

**MT PORTER GOLD PROJECT**

**ARAFURA RESOURCES NL**

**ENVIRONMENTAL ASSESSMENT REPORT  
AND  
RECOMMENDATIONS**

**by the**

**ENVIRONMENT PROTECTION AGENCY (EPA) PROGRAM**

**DEPARTMENT OF NATURAL RESOURCES,  
ENVIRONMENT AND THE ARTS**

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## Abbreviations

|                                |                                                                                                                       |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| AC                             | Acid Consuming                                                                                                        |
| AAPA                           | Aboriginal Areas Protection Authority                                                                                 |
| AHD                            | Australian Height Datum                                                                                               |
| AMD                            | Acid and Metalliferous Drainage                                                                                       |
| ANZECC                         | Australian and New Zealand Environment and Conservation Council                                                       |
| Arafura                        | The Proponent: Arafura Resources NL and its consultant MBS Environmental                                              |
| AUSRIVAS                       | Australian River Assessment Scheme                                                                                    |
| (C#)                           | Commitment Number by Arafura Resources NL                                                                             |
| DBERD                          | Department of Business, Economic and Regional Development                                                             |
| DPI                            | Northern Territory Department of Planning and Infrastructure                                                          |
| DPIFM                          | Northern Territory Department of Primary Industry, Fisheries and Mines                                                |
| DEW                            | Department of the Environment and Water Resources (Australian Government, formerly Dept. of Environment and Heritage) |
| DHCS                           | Northern Territory Department of Health and Community Services                                                        |
| EPA Program                    | Environment Protection Agency Program (Northern Territory)                                                            |
| EMP                            | Environmental Management Plan                                                                                         |
| EPBC                           | Environment Protection and Biodiversity Conservation Act 1999 (Australian Government)                                 |
| H <sub>2</sub> SO <sub>4</sub> | Sulfuric Acid: strong mineral acid, water soluble at all concentrations.                                              |
| ha                             | Hectares                                                                                                              |
| HCS                            | Heritage Conservation Services                                                                                        |
| kL                             | kilolitre                                                                                                             |
| km                             | Kilometres                                                                                                            |
| L/s                            | Litres per second                                                                                                     |
| m                              | Metres                                                                                                                |
| m <sup>3</sup>                 | Cubic metres                                                                                                          |
| MAGNT                          | Museums and Art Gallery of the Northern Territory                                                                     |
| mm                             | Millimetres                                                                                                           |
| MMP                            | Mining Management Plan, regulated by DPIFM under the <i>Mining Management Act</i> .                                   |
| Mt                             | Million tonnes                                                                                                        |
| NAF                            | Non-acid Forming                                                                                                      |
| NAG                            | Net Acid Generation                                                                                                   |
| NAPP                           | Net Acid Producing Potential                                                                                          |
| NLC                            | Northern Land Council                                                                                                 |
| NOI                            | Notice of Intent                                                                                                      |

|          |                                                                                |
|----------|--------------------------------------------------------------------------------|
| NRETA    | Department of Natural Resources, Environment and the Arts (Northern Territory) |
| NT       | Northern Territory                                                             |
| PAF      | Potentially Acid Forming                                                       |
| PER      | Public Environmental Report                                                    |
| ROM      | Run of Mine                                                                    |
| (s.#)    | Section number #                                                               |
| t        | Tonnes                                                                         |
| TPWC Act | <i>Territory Parks and Wildlife Conservation Act 2000</i>                      |
| WRD      | Waste Rock Dump                                                                |

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## Executive Summary

This report assesses the environmental impact of the proposal by Arafura Resources NL to develop an open cut gold mining operation at Mt Porter, approximately 180 kilometres south-east of Darwin. The proposed operation would run for approximately eight months, scheduled to take place during the regional Dry season in 2007.

This Environmental Assessment Report is based on a review of the Public Environmental Report (PER), the Supplement, the additional information provided by Arafura and comments from the public and Northern Territory Government agencies.

Environmental assessment is the process of defining those elements of the environment which may be affected by a development proposal and of determining the significance, risk and consequences of the potential impacts of the proposal.

