# REPORT

**NEW HOPE COAL AUSTRALIA**
ABN: 90 081 022 380

## New Acland Coal Mine Management Plan for Rehabilitated Tailings Dams

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MARCH 2023

TAILINGS.WATER.WASTE.

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## EXECUTIVE SUMMARY

The Management Plan for Rehabilitated Tailings Dams at the New Acland Coal Mine has been prepared to outline rehabilitation principles, performance expectations, and monitoring, maintenance and management requirements for decommissioned tailings storage facilities. The New Acland Coal Mine operates under Environmental Authority (EA) Permit No EPML00335713, with the effective date for the EA version on which this Management Plan being 26 August 2022. This Management Plan exists to complement Condition H3 of Environmental Authority (EA) EPML00335713 and covers Stage 3 development of the project for preparation of a Final Land Use and Rehabilitation Plan (FLURP).

The tailings storages developed as part of the New Acland operation, either decommissioned or operating (as at the date of this report), are as listed below:

- TSF1 Precinct
  - TSF1 and Pond Return Dam
  - TSF1 Extension
- In-Pit Tailings Dams Precinct
  - In-Pit Tailings Dam IPT 1
  - In-Pit Tailings Dam IPT 2/1
  - In-Pit Tailings Dam IPT 2/2
  - In-Pit Tailings Dam IPT3

Each of these storage areas is subject to the requirements of this Management Plan.

The nominal timeframe assigned to the Management Plan is 2022 to 2027, during which period it is expected that all storages listed above will be decommissioned and rehabilitated. This, however, is a working document, with further updates and modifications to be made subject to any of the following occurring:

- Alteration to the landform of any storage by change in operational status, or any expansion or reduction of footprint or height through any form of earthworks or associated mine development.
- A significant incident with respect to the performance of any rehabilitated landform is experienced.
- A material change to the EA for the New Acland operation, or conditions contained therein, are made.

<u>EA Compliance Checklist</u>

A summary of specific EA requirements related to management of rehabilitated tailings dams at the New Acland Mine is provided as **Table ES1**. This table also provides reference to the section of this Management Plan addressing that EA requirement.

**TABLE ES1: EA COMPLIANCE CHECKLIST FOR TAILINGS DAM REHABILITATION**

<table>
<tr><th>Aspect</th><th>EA Reference</th><th>Management Approach</th><th>Management Plan Reference</th></tr>
<tr><td rowspan="2">Rehabilitation Requirements</td><td>H1</td><td colspan="2">Land disturbed by mining on ML50232 and ML700002 must be rehabilitated in accordance with Table H1: Rehabilitation requirements for disturbance within ML50232 and ML700002.</td><td rowspan="2">Section 4</td></tr>
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<tr><td>Non-polluting</td><td>Acid mine drainage will not cause environmental harm</td><td>Adequately capped. Minimise erosion through adequate vegetation cover to less than 10t/ha/yr. Runoff and seepage controlled by water management.</td><td>Monitoring meeting release limits. Suitable for low intensity grazing</td></tr>
<tr><td>Stable</td><td>Minimise erosion</td><td>Stored in both pits below natural surface level and in dams above natural surface. Establish adequate vegetation cover.</td><td>Monitoring demonstrates revegetation success. No structural erosion present. Suitable for low intensity grazing</td></tr>
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| Aspect | EA Reference | Management Approach | Management Plan Reference |
|---|---|---|---|
| Closure and Post Closure | H15 | When the deposition of tailings ceases, the environmental authority holder must install a final cover system to the Tailings Storage Facility, which effectively minimises:<br>a) infiltration of water into the Tailings Storage Facility; and<br>b) the likelihood of any erosion occurring to either the final cover system, dumped spoil material or deposited tailings; | Section 4 |
| | H16 | The final cover system must include an inert layer to reduce infiltration and an upper/final layer of earthen material that is capable of sustaining plant growth. | |
| Final Land Use Outcomes | H17 | Areas that are to be progressively rehabilitated must comply with, but not be limited to, the following outcomes:<br>a) All areas disturbed by mining activities must be rehabilitated to the landform design criteria defined in the FLURP; and<br>b) The final landforms must be stable with erosion rates comparable to a suitable analogue site. | Sections 4 and 5 |
| | Tables H2, H5 and H6 Excerpt (for Tailings Dams) | • Land Suitability Class 5<br>• Post Mine Land Use Grazing<br>• Slope Range 1 to 20% (up to $11.5^0$) on crest and batters | |
| Decommissioning and Rehabilitation Aspect | J29 | Dams must not be abandoned but be either:<br>a) decommissioned and rehabilitated to achieve compliance with condition J30; or<br>b) be left in-situ for a beneficial use(s) provided that:<br>(i) it no longer contains contaminants that will migrate into the environment; and<br>(ii) it contains water of a quality that is demonstrated to be suitable for the intended beneficial use(s); and<br>c) the administrating authority, the environmental authority holder and the landholder agree in writing that the dam will be used by the landholder following cessation of the resource activity. | Sections 4 and 5 |

