

**Comments from the Forestry Department
On the Environmental Impact Assessment governing
the Proposed Mining Operation in SML 173**

1. Executive Summary

- a. The statement in 1.1 that “The project proposes to exploit bauxite reserves in Special Mining Lease 173 (SML 173) Area, which is in proximity to the declared Cockpit Country Protected Area (CCPA)” is inaccurate. The only declared area in close proximity to SML 173 is the Cockpit Country Forest Reserve. The area proposed to be protected as the Cockpit Country pursuant to the Prime Minister’s announcement in November of 2017 has not yet been given any specific legal designation, including that of Protected Area. There is therefore no **declared** area known as the Cockpit Country Protected Area. This will be done as noted by the MHPM Andrew Holness after the boundary has been verified and the legislation developed under which the declaration will take place.
- b. The EIA speaks to only utilising / impacting 15% of the land contained in SML 173, which it says will take place in areas previously impacted by agricultural activity and residential units. There is no mention of aboveground natural resources in the blurb “The mining activities proposed for 15% of the total area of SML 173, represents a temporary change in land use from agriculture and a few residential structures to bauxite extraction”. This is not supported in the body of the EIA so the wording in this very specific reference needs to be adjusted in order to ensure the accuracy throughout the document.
- c. Reference is made to SML 173 containing important natural resources which are defined as groundwater and biodiversity. No mention at any point in time is made specifically of the forest cover in the SML which contains disturbed broadleaf and secondary forests. This overt omission followed up by wording “historical heritage resources, human settlements and agricultural activities ...” suggests that there are no forested areas in the boundaries of the SML which is inaccurate. This should be amended to reflect the fact that forest cover exists in the SML that will be impacted.
- d. The wording “The boundary was declared by the Most Honourable Andrew Holness, Prime Minister in Parliament on November 21, 2017 (See Appendix IV). The CCPA consists of three (3) distinct zones; a core, an outer and a transition (buffer) zone.” Is inaccurate for the following reasons
 - i. The MHPM did not **declare** a boundary in November of 2017. The proposed area for declaration was announced in Parliament, but the declaration process will be undertaken once the ground truthing process to verify the boundary is completed.
 - ii. At no point was there a distinction made of three separate areas comprised of a core, outer and transition ‘buffer’. This should be removed in its entirety.
- e. The broad-brush references to the existing or historical land use in SMI 173 borders on disingenuous in some instances due to the omission of information on the natural

- resources which suggests that no loss will be sustained from the mining of the ore. This is in fact not the case and so the necessary balance must be struck in the nomenclature.
- f. **1.4.2.4** glibly refers to “The observation was made that, rehabilitation of mined out areas results in the restoration of the flora and fauna and supports pre-mining communities”. As stated, this can be misleading if not properly contextualized. Purposeful, aggressive and persistent efforts have to be maintained for the restoration of these mined out pits to occur. All if not most of NBJ pits to date have grass as the dominant or climax species. It was also noted that no reference has been provided to ground this statement and so without more it should be excluded or amended, as no mention is made as to whether the restoration takes place as a result of significant manmade intervention or natural regeneration.
 - g. **1.4.5** – The details of this 5-year plan should be shared not only with NEPA but with other relevant Agency so that the necessary due diligence can be carried out to determine whether the operations will be carried out in accordance with the prescribed guidelines. This will also allow for an examination of the status of the operations conducted in the preceding 5-year period, for example, if the rehabilitation measures were satisfactorily executed, i.e. activities are sustainable and warrants the second 5 years.

Though the majority of the forest cover on the hillocks will not be impacted directly by the mining operation, what will be annihilated is the ecological corridors that are the bridges between the hillocks. Floral and or faunal populations will become confined to these hillocks and it is highly probable that the numbers will become reduced and hence vulnerable over time if these corridors are not re-established. Additionally, access to each hillock increases significantly; It is therefore likely to see increase of yam stick harvesting and charcoal production thus leading to forest degradation and eventually deforestation.