### Major Issues

Elements of the proposal initially suggest it has low potential to cause significant environmental impacts. This is suggested by:

- The current proposal containing mining operations to within one Dry season, thus removing requirements for management of stormwater runoff during active mining;
- The locations of the mine and waste rock dump being located at the head of the catchment. The open pit is within 50 metres of the summit of Mt Porter and the waste rock dump 50-100m downslope of the pit;
- The one existing spring above the waste rock dump appears to be minor, ephemeral and unlikely to support significant aquatic ecosystems. Removal of a dolerite sill within the pit is suggested as likely to disconnect the spring from its source aquifer, and move the discharge point to the pit;
- The proposal is not situated in a town drinking-water catchment;
- Groundwater aquifers in the area appear to be of low yield and potentially disconnected due to the complex nature and geology of the region;
- Surface waters of the area contain moderate levels of arsenic, aluminium, copper, lead, thallium, vanadium and zinc plus significant traces of other metals and sulphate. It may contain aluminium and iron in colloidal suspension;
- The Pine Creek area has been heavily mined since the 1870s, and is thus already highly disturbed at many nearby locations;
- The proposal involves removal from the site of the bulk of the potentially acidic material, as ore; and
- No chemical processing or crushing of ore is to occur on-site.

Based upon the above, Arafura's view has been that the project is relatively low risk and therefore the detail and extent of information provided in the PER, Supplement and additional information reflects this view. The proponent has argued against submitting requested information stating that it is not necessary for the project's assessment. Instead it has deferred the provision of the information to the approval process. The lack of detail provided by the proponent has increased the risk setting of the proposal as some of the key assumptions outlined above have not been demonstrated through appropriate studies.

### Conclusions

The Environmental Protection Agency (EPA) Program is reasonably confident that mining at the site can be managed in an environmentally appropriate manner; however there are a

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number of key areas that require further work prior to the commencement of any mining activity under the *Mining Management Act* for the development or operations of the proposal. These include the following:-

- (1) A reassessment of the estimates of acid and metalliferous drainage that may reasonably be expected from the project. This will require a re-assessment of the geochemical data provided and provision of adequate information defining the porosity of the oxide material proposed as an encapsulant so that leaching characteristics can be better defined.
- (2) Design and implementation into the proposal of mitigation structures and strategies to minimize, manage and rehabilitate low level Acid and Metalliferous Drainage from the Waste Rock Dump.
- (3) A demonstrated understanding of the extent of connectivity between deep and shallow aquifers and surface flow areas (including waterholes and Nellie Creek) to better determine the true amount of waste water, including potential seepage from the stockpiles, that may be entering the riparian environment.
- (4) Specify and develop appropriate local watercourse trigger values. These must be determined in reference to the declared beneficial uses of the Mary River and be based upon representative background water quality data.
- (5) Production of closure criteria and additional rehabilitation monitoring programmes that provide a wider range of information against which those closure criteria may be cross-referenced.

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# 1 Introduction and Background

This report assesses the environmental impact of a proposal by Arafura Resources NL to develop an open cut gold mining operation at Mt Porter, approximately 180 kilometres south-east of Darwin. The proposed operation would run for approximately eight months, scheduled to take place during the regional Dry season in 2007.

This Environmental Assessment Report is based on a review of the Public Environmental Report (PER), the Supplement, the additional information provided by Arafura and comments from the public and Northern Territory Government agencies.

## 1.1 Environmental Impact Assessment Process

Environmental impact assessment is based on adequately defining those elements of the environment that may be affected by a proposed development, and on evaluating the significance, risks and consequences of the potential impacts of the proposal at both local and regional levels. This Assessment Report describes the adequacy of the PER and Supplement submitted by Arafura Resources NL in achieving these objectives. The report also evaluates the adequacy of the commitments and environmental safeguards proposed by the proponent in order to avoid or mitigate potential impacts associated with the proposed Mt Porter project.

This report forms the basis of advice to the NT Minister for Natural Resources, Environment and Heritage on the environmental issues associated with the project. The NT Minister for Natural Resource Environment and Heritage is required to make comment and/or recommendations with regard to the proposal to the responsible Minister (Minister for Mines and Energy). Accordingly this report also informs the decision as to whether or not the project should proceed.