| Aspect | EA Reference | Management Approach | Management Plan Reference |
|---|---|---|---|
| | J30 | After decommissioning, all significantly disturbed land caused by carrying out of the resource activity must be rehabilitated to meet the final acceptance criteria:<br>a) the landform is safe for humans and fauna;<br>b) the landform is stable with no subsidence of erosion gullies for at least three (3) years;<br>c) any contaminated land (e.g., contaminated soils) is remediated and rehabilitated;<br>d) not allowing for acid mine drainage; or<br>e) there is no ongoing contamination to waters (including groundwater);<br>f) all significantly disturbed land is reinstated as required;<br>g) for land that is not being cultivated by the landholder:<br>(i) groundcover, that is not a declared pest species is established and self-sustaining;<br>(ii) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining; and<br>(iii) the maintenance requirements for rehabilitated land are no greater than that required for the land prior to its disturbance caused by carrying out of the resource activity.<br>h) for land that is cultivated by the landowner, cover crop is revegetated, unless the landholder will be preparing the site for cropping within three (3) months of resource activities being completed. | |

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## FIGURES

# 1 INTRODUCTION

## 1.1 Project Description

New Acland Coal Mine is an open cut mining and processing project owned and operated by New Acland Coal Pty Ltd (NAC), a wholly owned subsidiary of New Hope Coal Australia. The New Acland mine site is located approximately 15km northeast of the Jondaryan township, in southern Queensland. Site locality and general site layout details are shown on **Figure 1**.

The New Acland coal mining operation accesses economic coal measures of the Surat Basin. Mining commenced on the project in 2002, following acquisition of the site from Shell Coal Australia Pty Ltd. Mining has occurred within four pits, located within 2 mining leases (ML50170 and ML 50216) covering a total area of some 2,278ha. Approval has been obtained to extend the mining area to the south and west (referred to as Stage 3) within ML50232 and ML700002.

Open-cut mining has employed conventional truck and shovel methods. ROM coal has been washed through the coal handling and processing plant (CHPP), located within the mining lease. The product coal has been railed to the Port of Brisbane, some 250km to the east.

Two waste streams are generated from coal processing at the New Acland mine; coarse reject (material >2mm) and fine reject or tailings (<2mm). Coarse reject is co-disposed in-pit, with tailings pumped as a low density slurry to dedicated tailings storages.

Tailings storages developed to support the New Acland operation have been as follows:

- TSF1 Precinct
  - TSF1 and Pond Return Dam
  - TSF1 Extension
- In-Pit Tailings Dams Precinct
  - In-Pit Tailings Dam IPT 1
  - In-Pit Tailings Dam IPT 2/1
  - In-Pit Tailings Dam IPT 2/2
  - In-Pit Tailings Dam IPT3

The locations of these storages are shown on **Figure 1.**

Additional tailings dams will be required as part of Stage 3 development, with commitment for continuing the use of in-pit storages, with development integrated with mine waste placement.