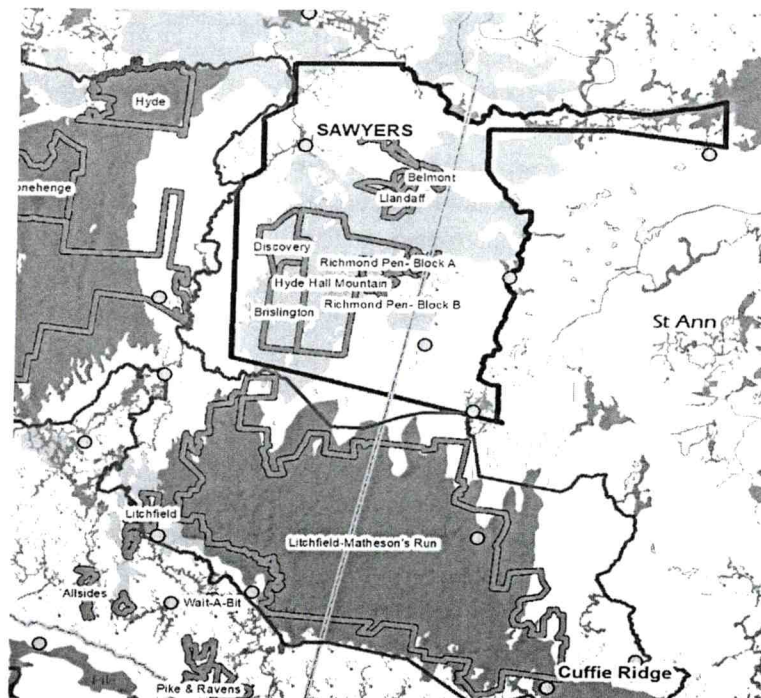
- h. The final statement in the Executive Summary should be reworded to read “As proclaimed by the Most Honourable Prime Minister, NJBP II will no mine within the boundary of the area to be protected as the Cockpit Country”.

2. **Introduction** - **2.1** The ‘s’ was left off the Resources in the NRCA.

3. **Legislation and Regulatory consideration**

- a. **3.2** – take the ‘s’ off legislation in the title.
- b. **3.2.1** – Reword to read “The CCPA is based **in the main** on the geomorphological characteristics of the area as delineated by Parris Lyew-Ayee, Jr in 2005”. This is due to the fact that other considerations were taken into account when the final boundary of the area to be protected as the Cockpit Country was arrived at and extended beyond the area proposed by this individual.

- c. **3.2.3** – the second sentence in the first paragraph should be reworded to read “It designates National Parks, Marine Parks, Protected Areas and regulates the control of pollution as well as the manner in which lands are to be used in protected areas **that are declared under the NRCAA**”. This distinction is required as the NRCAA does not regulate the activities of other types of areas that have been declared under other designations through other legislation, for example, forest reserves and forest management areas under the Forest Act (1996). As indicated in the Protect Areas Systems Master Plan, Jamaica has several types of ‘Protected Areas’, each of which fall under specific legislation, one of which happens to be the NRCAA.
- d. **3.2.4** – This sentence is repeated “This Act has to be considered for the proposed project, ecological assessments will determine if rare or endangered species will be impacted.” remove the second reference. It is also unclear why all of the endangered species is listed in the paragraph, the pertinent ones should be extracted and retained if there is need for emphasis to be made.
- 3.2.5** reword the section to read “This Act provides for the management and conservation of declared Forest Reserves and Forest Management Areas on Crown Lands by the Forestry Department, as well as areas declared on privately-owned lands, if the (Minister) is satisfied that the use if the land should be controlled for the protection of the National Interest.” It regulates activities in these Forest Reserves and Forest Management Areas and authorises the conduct of specific activities.



This Act is relevant to the project, as there are declared Forest Reserves as depicted below in SML 173.” It should be noted that of the 55% of the lands in the SML that Noranda derives through the Commissioner of Lands, a significant component is

comprised of declared Forest Reserves and Forest Management Areas that fall under the portfolio management of the Forestry Department. Though the activities in the 5 -year mining plan do not directly infringe on FMAs / FRs, any activity that is undertaken the proposed mining area that is currently covered with secondary forest or disturbed broad leaf, should be undertaken in accordance with the highest environmental standards and adherence to sustainable environmental practices.

