With regards to impact on caribou, BHPB does not take into account potential hunting activity occurring along the roads that will be left due to increased accessibility. The impact may be negligible, but should still be addressed within the ICRP.	BHPB will review and discuss at the Section 3 review, under Buildings and Infrastructure.	No Revision Proposed.	()	(,F.L
257	IEMA-65 (July 27/07)	Appendix C Table 23	Wildlife	Wildlife 1. The Agency has not taken a position on the need for or number of wildlife ramps related to waste rock piles. We are of the view that BHPB needs to conduct more effective community consultation to properly obtain consensus on desired future land uses and preferences for the waste rock piles. There are also key pieces of outstanding research required to help determine whether wildlife should be attracted to or deterred from using the waste rock piles. The metal uptake risk assessment for revegetated areas is needed, along with observations on possible wildlife use of these areas. Properly designed monitoring studies using the temporary closure of the Misery waste rock piles would be a good start to examine wildlife use. BHPB proposes building numerous wildlife access ramps on the 50 m high WRSAs "for safe caribou passage and travel" and "to allow wildlife access and exit from the piles", assuming caribou will want to migrate across these unvegetated areas. "The locations and design area to be defined based on consultation with local communities and their understanding of caribou migration pathways" (Volume 1, pg 176). The company also proposes further research to "determine location, number, dimensions and slope of access ramps" (pg 192). Does BHPB have evidence that caribou will cross these piles on migration or use them at other times of the year (could suitable evidence be gathered from Misery while this operation is in temporary closure)? Will use of these piles be greatest during migration (presumably spring/northern migration), or during the post-calving and summer seasons? Is it better for the caribou to discourage use of these piles by not building access ramps; i.e. is the objective the wrong one to propose? Will there be an increased risk of injury to caribou from use of these piles? These piles should form habitat for summer insect relief, but will they also form areas of higher predation and risk of injury. BHPB should address these questions.	The IEMA raises some important questions regards the use of WRSA by wildlife. Consultation with communities on the reclamation and closure of the WRSA during the ICRP development can be referenced in Appendix B. This consultation will continue with future updates of the ICRP. For example communities will be involved with the design and location of wildlife access ramps (Section 3.2.4).	Appendix F Table 45, WRSA Research Summary Table, Wildlife 1 will be reviewed to ensure that the reviewer's questions/comments have been considered in the research.		
258	INAC-11	Section 3.3	General	Comment carried forward from Section 1. (INAC-20) There is no cross-reference in Section 3.3 to the mine plan. Merging of the mine plan and closure plan would yield the lowest practical level of closure activities, for example by reducing the magnitude of the reclamation liability by disposing of tailings in one or more of the open pits (reducing the land area inundated by tailings and subsequent creation of a boulder field cover). Further to this point is that some post-closure options may be rendered 'impracticable' because of inadequate consideration of the closure implications during the mine planning stage. One such example is the burial of	 WLWB August 11/07: Further discussion on closure options and the relationship with the LOM Plan will take place during the review of Sections 2-4. BHPB. The mine plan, merged with the progressive reclamation schedule is provided in Volume 1, Figure 2. The development of a security release agreement between BHPB and the regulators that would provide for progressive release of security concurrent with progressive reclamation and reduction of liabilities would facilitate more expedient and effective progressive reclamation. 	For efficiency, and to reduce repetition, Appendix C will include a reference to Figure 2 in Vol. 1.		
				overburden in the waste rock piles, thus precluding it	In Section 6.1.6 BHPB discusses the option for			

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (ves or no)	Action Item (if applicable
				use in waste dump reclamation.	processed kimberlite backfill of open pits. Again, this remains a favorable option for closure by BHPB, should a pit become available, when the research indicates a feasible method for infill, and when water quality modeling indicates that the water discharge criteria will not be exceeded at the pit lakes discharge. Until that time BHPB has proposed to flood the pits by drawing water from source lakes. BHPB incorporates design for closure into the mine operations. Examples of this are found in the current approved Waste Water and Processed Kimberlite Management Plan, and in the Waste Rock and Ore Storage Management Plan (eg. Toe berms to encourage permafrost growth). In addition BHPB ensures that reclamation planning and long range mine planning are integrated to ensure that design for closure and progressive reclamation are part of the Life of Mine Plan. Lake sediments/glacial till from open pits will be salvaged and stored, where practical, for future reclamation use. The use of lake sediments/glacial till as a reclamation material will be determined through research studies.			
