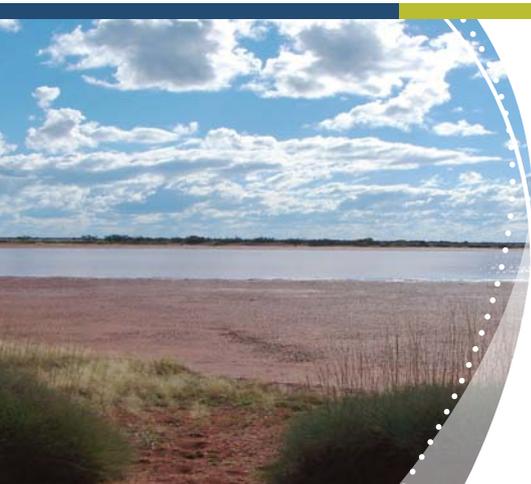




Report and recommendations of the Environmental Protection Authority



Marillana Iron Ore Project - inquiry under section 46 of the *Environmental Protection Act 1986* to amend Ministerial Statement 855

Brockman Mining Australia Pty Ltd

Report 1589

December 2016

ENVIRONMENTAL PROTECTION AUTHORITY
REPORT AND RECOMMENDATIONS TO THE MINISTER FOR
ENVIRONMENT

**MARILLANA IRON ORE PROJECT - INQUIRY UNDER SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986 TO AMEND MINISTERIAL
STATEMENT 855**

The Minister for Environment has requested that the Environmental Protection Authority (EPA) inquire into and report on the matter of changing the implementation conditions relating to the Marillana Iron Ore Project, in order to extend the 'Time Limit of Authorisation' for substantial commencement (condition 3).

The following is the EPA's Report and Recommendations (No. 1599) to the Minister pursuant to section 46(6) of the *Environmental Protection Act 1986*.

Background

The Marillana Iron Ore Project is to construct and operate a 750 Million tonnes iron ore mine, processing facility and associated infrastructure approximately 100km north-west of Newman.

The EPA assessed the proposal at the level of Public Environmental Review (EPA Report 1376) in December 2010. The EPA identified the following key environmental factors relevant to the proposal:

- Flora and Vegetation;
- Fauna;
- Surface Water and Groundwater; and
- Mine Closure and Rehabilitation.

In applying the Environmental Assessment Guideline (EAG) *for Environmental principles, factors and objectives* (EAG 8, January 2015), these factors are now represented by:

- Flora and Vegetation;
- Terrestrial Fauna;
- Subterranean Fauna;
- Inland Waters Environmental Quality;
- Hydrological Processes; and
- Rehabilitation and Decommissioning.

The EPA concluded that “it is likely that the EPA’s objectives can be met provided there is satisfactory implementation by the proponent of the recommended conditions”.

The Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial Statement 855 (8 February 2011).

Requested changes to conditions

Condition 3-1 of Statement 855 requires the proponent to substantially commence the proposal within five years of the date of issue of the Statement (that is, before 8 February 2016).

The proposal has not yet substantially commenced. The proponent for the proposal, Brockman Mining Australia Pty Limited (Brockman), has requested an extension of the Time Limit of Authorisation (now referred to as “Time Limit for Proposal Implementation”) for substantial commencement for a further five years, to 8 February 2021.

The proponent has not proposed any additional changes to the proposal as part of their application to extend the Time Limit for Proposal Implementation.

Application of relevant EPA Policies and Guidelines

In inquiring into the change of condition, the EPA has considered relevant published EPA policies and guidelines for each of the key environmental factors identified above and the relevant matters are discussed in this report (Table 1).

The EPA notes that other published policies and guidelines were also considered but not determined to be relevant.

Inquiry into the requested change to conditions

The EPA recommends imposing a substantial commencement timeframe implementation condition so that the conditions relating to a proposal can be reviewed within a reasonable timeframe to ensure:

- consideration is given to changes in the environment, scientific or technology knowledge arising since the initial assessment; and
- proposals are being implemented using best practice and contemporary methods so that the EPA objectives for the relevant key environmental factors are met.

The EPA has a discretion as to how it conducts this inquiry. The currency of the initial assessment and issue of the Ministerial Statement (that is, when it was published) is also instructive in determining the extent and nature of the inquiry under s46.