It will also be forwarded to the Australian Government in accordance with s.130 of the *Environmental Protection and Biodiversity Conservation Act*. The Australian Government has 30 business days in which to issue and approval.

## 1.2 Environmental Impact Assessment History

Arafura submitted a Notice of Intent document, dated May 2004 to the Department of Business, Industry and Resource Development (now the Department of Primary Industries, Fisheries and Mines, DPIFM). The project was considered by a Project Assessment Committee containing representatives of DPIFM and the Department of Infrastructure, Planning and Environment (now the Department of Natural Resources, Environment and the Arts, NRETA), in accordance with the now outdated Memorandum of Understanding between these two agencies.

In August 2004, the Minister for Natural Resources, Environment and Heritage determined that under the *Environmental Assessment Act 1982* the Mt Porter Gold Project was to be assessed by means of the PER process. The level of assessment was set at the PER level because it was considered that the potential environmental impacts of the project were significant, but limited in extent. Draft PER guidelines were published in August 2004 and open for public comment for a 14-day period. Final guidelines were issued in October 2004.

In September 2006 Arafura referred the proposed action to the Australian Department for Environment and Heritage (DEH) to seek a decision on whether or not the proposal was to be considered as a *controlled action* under the Australian Government *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). DEH responded on 9 October 2006 with a decision (EPBC 2006/3047) that the proposed action is considered as a controlled action and therefore subject to approval under the EPBC Act.



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The PER for the Mt Porter Gold Project was submitted to the Northern Territory Environment Protection Agency (EPA) Program on 29 November 2006 and placed on public exhibition until 15 January 2007.

As the project is a controlled action under the EPBC Act is to be assessed under the Bilateral Agreement. Accordingly, submissions made on the PER were forwarded to the proponent to be addressed in a Supplement to the PER, which was submitted to the NT EPA Program on 22 February 2007.

On 8 March 2007, the Minister for Natural Resources, Environment and Heritage requested further information to facilitate assessment of the proposal. On 17 March 2007 a response to the further information request was submitted by Arafura. The response provided some additional information to assist with the assessment of the proposal, however it also argued against a perceived need for some of the requested information. On 19 March 2007, after meeting with the proponent, the response was formally accepted. This Environmental Assessment Report provides the outcomes of the final assessment.

### 1.3 Regulatory Framework

The proposed Mt Porter project has been determined as a 'controlled action' under section 75 of the Federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) and requires approval under the Act.

The controlling provisions under the EPBC Act are:

- Sections 12 and 15A (World Heritage)
- Sections 18 and 18A (Listed Threatened Species and Communities)
- Sections 20 and 20A (Listed Migratory Species)

Approval for the proposed Mt Porter project would be assessed under the Bilateral Agreement signed by the Australian and Northern Territory Governments under Section 45 of the *EPBC Act 1999*. This provides for accreditation of certain state environmental assessment processes, including assessment under the Northern Territory *Environmental Assessment Act 1994*.

The Mt Porter Project is also subject to other relevant Northern Territory legislation. In particular Northern Territory mining operations are regulated by the *Mining Management Act 2001*, administered by the Department of Primary Industries, Fisheries and Mines (DPIFM). Under this Act, Arafura must submit a Mining Management Plan (MMP) and apply for authorisation to carry out mining before mining can start. The MMP is the principal administrative document for the mine and can incorporate environmental conditions generated by the environmental approval process. It would also incorporate an Environmental Management Plan (EMP).

Key Northern Territory environmental legislation that may be applicable to the project includes:

- *Mining Management Act 2001*
- *Mining Act 1982*
- *Bushfires Act 1980*
- *Environmental Assessment Act 1982*
- *Waste Management and Pollution Control Act 2003*
- *Environmental Offences and Penalties Act 1996*
- *Heritage Conservation Act 1991*

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- *Aboriginal Sacred Sites Act 1989 (Sacred Sites Act)*
  - *Weeds Management Act 2001*
  - *Ozone Protection Act 1996*
  - *Water Act 1992*
  - *Soil Conservation and Land Utilization Act 1978*
  - *Territory Parks and Wildlife Conservation Act 2001*

The Mt Porter Gold Project falls within the Mary River West pastoral lease. The Mineral Lease is also subject to Native Title claims. Arafura has entered into an Indigenous Land Use Agreement with the Northern Land Council to cover exploration and mining activities on the project area and this agreement has been registered. The agreement includes the possibility of any future Native Title Claims over the project area.