259	INAC-14	Appendix C Section 3.4 Chemical Stability	General	Comment carried forward from Section 1. (INAC-25) Suggest clearer statement in 2 nd para. "Mine closure cannot be successful if physical stability is not achieved."	 WLWB August 11/07: Further discussion will take place during the review of Sections 2-4. BHPB - Physical reclamation success is measured by closure criteria which are outlined in Tables 21-26 (most importantly under Land). 	No Revision Proposed		
260	NSMA-5	Section 6.1.2.7	General	Issue/Concern closure plan should state what is planned during temporary closures. Rationale/Explanation reference is made to license requirements and conditions but does not state what they are, or what environmental monitoring is taking place. Also does not refer to section 7 Proposal/Solution should reference section 7	Water license requirements for monitoring and reporting are provided in the two Class A Water Licenses for EKATI (MV2003L2-0013 and MV2001L2-0008). These requirements continue through temporary suspension of operations (see first bullet in Section 7.1).	Section 6.1.2.7 will include a reference to Section 7 - Temporary Closure Measure.		
261	IEMA-4	Appendix C	General Closure Objectives and Criteria	Comment carried forward from Section 1. (IEMA-10) More explicit matters relating to ecological stability should be included, to reflect VEC and a final self- sustaining ecosystem at site.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
262	IEMA-3	Appendix C	General Closure Objectives and Criteria	Comment carried forward from Section 1. (IEMA-5) Need for consistently detailed and measurable criteria - the overwhelming majority of the criteria identified in the Closure Objectives and Criteria tables are not specific enough or measurable.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
263	IEMA-11	Appendix C	General Closure Objectives and Criteria	Comment carried forward from Section 1. (IEMA-25) Pg 116. This section should spell out how TK research will contribute towards better closure and development of objectives and criteria. Details on this should also be found in Tables 21-26.	BHPB agrees that Appendix C, Section 3.3 Sustainability and TK should have more discussion on how TK will contribute towards closure development. However Tables 21- 26 outline the specific objectives and criteria, and are not intended for general discussion on the contributions from research.	Appendix C, Section 3.3 Sustainability and TK will be updated to include discussion on how TK will contribute towards closure development and the objectives and criteria.		
264	INAC-1	Appendix C	General Closure Objectives and	Comment carried forward from Section 1. (INAC-1) INAC requests a greater level of detail than is presented on closure objectives as stated in BHPB	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C.	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
			Criteria	letter October 13, 2006, and/or details pertaining to information required to develop the closure criteria at this stage. These issues have not been addressed in the proposed ICRP.	Open Pits, Underground Mines and WRSAs.			
265	INAC-8	Appendix C	General Closure Objectives and Criteria	Comment carried forward from Section 1. (INAC-12) Pg 31. The closure objectives listed in Section 2.1 are vague and ill defined. Much greater detail is required before effective comments can be made.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
266	INAC-15	Appendix C	General Closure Objectives and Criteria	Comment carried forward from Section 1. (INAC-27) Section 3.4. Pg 114. Tables 21 to 26. There is no mention of the NWT Mine Reclamation Policy or the NWT Mine Closure Guidelines.	The NWT Mine Reclamation Guidelines were used as background information when developing the Closure Objectives and Criteria for Open Pits, Underground and WRSAs. The Mine Site Reclamation Guidelines for the NWT, 2006 have been listed in Section 2.2.	The Mine Site Reclamation Policy for the NWT was omitted from the Section 2.2 list of referenced documents, but will be included in the update prior to final ICRP submittal to the WLWB.		