## 1.2 Management Plan Scope

This Management Plan has been prepared to outline principles and performance expectations in relation to decommissioning and rehabilitation of tailings dams (either existing or future proposed), along with monitoring, maintenance and management of the rehabilitated facilities. The specific intent of the Management Plan is as follows:

- Describe elements of the New Acland project tailings dams relevant to this Management Plan;
- Describes rehabilitation principles to be applied to each tailings dams;
- Outlines rehabilitation criteria and performance targets;
- Provides a rehabilitation monitoring schedule; and
- Outlines management actions to be undertaken in response to monitoring outcomes.

## 1.3 EA Requirements for Tailings Dam Rehabilitation

### 1.3.1 Context

The New Acland Coal Mine operates under Environmental Authority (EA) Permit No EPML00335713, with the effective date for the EA version on which this Management Plan is based being 26 August 2022. This version of the EA covers Stage 3 development for the New Acland project.

Condition H3 of the EA outlines the requirement for a Final Land Use and Rehabilitation Plan (FLURP) which includes the following aspects as a minimum requirement:

- Disturbance type
- Disturbance area
- Pre and post mine land descriptions
- Pre and post mine land capability
- Description of rehabilitation management techniques
- Success indicators
- Monitoring and record keeping.

The FLURP is intended to cover the whole New Acland mine site, including infrastructure areas, overburden dumps and tailings dams. In accordance with Condition H4 of the EA, FLURP outcomes apply for the following:

- Existing disturbance within mining leases ML50170 and ML50216
- Proposed disturbance associated with Stage 3 development within ML50232 and ML700002
- Mined voids on ML50232

As outlined in **Section 1.2**, this Management Plan focusses on tailings dams, and has been prepared to complement the FLURP, providing specific inputs relevant to tailings dam rehabilitation.

It is noted that rehabilitation designs, layouts and specifications for the existing tailings dam are included in the FLURP. These details are based on the principles outlined in this Management Plan, which will then be applied for future tailings dam development.

### 1.3.2 EA Conditions relevant to Tailings Dam Rehabilitation

**TABLE 1** summarises EA conditions with specific relevance to tailings dam rehabilitation at the New Acland Mine, with specific reference to rehabilitation criteria and minimum rehabilitation standards.

**TABLE 1: EA CONDITIONS RELEVANT TO TAILINGS DAM REHABILITATION**

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## 2 TAILINGS CHARACTERISTICS

A range of tailings/slurry characteristics and behaviours for the New Acland tailings stream (based on ATCW, 2013 Error! Reference source not found.) are summarised below.

- **Grading** — Typically $p_{80}$ less than 100µm
- **Constituents/ Geotechnical Classification** — Typically carbonaceous reject, fine soil (clay) and ground sandstone/siltstone.

  Geotechnically, the tailings would be characterised as a CLAYEY SILT of low plasticity.
- **Slurry Density/Solids Concentration** — 30% (wt/wt) as underflow from the tailings thickened
- **Specific Gravity** — Estimated to be 1.8 t/m$^3$, based on coal SG of 1.5t/m$^3$ and sandstone/siltstone SG of between 2.3 and 2.6t/m$^3$.
- **Slurry Treatment** — With the application of pipehead flocculation (i.e. at the point of discharge of tailings slurry), the objective is to increase the rate of solids settlement and improved supernatant water clarity.

  An estimate from NAC is that a solids concentration of 50 to 60% (wt/wt) is achieved at the point of discharge as a result of flocculation.
- **Depositional Behaviour/ Tailings Densities** — As a result of flocculation, rapid segregation between solids and liquor, is achieved, with deposition of solids to the beach and drainage of supernatant to the decant area. It is understood that the supernatant is substantially clarified.

  Beach densities are controlled by the mineralogy of the tailings material, being dominated by coal rejects, which possess a low SG. This is despite the use of flocculation. The tailings mass is very fine grained and therefore retains high water content and is of low permeability. Subject to self-weight consolidation under the mass of the beach, achievable in-storage densities of the order of 1.0t/m$^3$ (average across the storage) are considered achievable. Such densities may increase with exposure to air-drying.