- e. **3.2.8** – it is unclear why the statement “NJBP II intends to abide by all regulations regarding air quality and intends to put in place best management practices.” Is only made in relation to the air quality standards. What of the other legislative requirements under the laws mentioned in this section, is it that there is no commitment to adhering to the tenets of these? If that is not the case, then why make this statement applicable only to this law?
- f. **3.2.22** – This sentence requires rewording “This Act also provides for the right to mine for bauxite producer who is also an associated producer to lodge with the Commissioner of Mines a sum, or give security for the payment of any compensation which may be payable under section 12 of the Mining Act.”
- g. **3.2.25** - This act provides for the establishment of the Capital Development Fund where all sums received as payment of production levy under the Act and all other income from the asses of the Fund shall be paid into the Fund.
- h. **3.3.3** – Economic Growth and Job Creation is not a National Policy.
- i. **3.3.4** – The Protected Areas Systems Master Plan (2013 – 2017) expands this and must be referenced in this section.
- j. **3.3.5** – include ‘plan’ after “... prepared the Protected Areas System Master **Plan** (PASMP), ...”. The section stated that “Almost 19% of the country is classified as having mixed land use (a combination of any of the forest broad classification with that of non-forest) and the remaining 41% of the mainland is classified as non-forest inclusive of bamboo (which in 1998 was considered as contributing to forest cover), crop plantations, quarries, water bodies, infrastructure etc. (State of the Environment Report, 2013).” What makes up the other 40% of the island and why was it not stated?
- k. **3.3.6**
 - i. (pg 28) changed ‘implanted’ to ‘implemented’ in the following sentence “The NFMCP will be implanted in two phases”.
 - ii. The Forest Act of 1937 preceded the 1996 iteration and so the information contained in the paragraph “In 1990 with the support of the United Nations Development Programme (UNDP) the first National Forest Action (NFAP) was developed. Since, the development of the first NFAP, the Forest Division underwent further evolution; and in 1996 with the passage of the Forest Act, the Forestry Department (FD) was created with an emphasis on reforestation, conservation, and greater community participation” is incorrect. Remove that entire section and replace with “The Forestry Department in accordance with the legislative prescription of the Forest Act 1996, developed the National Forest Management and Conservation Plan (2001 – 2010).”

- iii. Unclear why there is a need to reference the fact that the Forestry Department became an Executive Agency in 2010 especially as it relates to the NFMCP. Remove statement.
 - iv. Whether they are “well managed” or not forests make a solid contribution to mitigating the impacts of climate change. The nuance here follows the trend that is a key characteristic of the EIA, in that it seeks to discount the value of the forest resources found in SML 173. The reference to the link between the type of management and the derived climate change related value should be removed as naturally occurring, unmanaged forests make a significant contribution to mitigation and adaptation efforts worldwide.
- l. **3.3.6.1** the reference to the Forest Policy for Jamaica conveniently omits the fact that the Policy specifically states that forest reserves should be used solely for
- Conservation of natural forests and biodiversity;
 - Use for highly regulated eco-tourism and recreational activities; and
 - Scientific research including sustainable management of forest resources.

It specifically restricts extractive activity which is in special cases reserved for the areas designated as Forest Management Areas as outlined in the Policy may be utilized for the following purposes:

- Economic development of forest products on plantations for extraction or timber production;
- Generation of non-timber forest products;
- The preservation of landscape diversity including forests on steep slopes;
- The promotion of agro-forestry;
- Sustainable management of mangrove forests;
- Conservation of soil and water resources;
- Management of urban forests for the use of the public;
- Development of nature tourism and recreational amenities; and
- Extraction on a case by case basis of minerals under strict permit conditions**

It should be noted that the EIA is supposed to be a balanced document and should not be used to promote the interests of any one side. The exclusion of pertinent information suggests that either insufficient research was conducted, or that the information was purposely omitted as it did not support the project. The Forestry prefers to assume it was the former and that the updated EIA will reflect the section of the Forest Policy related to the uses of areas declared as forest reserves.