267	IEMA-7	Section 3.0	General Closure Objectives and Criteria	Comment carried forward from Section 1. (IEMA-14) Pg 40. ICRP states that the criteria will provide the ability to measure the actual performance of closure activities but the text does not meet this standard of how the ICRP should be evaluated.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
268	IEMA-10	Appendix C	General Closure Objectives and Criteria	Comment carried forward from Section 1. (IEMA-24) Pg 112-113. Definitions of closure objectives and criteria are favorable, but not applied to the tables.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
269	INAC-12	Appendix C	General Closure Objectives and Criteria	<i>Comment carried forward from Section 1. (INAC-23)</i> None of the closure goal, objectives and criteria make any reference to the time period for meeting the goals and objectives.	Revised Closure Objectives and Criteria Tables have been provided to the Working Group for Appendix C. Open Pits, Underground Mines and WRSAs.	No Revision Proposed		
					when closure objectives and criteria have been met. Please refer to Appendix G, Section 7.2, last bullet.			
270	NSMA-13	Appendix C Table 21	General Reclamation	Land 4. Issue/Concern the percentage of cover and type of vegetation should resemble baseline conditions. Rationale/Explanation criteria need to be measurable and have a goal - x% species y, Z% species S, depending on habitat units that need to be replaced - high value habitat first. Proposal/Solution aim for the percentages which were (hopefully) described during baseline studies.	The measurable criteria for vegetation cover has been proposed as percentage cover, and the percentage value will be determined through ongoing research. The reclamation goal has been outlined in the approved ICRP Terms of Reference with a subsequent update - See WLWB letter June 15, 2007. Full restoration to baseline conditions will not be possible. It may take many years before full vegetation cover is achieved for most sites, and there may be no comparable tundra areas for comparison of reclamation progression and completion (eg roads) for some sites. Also, the end goal (type of climax community) for vegetation on reclaimed sites is not known. In the absence of this information the indication that the site is stable and vegetation cover is able to sustain disturbance may be the best measure for closure objectives.	No Revision Proposed		
271	INAC-43 (July 27/07)	Appendix C Table 21	General Reclamation	Land 5. % cover of revegetation on disturbed sites/riparian areas – is this % to be determined as part of the research?	Please refer to Appendix F, Table 43 - Open Pits Research Summary, Land 2 (Methodology). Reclamation Research will help define the appropriate % cover for sites where vegetation is used for stabilization.	No Revision Proposed		
272	ENR-13 (July 27/07)	Section 6.3.2.6	General Reclamation	"Small quantities of sewage sludge generated during the flushing of the sewage treatment tanks had been periodically disposed of in a stockpile to bolster the nutrient status of the topsoil". Is BHPB considering using this type of sewage treatment in future reclamation efforts? If so, what quantities would be applied if treatment is applied 'periodically'?	BHPB is not considering the use of treated sewage sludge as an amendment material since the volumes produced are not substantial enough to have any increased benefit.	No Revision Proposed.		
273	INAC-25	Appendix C	General	It is clear that BHPB has made great efforts to revise	BHP Billiton agrees with INAC that clear linkages should	BHP Billiton will review Appendix D Table		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
	(July 27/07)		Reclamation Research	the closure criteria presented in the Appendix C and INAC-WRD feels that it is possible that some of the proposed measurement criteria can still be improved to ensure that they are indeed measurable, adequate and consistent with the intended closure goal, see comments on Appendix C below. It is understood that reclamation research is ongoing and that additional research may be identified over time; however, clear linkages as to how and when the research will be brought into the ICRP and when the research and/or modeling will occur are needed.	be identified between the timing of progressive reclamation activities and associated research needs. These linkages should be provided through the use of a schedule that shows the proposed activity and the timing of research which answers how the reclamation work will be completed. Appendix D Table 27 currently has a Closure Planning and Reclamation Schedule. This schedule outlines the stages of closure planning for each of major mine components.	27and update to ensure that linkages between the research identified in Appendix F have been linked to the reclamation schedule.		