  An average in-storage dry density for tailings of 1.0t/m$^3$ has been adopted for the purpose of management planning for IPT3 based on:

  (i) Configuration of storage

  (ii) Multiple single-point discharge locations

  (iii) Use of pipehead flocculation

  Note that this density is consistent with measured conditions at other projects under similar operating conditions.
- **Beach Slope** — Nominal beach slopes across the tailings surface are considered to be achievable:

  - Exposed beach at point of deposition 0.5 to 2%
  - Fines or submerged beach 0.5% (average)

In summary, tailings contained within the existing tailings dams at the New Acland mine, and likely to be contained in proposed future dams will comprise CLAYEY SILT material of low plasticity. The emplaced tailings would typically be characterised:

- Upper layer of stiff/strong/over-consolidated tailings (up to maximum of 3m depth, but likely to be 1 to 1.5m), resulting from desiccation/air-drying of the exposed tailings surface; grading to
- Low strength/weak likely saturated and under-consolidated tailings at depth.

Geochemically, the tailings would be non-acid-producing but slightly saline. The propensity for spontaneous combustion/heating would be low.

# 3 DESCRIPTION OF TAILINGS DAMS

## 3.1 Overview

Several areas exist within the New Acland mine site that have been or are currently used for storage of tailings. These storages are contained within the following areas:

- Tailings Storage Facility (comprising Tailings Storage Facility 1 and TSF1 Extension)
- In-pit Tailings Storage Facility (comprising IPT1, IPT2/1 and IPT2/2 and IPT3)

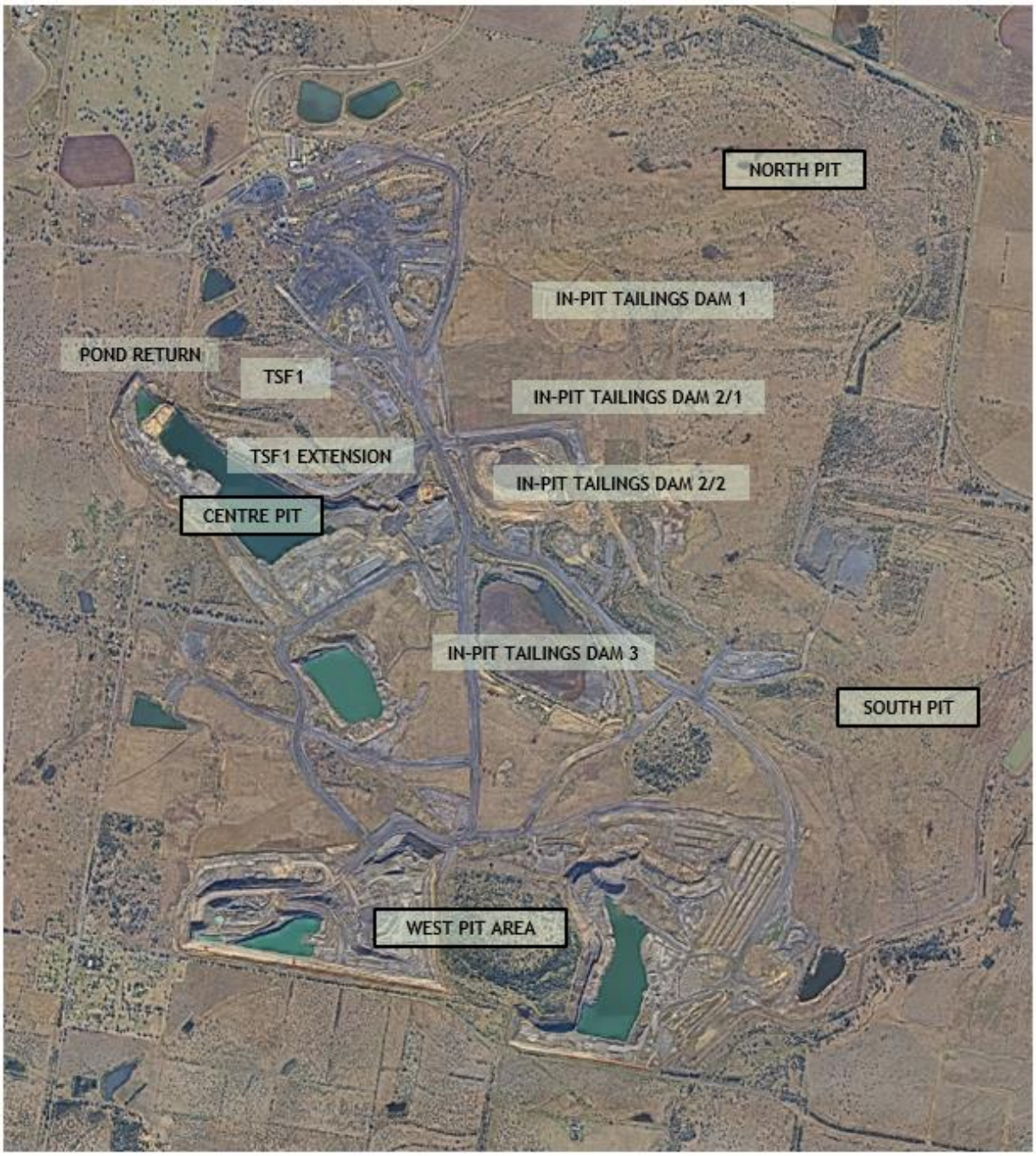
The current (October 2022) status of tailings dam at the New Acland site is briefly summarised below.