Inquiry Findings

In conducting this inquiry the EPA reviewed the information provided by the proponent. In considering whether it should recommend an extension of the Time Limit for Proposal Implementation for the implementation of the proposal, the EPA also considered whether there is any new relevant information in relation to the assessment of the potential impacts of the proposal.

Flora and Vegetation

The EPA's objective for this factor is "To maintain representation, diversity, viability and ecological function at the species, population and community level".

The proposal involves the clearing of up to 2,985 hectares (ha) of native vegetation and it was considered in the original assessment that this had the potential to impact significant flora and vegetation values in the area either through direct or indirect impacts.

There are several existing conditions in Statement 855 that are related to the key factor of Flora and Vegetation:

- condition 5 (Marillana Sand Dune Community) requires the proponent to ensure that the proposal does not adversely affect the Marillana Sand Dune community;
- condition 6 (Weeli Wollli Creek Riparian Vegetation) requires the proponent to ensure that no clearing is undertaken in the riparian vegetation of Weeli Wollli Creek, and that groundwater abstraction and dewatering do not adversely impact the vegetation; and
- condition 7 (Weeds) requires the proponent to manage weed incursions and spread in the proposal and surrounding area.

In consideration of the information provided by the proponent and relevant EPA policies and guidelines, the EPA considers that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal;
- there has been no new significant change in the relevant environmental factors since the proposal was assessed by the EPA in Report 1376 (December 2010); and
- no new significant environmental factors have arisen since the EPA's assessment of the proposal.

The EPA is therefore satisfied that the existing implementation conditions 5, 6 and 7 will continue to address the Flora and Vegetation factor, and manage and mitigate the potential impacts of the proposal.

Terrestrial and Subterranean Fauna

The EPA's objective for this factor is "To maintain representation, diversity, viability and ecological function at the species, population and assemblage level".

The EPA considered that the original proposal had the potential to impact on vertebrate fauna by direct loss and disturbance of habitat through direct clearing of native vegetation, dewatering and pit excavation and indirect impacts on fauna. The EPA considered that given the distribution of invertebrate species identified in the proponent's invertebrate sampling programs and the distribution of habitat both within and outside the project area that the proposal is unlikely to significantly impact invertebrate fauna.

There are no existing conditions in Statement 855 that are related to the key factors of Terrestrial Fauna and Subterranean Fauna.

It was considered in the original assessment that the key potential impacts to fauna related to the loss and degradation of habitat through clearing of vegetation. Conditions 5 and 6 are considered to provide protection for the two significant fauna habitat types, the Marillana Sand Dune community and Weeli Wolli Creek.

In consideration of the information provided by the proponent and relevant EPA policies and guidelines, the EPA considers that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal;
- there has been no new significant change in the relevant environmental factors since the proposal was assessed by the EPA in Report 1376 (December 2010); and
- no new significant environmental factors have arisen since the EPA's assessment of the proposal.

The EPA considers that no further assessment is required other than that in the original assessments for these factors as the proponent has not proposed any additional vegetation clearing or activities that could create additional impacts on Terrestrial Fauna or Subterranean Fauna.

Inland Waters Environmental Quality

The EPA's objective for this factor is "To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected".

In the EPA's original assessment the proposal was considered to have the potential for mine waste to produce Acid or Metalliferous Drainage (AMD) that could potentially impact groundwater and surface water quality and subsequently to impact vegetation and fauna populations which are dependent on the water resource.

Brockman provided information to indicate that the absence of large amounts of sulfide minerals in the waste material indicated that there was a low risk that there will be water quality issues caused by these materials. However, the levels of arsenic, antimony and selenium in the waste rock materials were above global background levels. Selenium was considered of particular concern because even very low levels in water can cause impacts on bird and aquatic populations due to the ability of this element to be biomagnified within local food webs. Brockman proposed a number of design factors to assist in preventing contamination of surface water and groundwater resources.

The EPA recommended conditions to manage Surface Water Flows (condition 9); Groundwater and Surface Water Quality (condition 10); and Acid and Metalliferous Drainage (condition 11).