- m. **3.4.7.1** first sentence, clearly state which convention is being referred to.

4. Description of the Proposed project

- a. **4.1** specifically states that no public roads would be used which essentially means that haul roads will have to be created. The creative use of words in the EIA seeks to suggest

that the impact of the mining activity will result in minimal disturbance to natural resources as the activity is reversible. Table 4-2 states that 250.07 hectares of land will be impacted over the 25 years of the project through the construction of haul roads. Some of that area invariably will include forested areas as the land is not as bereft of tree cover as the EIA attempts to suggest.

It should be noted that the development of a network of roads in the area will increase the levels of accessibility to natural resources found in SML 173 and once created, it is unlikely that the roadways will revert on completion of mining activities to the previous state of vegetation. Efforts to mitigate against the impact of the haul road could include

- Reducing the road width from 38 feet to 30 feet. It is acknowledged that this will be dependent on the size of vehicles traversing the roads;
 - Closing the haul roads immediately after use to reduce the timeframe within which the public has to access the hillocks to harvest yamsticks etc. It is quite likely that community member will suggest that these roads be left open for them to utilize post mining. This should be made clear from the outset that temporary means temporary.;
 - Using the community member to help establish vegetative cover in these areas.
- b. **4.2. Pre-operations** – “Pre-operation activities will also include the removal and relocation of sensitive species such as epiphytes to NJBP II’s existing greenhouses. This will be done in accordance with NEPA’s permit requirements.” Will any other species be moved and if so why specifically highlight the epiphytes?
- c. **Figure 4-3:** Process flowchart for Site Clearance for each orebody – The flow chart in its current configuration seems to be suggesting that stripping operations will begin before the removal and relocation of vegetation? How will this work as the previous impression was that the identification, harvesting and relocation of the species to be conserved would be done before stripping commences.
- d. **4.3.2** – what document / which entity decides what prescription will guide the relocation of sensitive species?
- e. **4.3.3** – The following questions were raised in relation to –
- i. Design approval – Which entity approves this and will interested stakeholders be given an opportunity to comment on the proposed pathways for the haul roads. This is important for the forest cover in the area which could be negatively impacted by the construction of the haul roads.
 - ii. Compaction of fill & Grading and rolling - where will the material for this activity come from and will the compaction be reversible after road use?
 - iii. What are the standards that will be applied in the relocation / removal of the vegetation and stripping and storage of topsoil?
- f. **4.3.4.1** - It should be noted that the areas contained in Table 4-1 could not be defined on the Fig 4.2 and so the information was not of much use.

Table 4-1: Size of areas to be disturbed over the next five years and five year increments thereafter

| Year | 2020 | 2021 | 2022 | 2023 | 2024 | TOTAL (2020 – 2024) | 2025- 2029 | 2030- 2034 | 2035- 2039 | 2040- 2044 | Total |
|------------------------|------|------|-------|-------|-------|---------------------------|---------------|---------------|---------------|---------------|-------|
| Disturbed Area (ha) | 10.2 | 9.94 | 18.89 | 10.75 | 47.47 | 97.24 | 175 | 257 | 274 | 197 | 1,000 |