274	IEMA-14 (July 27/07)	General	General Reclamation Research	Closure criteria require a greater degree of specificity, where possible, or clearer links to reclamation research. Closure criteria need to be clear enough for a third party to conduct a field inspection and to determine whether a mine component's final condition meets the criteria or not.	As discussed in past Working Group meetings the Closure Criteria will remain conceptual until an applicable measurement has been identified as feasible. The linkages to the research and the monitoring have been provided in 4th and 5th respective columns in the Closure Criteria tables. They provide the location of the research and monitoring associated with the objective and criteria.	To assist the reader Sections 6.1.5 (Open Pits), 6.2.5 (Underground Mines) and 6.3.5 (WRSAs) will be reviewed to align with the updated Closure Objectives and Criteria tables. These sections will include discussion on the format of the tables and how the closure objectives/criteria are linked with the research and monitoring.		
275	IEMA-22	Appendix F	General	The "research methods" appear to be vague - more like	See also Tracking # 273	Appendix F Tables 43-45 Methodology		
210	(July 27/07)		Reclamation Research	general objectives than like methods. BHPB may wish to re-title this column and then provide further details on specific methodologies and timelines as part of the overall Reclamation Research Plan		Column, will be reviewed to ensure that Research Methods provide specific methodologies.		
276	IEMA-21 (July 27/07)	Appendix F	General Reclamation Research	The research tables lack virtually all reference to when the research needs to be done. It is not clear how this research will feed into the next version of the ICRP. The WLWB, and all interested parties, need to be reassured that the research will be done in time to make such ICRP revisions as are appropriate. The Agency recommends that BHPB be required to add timelines to the reclamation research plan and discuss how the research will be coordinated with future revisions to the ICRP.	See Tracking # 273	No Revision Proposed.		
277	INAC-10	Appendix C Section 3.3	General Formatting	Comment carried forward from Section 1. (INAC-19) Section 3.3. Pg 113. There is no mention of factors such as duration of time to achieve self-sustaining ecosystems or the need to ensure that physical and chemical stability will continue to be met in the long- term.		Appendix C will be updated to include the Closure Objectives and Criteria Tables. To avoid unnecessary repetition and potential for confusion Volume 1, Section 3 will introduce the Reclamation Goal, Operating Principles, Closure Objectives/Criteria Framework and provide the definitions and summary of the reclamation goal, principles, objectives and criteria. There will also be a discussion on linkages to the Research and Monitoring. Part of this discussion will cover the purpose of criteria and monitoring in measuring stability and progress towards self- sustaining ecosystems. Figure 3 of Section 3 will be updated to include the Framework agreed upon at the Section 1 ICRP review (See Figure 3 attached with this Table).		
278	ENR-1	Appendix C	General Formatting	Comment carried forward from Section 1. (ENR-7) Section 3.1. Terms and Definitions. By including Appendix C information in Volume 1 in Section 3.1 it	WLWB Aug 11, 2007: Further revision may need to be made once the reviews on Section 2-4 are completed.BHPB agrees that this would provide an opportunity for	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
				assists the reviewer in 2 ways. Firstly it will provide supporting information to the definitions for reclamation goals, closure objectives and closure criteria provided in this section. Secondly, it will provide the reader with an all-inclusive picture of the final closure goals prior to reading subsequent sections, allowing for a more comprehensive examination of closure options.	overview of the closure objectives/criteria, research and monitoring structure. See also Tracking # 277.			
279	IEMA-6	Section 3.0	General Reclamation	Comment carried forward from Section 1. (IEMA-13) Pg 46. Some lessons cited do not appear directly relevant to EKATI.	Table 9 provides a preliminary outline of lessons learned. Table 9 will be updated as the mine develops through operations and progressive reclamation, and as more lessons are identified from other northern sites and from other BHPB assets.	No Revision Proposed.		