In consideration of the information provided by the proponent and relevant EPA policies and guidelines, the EPA considers that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal;

- there has been no new significant change in the relevant environmental factors since the proposal was assessed by the EPA in Report 1376 (December 2010); and
- no new significant environmental factors have arisen since the EPA's assessment of the proposal.

Hydrological Processes

The EPA's objective for this factor is "To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance are protected".

In relation to surface water flows, the proposal is located on a floodplain within the Fortescue Marsh catchment, and is intersected by Weeli Wolli Creek. The EPA considered that, due to the placement of the mine pit and infrastructure on the floodplain, there would be a reduction in the available area and thus surface runoff into Weeli Wolli Creek. However, it was considered unlikely that the proposal would have a significant impact to the ecological values of the Fortescue Marsh as the reduction in runoff was estimated at 0.04% (Brockman 2010).

The proponent has not proposed any changes to the placement of mine pit and infrastructure as a result of their application to extend the Time Limit for Proposal Implementation for substantial commencement.

Current condition 8 (Groundwater – Fortescue Marsh) and condition 9 (Surface Water Flows) will continue to mitigate and manage groundwater abstraction, dewatering, and surface water disturbances to Weeli Wolli Creek so they do not adversely impact the hydrology or vegetation health of the Fortescue Marsh or lead to alterations in surface water flows to the Fortescue Marsh.

Groundwater drawdown beneath areas of Weeli Wolli Creek within the mining tenement was considered likely to be more than 20 metres below pre-mining levels. This was considered to impact the potentially phreatophytic riparian vegetation of the creek.

The proponent has not proposed any changes to mine dewatering as a result of this this application to extend the Time Limit for Proposal Implementation.

Current condition 6 (Weeli Wolli Creek Riparian Vegetation) will continue to manage the potential impacts to riparian vegetation related to mine dewatering and the associated groundwater abstraction.

Since this proposal was approved, a number of surrounding iron ore mining operations have expanded or been approved. After the publication of EPA Report 1376 in December 2010, the EPA released *Environmental and water assessments relating to mining and mining-related activities in the Fortescue Marsh management area*. Advice of the Environmental Protection Authority to the Minister for Environment under Section 16(e) of the *Environmental Protection Act 1986* (EPA 2013). This advice aims to provide clarity and consistency in relation to environmental assessment and approvals process by identifying the water and environmental values in different zones and their relative priority; this will help proponents and regulators avoid impacts on the important values of the Marsh.

The Marillana Iron Ore Project is in the Fortescue Marsh 2b (Poonda Plain) management area zone which is of medium environmental significance. The stated environmental values of natural water regimes, sand dune communities, and species of conservation significance were all assessed in EPA Report 1376. Although the environmental value of aquatic invertebrates is not directly addressed in EPA Report 1376, the proposal involves no dewater discharge to any creekline, and the current conditions in Ministerial Statement 855 are considered to provide management and mitigation of impacts to creekline and surface water and groundwater. The EPA therefore considers that current conditions 5 to 13 meet the intent of the section 16(e) advice relating to environmental values.

Having particular regard to the information provided by the proponent and the relevant EPA policies and guidance documents, the EPA considers that:

- there is no significant new or additional information that justifies the reassessment of the issues raised by the proposal;
- there has been no new significant change in the relevant environmental factors since the proposal was assessed by the EPA in Report 1376 (December 2010); and
- no new significant environmental factors have arisen since the EPA's assessment of the proposal.

The EPA considers that no further assessment is required other than that in the original assessments for these factors as the proponent has not proposed any additional changes as a result of this application.

Rehabilitation and Decommissioning.

The EPA's objective for this factor is "To ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner".

The proposed final objective is to return the land to pastoral use. Decommissioning would comprise the return of disturbed areas to the pre-mining state or other agreed land use.

The proponent has prepared a mine backfill plan to guide the progressive backfilling and rehabilitation of the mine pit to reduce the depth of the void and minimise interactions with surface water. No permanent open water voids are expected to result from the proposal. Following final placement of waste material, topsoil would be returned to the final landform and revegetation would be undertaken using seed and stock of local provenance.

Current condition 12 (Rehabilitation) and condition 13 (Final Closure and Decommissioning Plan) manage the potential impacts related to rehabilitation and closure of this proposal.