- Tailings Storage Facility 1 (TSF1)[1] – Decommissioned and rehabilitated
- TSF1 Extension – Decommissioned and rehabilitated
- In-Pit Tailings Dam 1 (IPT1) – Decommissioned and rehabilitated
- In-Pit Tailings Dam 2/1 (IPT2/1) - Decommissioned and rehabilitated
- In-Pit Tailings Dam 2/2 (IPT2/2) – Decommissioned, with tailings surface capping substantially completed and landform development commenced
- In-Pit Tailings Dam 3 (IPT3) - Operational, available for tailings disposal.

Descriptions of these dams are provided in **Section 3.2** for the Tailings Storage Facility (out-of-pit dams) and **Section 3.3** for In-Pit Storages. The locations of these dams are shown on **Figure 1** and **PHOTO 1**.

[1] Pond Return Dam forms part of the original TSF1 footprint, which is an operational storage used for transfer of process water from the mining area to the CHPP.

**PHOTO 1: LAYOUT OF NEW ACLAND MINE SITE SHOWING TAILINGS DAM LOCATIONS**




## 3.2 TSF1 Precinct (TSF1 and TSF1 Extension)

### 3.2.1 General Description

The precinct that contains Tailings Storage Facility 1 (TSF1) and TSF1 Extension is located within the north-western portion of the NAC land holding, and directly south of the coal handling and preparation plant (CHPP), as shown on **Figure 1**.

Tailings Storage Facility 1 (TSF1) was constructed as part of mine development around 2001 as the "start-up" tailings storage facility for the New Acland operation. This storage was augmented around 2004 with construction of the TSF1 Extension. TSF1 and TSF1 Extension were accessed for tailings deposition until 2007, at which time tailings deposition was transferred to in-pit storages (refer **Section 3.3**.

During operation of TSF1 and TSF1 Extension, a decant pond was formed in the north-western portion of TSF1, by construction of an earthfill partition through the storage. The decant pond is referred to as the Pond Return Dam and remains as the principal process water pond for the CHPP.

### 3.2.2 Description of TSF1

TSF1 was developed as an out-of-pit storage forming the western portion of TSF1 precinct (refer **Photo 1**). The storage was formed by engineered earthen fill embankments that extend generally east to west and south to north. The original storage area was reduced by formation of the Pond Return Dam on the north-western edge of TSF1.

Within this reduced TSF1 area, tailings were placed to a maximum practical extent. It is evident that tailings deposition occurred from the north-eastern margin, with a completed beach falling towards the embankment along the western and southern edges. A beach slope estimated to be between 0.5 and 2.0% was achieved. The likely maximum depth of tailings within the storage is 10m.