280	INAC-24 (July 27/07)	Appendix C	General Formatting	The way the ICRP is presently prepared, it is difficult to follow a specific mine component from the objectives through to the proposed monitoring for that component (i.e. from text, to tables, to the various appendices). It is understood that it is difficult to avoid having the information presented in different sections but the potential exist to have a single overview table for each mine component that identifies the closure objectives and option(s) and monitoring associated with each objective and option. INAC-WRD understands that IEMA has provided an example of such a table and can provide more details in this regard. This wouldn't necessarily replace all the tables currently presented in the ICRP, unless all the details can be included in the overview table.	Please refer to BHP Billiton's letter to the WLWB Sept 5, 2007.	No Revision Proposed		
281	IEMA-12 (July 27/07)	General	General Formatting	It is difficult to follow how any one component will be addressed as the information is spread over four separate tables, the text in Volume 1 (Sections 6.1-6.3) and parts of Appendix E. It might be more effective to have one table for each of the mine components that contains the closure objectives and criteria, options, research (based on the need for detailed criteria and risk assessment), monitoring (see attached Table 1 for a demonstration of how this might be done). It would also be helpful if BHPB updated the text in Volume 1 based on the outcomes from the Working Group and the WLWB.	See WLWB Sept 5/07 Email. To be discussed at September 28 Working Group meeting. Please review The ICRP Working Group Terms of Reference Section X. and the WLWB letter August 11/07 for discussion on timing of plan revisions.	No Revision Proposed		
282	DFO-18 (July 27/07)	General	General Formatting	DFO agrees with the IEMA that it would be more effective to have a separate table containing closure objectives and criteria, options, research, and monitoring for each mine component.	See WLWB Sept 5/07 Email. To be discussed at September 28 Working Group meeting.	No Revision Proposed		
283	JW-1 (Aug 14/07)	General	General Formatting	General comment on Figures: Figures need to be more uniformly presented (and have accompanying contour maps that show drainages, watershed boundaries, facilities, access roads, etc.). Reclamation aspects are not always clear (i.e., drainage features, ground conditions) from poor resolution black and white photos (Figures 24-29). In some cases, figure coverage is either too small or too large of a scale (or oblique) to reasonably depict aspects discussed in text (e.g., Figure 12). Figures 16-20 are excellent oblique photos – but without scale, are not readily compared to pre- disturbance conditions.		 BHPB will review the document for opportunities to provide uniformity in figures and tables, including scale. Contour maps can be provided for the site, particularly when discussing open pits, WRSA and the LLCF. These figures will include watershed boundaries and main drainages. A general outline of facilities and access roads have been provided in Figure 5, and discussed in more detail in Section 6.6. No black and white photos have been used in the document, and Figure 29 is a schedule - 		

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234 J0-41 (1477) General (1477)							See also Tracking # 252.		
Local Ward Contraining Security is used point and devices continues Link is used in the security is a stream of the second model 285 RM-C20 Varian Appendix 0	284	JW-41	General	General	General Comment with respect to Figures: figures		Figures will be provided that include drainage		
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2/80/2 FMA-23 Appendix C		(July		Management	components but how will monitoring during the closure	be necessary at closure. BHP Billiton has been		1	
Lem Lem Appendix C		27/07)			activity be used to determine if adaptive management or contingency options are required? INAC-WRD potes	developing an Adaptive Management Plan as per the MV2003L2-0013 Water License requirement. This plan			
Lenk Lenk Loss and the set of the procession of the set of the set of the set of the procession of the set of t					that Response Thresholds are provided in Tables 49-51	will be submitted to the WLWB in December 2007.			