EPA conclusions and recommendations

The EPA considers that the environmental factors of the proposal have not changed significantly from those presented in the original assessment by the EPA in Report 1376 (December 2010), and no new significant environmental factors have arisen since the EPA's assessment of the project.

The EPA is satisfied that the existing implementation conditions will continue to address the relevant environmental factors, and manage and mitigate the potential impacts of the proposal.

The EPA therefore concludes that its objectives would not be compromised through amendment to condition 3 to extend the 'Time Limit for Proposal Implementation' by five years, to 8 February 2021.

Having inquired into this matter, the EPA submits the following recommendations to the Minister for Environment:

1. condition 3 of Ministerial Statement 855 may be amended to allow for the timeframe for substantial commencement of the Marillana Iron Ore Project proposal to be extended by a further five years, to 8 February 2021; and
2. if the Minister agrees with this recommendation, and after consulting relevant decision making authorities, the Minister issues a statement of decision to change condition 3 of Statement 855 in the manner provided for in the attached recommended statement.

MIN2015/0544

Table 1 – Relevant EPA Policies and Guidelines

Process/ Factor/s	Policies and guidelines considered relevant	Applied Yes/No	Comments
Change to conditions	<i>Environmental Impact Assessment (Part IV Division 1 and 2) Administrative Procedures, 2012</i>	Yes	The Administrative Procedures provide the principles and practices around the environmental impact assessment process undertaken by the Office of the Environmental Protection Authority.
Change to conditions	Environmental Impact Assessment Guideline (EAG) 1 <i>Defining the Key Characteristics of a proposal, 2012</i>	No	<p>EAG 1 focuses on how to define the key proposal characteristics.</p> <p>EAG 1 was considered when identifying whether the key characteristics have been changed in relation to changes to the proposal.</p> <p>No changes to key proposal characteristics have been proposed by the proponent and this guideline has not been applied.</p>
Change to conditions	EAG 8 for <i>Environmental principles, factors and objectives, 2015</i>	Yes	<p>EAG 8:</p> <ul style="list-style-type: none"> • communicates the EPA’s environmental principles, factors and associated environmental objectives; • describes the EPA’s framework for environmental principles, factors and objectives and how they link to EPA guidance; and • outlines the EPA’s expectations for applying environmental principles, government environmental policies, factors, objectives and guidance through environmental impact assessment. <p>In considering the change to conditions EAG 8 was applied when:</p> <ul style="list-style-type: none"> • confirming the key environmental factors identified for the original assessment in the current policy context; • determining whether the identified environmental factors are still relevant and if any new factors should be considered; and • preparing advice on whether the EPA’s environmental objectives can be met.

Process/ Factor/s	Policies and guidelines considered relevant	Applied Yes/No	Comments
Change to conditions	EAG 9 for <i>Application of a significance framework in the environmental impact assessment process, 2015</i>	Yes	EAG 9 describes how the EPA makes decisions, throughout the entire EIA process, on the likely significance of impacts of a proposal. The guideline was applied when assessing the nature, significance and degree of the changes to the proposal.
Change to conditions	Environmental Protection Bulletin (EPB) 11 for <i>Consultation on Conditions Recommended by the EPA, 2012</i>	Yes	EPB 11 describes the EPA's requirements to consult with key decision making authorities and the proponent with regards to recommended implementation conditions. The guideline was applied when the OEPA consulted with the proponent on changes to conditions.
Flora and Vegetation	GS 51 for <i>Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in WA, 2004</i>	Yes	Relevant considerations include: <ul style="list-style-type: none"> • surveys were planned and designed appropriately; • the analysis, interpretation and reporting is of a suitable quality and consistent methodology to enable the EPA to judge the impacts of proposals on flora and vegetation; and • the environment, in particular significant flora and vegetation biodiversity, is identified and protected. No additional surveys were required, however, the Guideline was used to determine if the existing implementation conditions would satisfactorily meet requirements.
Flora and Vegetation	Position Statement (PS) 2 <i>Environmental Protection of Native Vegetation in WA, 2000</i>	Yes	Relevant considerations include: <ul style="list-style-type: none"> • no known species of plant is caused to become extinct as a consequence of the changes to the proposal and the risks to threatened species are considered to be acceptable; • no association or community of indigenous plants ceases to exist as a result of the changes to the proposal; and • the Position Statement was used to determine if the existing implementation conditions would satisfactorily meet requirements.