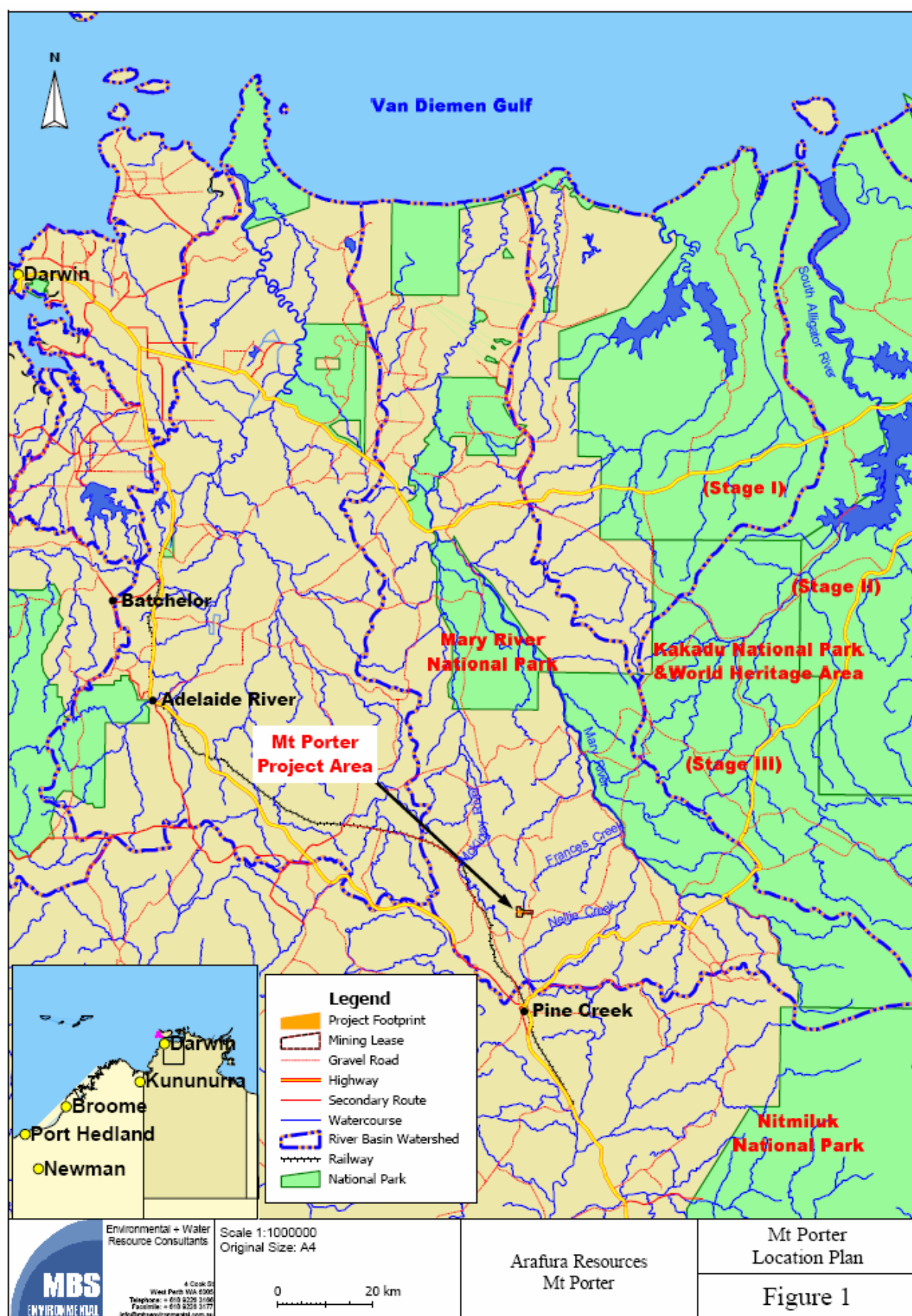


Figure 1 - Mt Porter Location Plan