g. **4.5** – Rehabilitation

- i. Figure 4.6 – refers to the reshaping of the mined put pit to meet the 18% slope standard. This could result in the loss of forest cover from hillocks adjoining the mined-out ore bodies, where backfilling is employed as a means of reducing the grade of the slope. Was this considered as part of the area to be disturbed as mention in tables 4.1 and 4.2?
 - ii. In none of the possible end uses given is there any reference to putting the land back under forest cover. The six listed uses though beneficial to the community, which as was noted exists in minimal numbers within SML 173, make little or no valuable contribution to the restoration of the environment. Who will be responsible for the development of the ecological / silvicultural guidelines of what goes where and the maintenance of it? Grass should not be considered as a pioneer.
 - iii. Usually the 18” of topsoil that is removed in the beginning is not adequate to restore, cover and reshape the mined out pit sufficiently to sustain growth. In instances where additional topsoil is needed, where will this come from and does this have further implications for disturbance in other areas?
- h. **4.7** – (pg 4-25) – the Government of Jamaica has not declared the Cockpit Country yet. It announced in 2017 that a boundary that is to be used to identify the area to be protected was agreed to and that the boundary was to be veirified by the Forestry Department.
- i. **4.7.2** – Over 20 socio-economic and educational initiatives were highlighted. However, most of them are beyond the periphery of the mined communities and often not accessible by the individuals directly impacted. Is there any data that demonstrates the direct benefits / involvement of community personnel in these socio- economic initiatives?
- j. **Figures 4.7 – 4.8** - It is an undisputable fact that mining changes the land use often times irreversibly and over the long term, more notably from forest/tree crop cover to other less ecologically sustainable uses. The pictures shown in the previously-mentioned figures demonstrates that even after rehabilitation – beyond infrastructure and grassed areas, the top soil is hardly efficient to sustain any meaningful growth.

In cases where deforestation is unavoidable, significant consideration should be given to reducing the acreage disturbed and the amount of topsoil returned should be adequate to facilitate accelerated ecological succession, which will lend itself to enhancing and improving the return of ecosystem functions.

The fragmentation within the various habitats is quite evident by the mosaic hillocks with grasslands interspersed and does not support the idea of successful vegetative restoration and therefore should not be hailed as successes in the rehabilitation process. The Forestry Department proposes a different approach to restoring vegetative cover beyond mere grass land. This approach has been successfully demonstrated in Mocho, Clarendon. The investment – capital and labour may cost more than seeding with grass, but over the medium to long term produces the best results with regards to the return of trees and the associated biodiversity.

5. Description of the Environment

- a. **5.1.5** – The sink holes which are nature’s preferred drainage (hydrological) pathways in limestone areas, are disturbed and or destroyed by the open mining practices consistent with NBJ operations. The impact of this on percolation and recharge of the aquifer is still undefined. Considering this – all attempts should be complete the georeferencing of these sinks with the intent to conserve/retain/protect them from mining operations and the associated adverse “secondary” impacts. The conservation of caves and sinkholes is supported in the document pg 5-13. However, this should be intentionally done and not dealt with by default.
- b. **5.1.9** – reword to “. The low traffic flow in the SML suggests that mobile sources of pollutant are not significantly impacting air quality. The low population of the area also indicate that waste incineration will not be significant.”
- c. The section related to the environment should be moved to 5.2.
- d. The legend in fig 5-42 refers to the Disturbed Broadleaf forest as secondary forest. This is incorrect.
- e. **5.5.7.2.1** – The reference to Fig 5-207 which suggests that the Parris Lyew-Ayee Jr boundary is synonymous with that announced in 2017 by the MHPM is inaccurate as it does not include other areas that form part of the area to be declared as the Cockpit Country, namely, the Litchfield Mathieson Run Forest reserve to the east and the Ffyfe and Rankin forest reserve to the west. paragraph It should also be noted that the official boundary that will be declared is subject to the completion of FD’s ground truthing exercise and the assignment of a legal designation.
- f. **5.5.7.3** - Fig 5-209 mentions land use information and references of forest types which have not been used previously in the EIA for example “evergreen / semi deciduous forest”. What are these and how do they relate to the Closed Broadleaf Forest and Disturbed Broadleaf Forest mentioned earlier in that section? This section

refers to these forest types several times as well as sun-montane. It is recommended that consistency of terms be maintained throughout the document to allow for greater understanding and ease of reference.

- g. 5.5.7.3.3. the information on the declared areas managed by the Agency is inaccurate as several forest reserves and forest management areas lie in the SML 173 contrary to the 4% postulated by the EIA.
- h. 5.5.7.5 - Table 5-35: Type and Nature of Potential Land-Use Conflicts does not mention the impact that rehabilitation and / or reclamation work will have on forest resources for example during the grading of the slopes in the mined out pit could result in trees being lost when land is used to backfill the pits.