Process/ Factor/s	Policies and guidelines considered relevant	Applied Yes/No	Comments
Flora and Vegetation	Technical Guide – <i>Flora and Vegetation Surveys for Environmental Impact Assessment</i> , 2010	No	These guidelines were considered in relation to this assessment and they were not applied as no new disturbance has been proposed by the proponent and no further surveys or environmental impact assessment were considered to be required.
Flora and Vegetation Terrestrial Fauna	PS 3 Terrestrial Biological Surveys as an Element of Biodiversity Protection, 2002	Yes	<p>Relevant considerations include:</p> <ul style="list-style-type: none"> • the expectation that all reasonable measures have been undertaken to avoid impacts on biodiversity. Where some impact on biodiversity cannot be avoided, it is for the proponent to demonstrate that the impact will not result in unacceptable loss. <p>No additional surveys were required, however, the Guidelines were used to determine if the existing implementation conditions would satisfactorily meet requirements.</p>
Terrestrial Fauna	GS 56 <i>Terrestrial Fauna Surveys for Environmental Impact Assessment in WA</i> , 2004	Yes	<p>Relevant considerations include:</p> <ul style="list-style-type: none"> • the analysis, interpretation and reporting is of a suitable quality and consistent methodology to enable the EPA to judge the impacts of proposals on fauna and faunal assemblages. <p>No additional surveys were required, however, the Guidelines were used to determine if the existing implementation conditions would satisfactorily meet requirements.</p>
Terrestrial Fauna	Technical Guide on <i>Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment</i> , 2010	No	These guidelines were considered in relation to this assessment and they were not applied as no new disturbance has been proposed by the proponent and no further surveys or environmental impact assessment were considered to be required.

Process/ Factor/s	Policies and guidelines considered relevant	Applied Yes/No	Comments
Terrestrial Fauna	<i>GS 20 Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia, 2009</i>	Yes	Relevant considerations include: <ul style="list-style-type: none"> the analysis, interpretation and reporting is of a suitable quality and consistent methodology to enable the EPA to judge the impacts of proposals on Short Range Endemic invertebrate fauna. No additional surveys were required, however, the Guidelines were used to determine if the existing implementation conditions would satisfactorily meet requirements.
Subterranean Fauna	<i>EAG 12 for Consideration of subterranean fauna in environmental impact assessment in Western Australia, 2013</i>	Yes	Relevant considerations include: <ul style="list-style-type: none"> the likely presence of subterranean fauna and potential impact on its habitat in planning environmental studies and surveys for their project; and appropriate survey is required when subterranean fauna are likely to occur. No additional surveys were required, however, the Guidelines were used to determine if the existing implementation conditions would satisfactorily meet requirements.
Subterranean Fauna	<i>GS 54a Sampling Methods and Survey Considerations for Subterranean Fauna in Western Australia (Technical Appendix to GS54), 2007</i>	No	Relevant considerations include: <ul style="list-style-type: none"> the likely presence of subterranean fauna and potential impact on its habitat in planning environmental studies and surveys for their project; and appropriate survey required when subterranean fauna are likely to occur. These guidelines were considered in relation to this assessment and they were not applied as no new disturbance has been proposed by the proponent and no further surveys or environmental impact assessment were considered to be required.
Inland Waters Environmental Quality	<i>Position Statement 4 Environmental Protection of Wetlands, 2004.</i>	Yes	The relevant considerations include: <ul style="list-style-type: none"> protect the environmental values and functions of wetlands in Western Australia;