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288 IEMA-3 Appendix C Adgebre Management There should be some recognition of the next in the course monitoring. Reference to solver monitoring. Reference to solver monitoring. Reference to solver monitoring. Reference to solver monitoring is to solve monitoring. Reference to solver monitoring is to solver monitoring is to solver monitoring. Reference to solver monitoring is to solver monitoring is to solver monitoring is to solver monitoring in the solver monitoring is to solver monitoring in the solver monitoring is to solver monitoring is the solvere monitoring is the solvere solver monitoring is the					options and contingencies.			·	
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287 IEMA-23 (July 27/07) Appendix G Appendix G (July 27/07) Appendix G Appendix G (July 27/07) Appendix G Adaptive Management Man						sites, the concentrations at the impacted sites are		1	
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288 JW-70 (Aug 14/07) Section 6.4.1.2 Table 52 PKCA Reclamation What are the units of the average discharge (shown as mill ³ /yr)? This question refers to Processed Kimberlite Containment Areas (PKCA) and will be covered in Section 3 review. No Revision Proposed. 289 ENR-26 (July 27/07) Section 6.3.2.9 PKCA Reclamation BHPB proposes a combination rock and vegetation or the LLCF. Grasses provide forage for many herbivores and may attract wildlife to the site WLWB Aug 14, 2007 - Please refer to an email dated June 23, 2007 from Board staff to Working Group members. Attached to this email are revised tables. No Revision Proposed at this time.					Agency urges BHPB to set triggers or thresholds where	parameters.		1	
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289 ENR-26 (July 27/07) Section (July 27/07) PKCA 6.3.2.9 BHPB proposes a combination rock and vegetation cover of the LLCF rather than an engineered cap. Currently, revegetation trials demonstrate that many native grasses will colonize and persist in the fine grained tailings of the LLCF. Grasses provide forage for many herbivores and may attract wildlife to the site WLWB Aug 14, 2007 - Please refer to an email dated June 23, 2007 from Board staff to Working Group members. Attached to this email are revised tables. No Revision Proposed at this time.	288	Jvv-70 (Aug 14/07)	Section 6.4.1.2 Table 52	Reclamation	what are the units of the average discharge (shown as mill ³ /yr)?	Containment Areas (PKCA) and will be covered in Section 3 review.	NO REVISION Proposed.		
27/07) (July 27/07) (Currently, revegetation trials demonstrate that many native grasses will colonize and persist in the fine grained tailings of the LLCF. Grasses provide forage for many herbivores and may attract wildlife to the site which includes the PKCA.	289	ENR-26	Section	PKCA	BHPB proposes a combination rock and vegetation	WLWB Aug 14, 2007 - Please refer to an email dated	No Revision Proposed at this time.		
native grasses will colonize and persist in the fine grained tailings of the LLCF. Grasses provide forage for many herbivores and may attract wildlife to the siteBHPB. This comment relates to Section 3 Review, which includes the PKCA.		(July 27/07)	0.3.2.9	Reclamation	Currently, revegetation trials demonstrate that many	members. Attached to this email are revised tables.			
grained tailings of the LLCF. Grasses provide forage for many herbivores and may attract wildlife to the site which includes the PKCA.		,			native grasses will colonize and persist in the fine				
					for many herbivores and may attract wildlife to the site	which includes the PKCA.			

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable
				potentially exposing them to elevated metals and other constituents present in the processed kimberlite. While the bioaccumulation of these constituents may not be an issue due to low exposure times, attracting wildlife to a site that has many hazards (i.e. waste rock piles, pit lakes, etc) is not desirable. ENR staff advocate that the site post-closure should provide neutral landscape; neither attracting nor deterring wildlife and designed to be as hazard-free as possible. In this regard, ENR staff request that BHPB continue research in this area specifically focusing on: A comparison between a rock/vegetative cover vs, and engineered cap in the following areas: - Comparison of the risk associated with exposure to metals and other constituents of the processed kimberlite by herbivores as opposed to no exposure due to capping of LLCF. (This should consider those elements omitted from the Wildlife LLCF Risk Assessment March 2004 such as: barium, selenium and magnesium). - Those plant species least palatable to herbivores and those least likely bioaccumulate metals and other elements that may be toxic or in toxic quantities. - Risk of attraction of wildlife and subsequent exposure to onsite hazards post-closure. - Timeframe over which stability and security of containment is achieved and how well it withstands over time (i.e vegetation takes time to establish and therefore containment is not immediate). - Dust generation. Table 43 needs to be revised based on decisions made during review of Section 1.				