6. Mitigation –

The following statement was observed in the document” “Although the SML 173 Area is located outside the newly established CCPA boundary, its proximity to the boundary and the existence of the forest reserve in the Sawyers/Linton Spring area means the activities of the proposed mining project has the potential to conflict with conservation strategies concerning renewable resources in the area. “

The Mitigation measures proposed in some instances are very nebulous, in particular, due to the close proximity of SML 173 to designated forest reserves, mitigating measures should be proposed to ensure at the very least that there is little to no resulting disturbance from humans on project site or damage from project activities. The EIA should address how the operators will ensure that potential conflicts with conservation strategies will be reduced.

7. Impacts

- a. 7.2 Suggests that there will be no impact from increased crime. The Agency disagrees with this statement as based on the increased and easier access to the forest resources contained in the areas managed by the Forestry Department in SML 173, it is anticipated that increased pilferage will occur. This was not noted anywhere in the document and it is recommended, should be included along with proposed mitigation measures to lessen the impact of the increased access due to the construction of the haul roads.
- b. 8.1 The statement is made that “Loss of vegetation (easily replaced once operations cease),” is nonchalantly made. Where the intention is to ensure that reclamation activities go beyond mere seeding of grass, a much more environmentally sustainable approach must be adopted from the pre-mining operations planning, throughout the process until the mining operation is closed. The general tenor of the EIA is to make sweeping statements that unless adequately policed will not result in a favourable result for the environment.
- c. 8.1.5 – Where are the details to support the following? *“This will take place through an increase in the size of the grasslands plus the planting of several trees in the vicinity and a major tree planting programme of 200,000 trees.”* It is also concerning that the

broad-brush seemingly cookie cutter approach to the relocation of natural resources does not suggest a significant effort at mitigating the negative impact of the project activity on the natural resources as supported by statements such as “*Furthermore, Noranda will establish greenhouses to store vegetation, epiphytes removed from the area for replanting later ...*”.

8. General Comments

- Under the legislative framework, several Acts are mentioned, some not stating their relevance to the project and it is not wise to assume that it is self-explanatory. For example, the mention of the Road Traffic Act and the Parochial Road Act among others. Based on the nature of the project, inferences can be drawn from the sections of the Act outlined as to why these may be relevant (Perhaps road preparation / construction and haulage considerations for the purposes of executing the project). However, relevance should be explicitly stated.
- A similar sentiment applies to what is mentioned of the National Forest Management and Conservation Plan (2016 – 2026) and the Forest Policy for Jamaica (2017). Rather than simply extracting sections from the various documents, emphasis should be placed on outlining how the project activities will be streamlined to the objectives of the Policy and Plan as best as possible and to the extent of mitigating any unnecessary loss or damage to forested areas and more specifically adjoining forest reserves.
- Reference is made to the Jamaican Environmental Trust in the document. Correction to be made to state the Jamaica Environment Trust.
- The loss of forest cover associated with the actual mining of the ore it is suggested will be minimal, but this is not the case for the construction of haul roads. Insufficient information / detail was provided in the EIA to allow for an informed response to be provided save and except that where wording as contained in section 7.0 “*The major impact may result from changes in land use. The major land use change may take place through the construction of access haul roads. Approximately 21.07 hectares could be impacted in the first five (5) years. The potential change in topography from the construction of haul roads and mining is irreversible.*” must be acknowledged and addressed very early on in the planning processes.

It is also stated in **8.3.1** that Backfilling which “... entails the reshaping of the mined area using bulldozers. The general approach is to **cut material from higher areas to fill depressions and to reduce steep gradients**. The objective is to produce gentle undulating slopes capable of sustaining vegetation without the risk of erosion.”. What this equates to is removal of forest cover from the densely forested hillocks around the mined-put pit. No information is provided in the EIA in relation to the extent to which this is done save and except at the end of the document this statement is made.