Deposition of tailings into TSF1 was ceased around 2007. The post-closure external landform that now exists are summarised as follows:

- Batter Slope (Downstream) 2(H) to 1(V)
- Crest Width 4 to 5m
- Crest Level RL457.0m

Capping and rehabilitation of the exposed tailings surface within TSF1 commenced in June 2012 and was substantially completed by October 2017. The only remaining closure works include installation of drainage chutes on external batter surfaces.

### 3.2.3 Description of TSF1 Extension

TSF1 Extension existed as a separate storage to TSF1, formed by engineered embankments along the south-eastern margins and the original eastern TSF1 embankment. Deposition into this storage was completed at the same time as TSF1.

Tailings were placed within TSF1 Extension to a maximum practical extent. It is noted that tailings deposition occurred from the north-eastern margin, with a completed beach falling towards the embankment forming the western and southern edges. A beach slope of between 0.5 and 2.0% has been estimated. The likely maximum depth of tailings within the storage is 12m.

The post-closure external landform of TSF1 Extension is as follows:

- Batter Slope (Downstream) 2(H) to 1(V)
- Crest Width 4 to 5m
- Crest Level RL456.7m

Capping works for TSF1 Extension commenced in June 2012 and were also completed by October 2017.

### 3.2.4 Landform Development for TSF1 Precinct

Closure and rehabilitation of the TSF1 precinct, comprising TSF1 and TSF1 Extension has created a landform that grades generally to the south and slightly west, in the direction of Centre Pit. The outer edge of this landform is formed by the storage embankments, with embankment surfaces supporting a heavy grass growth that has been sustained for the life of the tailings dams.

Stormwater runoff from the surface of TSF1 and TSF1 Extension will drain through (yet to be constructed) batter chutes, then across the natural-ground headland that exists between the tailings dam precinct and Centre Pit.

**Figure 2**, covering the TSF1 precinct, provides broad-based contours that reflect the overall landform profile for this area.

## 3.3 In-Pit Tailings Dams

On completion of tailings deposition into the out-of-pit storages (TSF1 and TSF1 Extension, refer **Section 3.2**), in-pit tailings storage development within the western margin of the North Pit commenced. Three storages, IPT1, IPT2/1 and IPT2/2 were formed. As these in pit storages reached capacity, IPT3 was constructed within the eastern portion of Centre Pit, to the south of IPT 2/2. Each in-pit storage was formed by a combination of insitu (unmined/high wall) sequences, overburden dumps and semi-engineered embankments (formed also as haul roads).

Approximate timing for in-pit tailings dam development is as follows:

- IPT1 2009
- IPT2/1 2011
- IPT2/2 2012
- IPT3 2015

### 3.3.1 Description of In-Pit Tailings Dam 1 (IPT1)

IPT1 was formed by construction of bund walls to form the southern and eastern extents of the storage. It is understood that the bunds were constructed as part of the mining operation using mine overburden. The nominal external bund configuration comprised a crest width of 60m and batter slopes of 35 degrees. A full supply level of RL467m was formed by lowering of the perimeter embankment around the eastern end of the storage. The total footprint of IPT1 under operational conditions was around 27.5ha.

IPT1 reached capacity for tailings deposition in 2012, with capping works commenced in 2015. These rehabilitation works were substantially complete by 2018, although seeding was not undertaken until 2019.

The final landform drains generally to the south-west. To assist in drainage control, a series of contour drains has been formed across the slope, with these drains directed into a rock armoured drainage channel.

### 3.3.2 Description of In-Pit Tailings Dam 2 (IPT2 and IPT2/2)

IPT2 was formed in 2 stages, as two independent cells (namely IPT2/1 and IPT2/2). An internal wall divided the two cells.