290	JW-11 (Aug 14/07)	Section 6.5	Dams, Dykes and Channels Reclamation	Assume comments on Panda diversion channel and issues associated with this channel will be addressed as part of working group Section 3.	JW is correct	No Revision Proposed		
291	INAC-64 (July 27/07)	Section 6.5	Dams, Dykes and Channels Reclamation	The Panda Diversion Channel is to remain after closure. A weir is proposed to allow for flow through the pits in the event of snow or ice blockage in the channel. This concept seems reasonable, however, it does not preclude a substantial slope stabilization program in the channel. A rock or soil slope failure in the mid-point of the channel could lead to pooling of water along a significant length of the channel. Such as permanent pool could cause further thawing of the ice-rich lacustrine soils along the upper reaches of the channel.	Please refer to Volume 1, Sections 6.5.2.2 and 6.5.4.2 for discussion on the long term use of the Panda Diversion Channel	No Revision Proposed.		
292	EC-3	Section 6.5	Dams, Dykes and Channels Reclamation	Comment carried forward from Section 1. (EC-4) Similarly, diversion structure closure will be subject to validation of the proposed configuration, and BHPB should have a contingency plan in the event the channels do not perform as anticipated without ongoing maintenance. We anticipate there will be considerable discussion of these aspects on a component-by- component basis.	 WLWB April 13, 2007 – As this comment relates it will be more fully discussed at future Working Group meetings. However, time permitting; some initial discussions may take place during the meeting on May 3. BHPB should begin considering this comment and engage in discussions with Environment Canada. WLWB Aug 11, 2007 - Comment carried forward to reviews on Sections 2-4. BHPB - this comment will be responded to as part of the Dams, Dykes and Channels Section 3 Review. 	No Revision Proposed		

Tracking	Comment	ICRP	Торіс	Review Comment	BHP Billiton Response	BHP Billiton Proposed Revision		
Number	ID	Section					Resolved? (yes or no)	Action Item (if applicable_
293	INAC-35 (July 27/07)	Section 6.6	Buildings and Infrastructure Reclamation	INAC-WRD would like BHPB to use all existing roadways and right-of-ways for the pipeline used to pump-fill the pits, where possible, to limit the amount of new built-up areas.	BHPB agrees with INAC - where possible, all existing roadways and right-of-ways for the pipeline will be used. Pipeline reclamation is covered under Section 6.6 Buildings and Infrastructure.	No Revision Proposed		
294	IEMA-56 (July 27/07)	Appendix C Table 26	Buildings and Infrastructure Reclamation	It is not clear whether BHPB has considered any separate or different closure criteria or actions for ore stockpile areas that may require different treatment.	Reclamation of Ore Storage Pads is covered in Section 6.6. Buildings and Infrastructure.	No Revision Proposed		
295	IEMA-29 (July 27/07)	Appendix C Table 21	Buildings and Infrastructure Reclamation	Land 4 & 5. BHPB has proposed reclaiming the pit refilling pipeline roads the same way as for the minesite roads, which implies removing berms and culverts, but nothing else. This should be clarified. To reduce the footprint of the mine, BHPB should consider complete removal and reclamation of these pump roads or complete avoidance of footprints by using existing road beds for the pipelines.	Reclamation of pipelines is covered in Section 6.6.4.5 (Buildings and Infrastructure), and reclamation of roads is covered under Section 6.6.4.9. Roads will not be removed at the end of the mine operations or after monitoring. Even within a couple of years after roads have been constructed permafrost has moved into road beds. Removal of this cover unnecessarily exposes ice and can cause thermokarst erosion, and impacts to downstream water quality.	Section 6.6.4.9 will be updated to include pipeline roads.		