Process/ Factor/s	Policies and guidelines considered relevant	Applied Yes/No	Comments
Hydrological Processes			<ul style="list-style-type: none"> • protect, sustain and, where possible, restore the biological diversity of wetland habitats in Western Australia; • protect the environmental quality of the wetland ecosystems of Western Australia through sound management in accordance with the concept of "wise use" (see section 4.3), as described in the Ramsar Convention, and ecologically sustainable development principles, regardless of land use or activity; and • have as an aspirational goal no net loss of wetland values and functions. <p>This guideline was applied to this proposal. It was determined that the proposal is conditioned to manage or minimise impacts to Fortescue Marsh related to the implementation of the proposal.</p>
Inland Waters Environmental Quality	<p><i>Environmental and water assessments relating to mining and mining-related activities in The Fortescue Marsh management area: Advice of the Environmental Protection Authority to the Minister of The Environment under Section 16(e) of the Environmental Protection Act 1986, 2013.</i></p>	Yes	<p>The relevant considerations include:</p> <ul style="list-style-type: none"> • to provide for more effective and efficient management of the Fortescue Marsh management area; • to provide for a better collective understanding of the Fortescue Marsh; and • to provide for a better understanding of cumulative impacts on the Fortescue Marsh. <p>Potential impacts to Fortescue Marsh were considered in the original EPA report. The proposal is conditioned to manage or minimise impacts to Fortescue Marsh due to the implementation of the proposal.</p>
Rehabilitation and Decommissioning	<p><i>DMP/EPA Joint Guidelines for Preparing Mine Closure Plans, 2015</i></p>	No	<p>Condition 13 of Statement 855 predates the Joint Guidelines. However, the intent of the Guidelines can still be met through existing condition 12 (Rehabilitation), and condition 13, which requires preparation of a Final Closure and Decommissioning Plan in line with the following:</p>

Process/ Factor/s	Policies and guidelines considered relevant	Applied Yes/No	Comments
			<ol style="list-style-type: none"> 1. ANZMEC/MCA (2000) <i>Strategic Framework for Mine Closure Planning</i>; including any subsequent revisions, and 2. Department of Industry Tourism and Resources (2006) <i>Mine Closure and Completion</i> (Leading Practice Sustainable Development Program for the Mining Industry), Commonwealth Government, Canberra, including any subsequent revisions.
Rehabilitation and Decommissioning	GS 6 - <i>Rehabilitation of Terrestrial Ecosystems</i> , 2006	Yes	This Guideline applies to the rehabilitation of this proposal. No additional disturbance is proposed and rehabilitation completion criteria will be developed as part of the mine closure planning process, conditioned under Condition 13 of Ministerial Statement 855.
Rehabilitation and Decommissioning	EPB 19 - <i>EPA involvement in mine closure</i> , 2015	Yes	Ministerial Statement 855 predates EPB 19. However, the intent of the EPB 19 can still be met through existing condition 12 (Rehabilitation), and condition 13, which requires preparation of a Final Closure and Decommissioning Plan.

RECOMMENDED ENVIRONMENTAL CONDITIONS

**STATEMENT TO CHANGE THE IMPLEMENTATION CONDITIONS APPLYING TO A
PROPOSAL
(Section 46 of the *Environmental Protection Act 1986*)**

MARILLANA IRON ORE PROJECT
SHIRE OF EAST PILBARA

Proposal: The proposal is to construct and operate a 750 million tonnes (Mt) iron ore mine, processing facility and associated infrastructure using traditional open pit mining methods of excavating, load and haul approximately 100 km north west of Newman. The proposal is further documented in Ministerial Statement 855.

Proponent: Brockman Mining Australia Pty Ltd
Australian Company Number 009 372 150

Proponent Address: Level 2, 56 Ord Street
West Perth WA 6005

Report of the Environmental Protection Authority: 1599

Preceding Statement Relating to this Proposal: 855

Pursuant to section 45 of the *Environmental Protection Act 1986*, as applied by s46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 855 be changed as specified in this Statement.

Condition 3 changed

Condition 3 of Ministerial Statement 855 is deleted and replaced with:

3 Time Limit for Proposal Implementation

- 3-1 The proponent shall not commence implementation of the proposal after 8 February 2021, and any commencement prior to this date must be substantial.
- 3-2 Any commencement of implementation of the proposal, on or before 8 February 2021, must be demonstrated as substantial by providing the CEO* with written evidence, on or before 8 February 2021.

*"CEO" means the Chief Executive Officer of the Department of the Public Service which is responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or his delegate.

Albert Jacob MLA
MINISTER FOR ENVIRONMENT; HERITAGE