Development of these storages comprised embankment construction within the limits of the mine pit using mine overburden placed as part of the mining operation, using a similar approach to IPT1. Minimum crest levels for bunds on the southern and eastern margins of each storage were as follows:

- IPT2/1 Southern Bund Crest Level RL 460m
  Eastern Bund Crest Level RL 457m
- IPT2/2 Southern Bund Crest Level RL 462m
  Eastern Bund Crest Level RL 456m

Embankment heights forming each individual storage were of the order of 35m. Total surface areas under operating conditions were as follows:

- IPT2/1 35.5ha
- IPT2/2 23.4ha

Beyond these embankments, the western portion of each storage and the southern edge of IPT2/2 were formed by insitu high walls. The length of high wall along the southern margin was further raised by overburden placement to form a mine haul road.

Deposition into IPT2/1 ceased in 2016, and into IPT2/2, ceased in 2017. At this time, deposition transferred into IPT3.

*IPT2/1 Rehabilitation*

Capping works of the tailings surface within ITP2/1 commenced in 2017. These works, including seeding/revegetation, were substantially completed by 2021. The final landform drains generally to the southwest, tying into the IPT1 final landform on the northern edge.

*IPT2/2 Rehabilitation*

Capping within IPT2/2 commenced around 2018, at a time soon after the start of capping of IPT2/1. Concurrent capping works continued within IPT2/1 and IPT2/2. A portion of tailings remains exposed (as at October 2022), with these tailings supporting a significant reed growth. The width of exposed tailings is currently less than 300m (east to west), located generally in the centre of the former storage area.

It is understood that capping works across IPT2/2 will continue with a view to complete the rehabilitation within the next 2 years.

### 3.3.3 In-Pit Tailings Dam 3 (IPT3)

IPT3 is formed by a semi-engineered embankment, as a western partition within the Centre Pit. The embankment was constructed using run-of-mine (ROM) waste rock material, typically comprising weathered mudstone/sandstone, with the embankment founded onto an insitu floor. The crest width is greater than 100m, extended as part of the adjacent Centre Pit development through backfilling of mine overburden, thereby forming a significant separation between the dam and the Centre Pit. The northern and southern ends of the storage are formed by a portion of highwall, with the eastern edge comprising an exposed batter of the overburden waste dump area.

The as-constructed external configuration of IPT3 can be summarised as follows:

- Embankment crest level — RL 460m
- Crest Width — Varies from 100m to in excess of 250m having been widened as part of Centre Pit backfilling.
- Downstream Batter — The as-constructed downstream batter was 2(H) to 1(V) however has been filled against as a result of buttressing with Centre Pit development. Downstream batter of buttress into pit is around 10(H) to 1(V)
- Drainage catchment reporting to IPT3 — 32.2ha

IPT3 possesses capacity for continued tailings deposition.

### 3.3.4 Landform Concept for In-Pit Tailings Dams Precinct

The concept for closure of in-pit tailings dams (IPT1, IPT2 and IPT3) is to develop a landform that integrates with the overall rehabilitated landform for the mine site, generally sloping towards the south west (in the direction of the Centre Pit area).

**Figure 2**, covering IPT1, IPT2/1, IPT2/2 and IPT3, provides broad-based contours that reflect the overall landform development profile for the area, which indicates drainage towards the west and south.

## 3.4 Final Cover System for Tailings Dam

### 3.4.1 Closure Objectives for Past Capping Works

Capping works have been undertaken across both the TSF and In-Pit Tailings Dam precincts. From **Sections 3.2** and **3.3**, the status of capping works completed to date is as follows:

- TSF1 and TSF1 Extension — Capping and revegetation works completed by 2017 (with external batter chutes to be constructed for stormwater drainage from capped surfaces)
- IPT1 — Capping and revegetation works completed by 2019
- IPT2/1 — Capping and revegetation works completed by 2021
- IPT2/2 — Capping works substantially completed, with revegetation works to be commenced post-2023
- IPT3 — Remains operational with no capping works commenced.

The basic objective for past capping works has been to return each tailings dam area to a productive land use, specifically cattle grazing. Key characteristics have therefore been to achieve free-draining surfaces able to sustain pasture-type grasses.

The general approach adopted for capping of these areas has comprised the following:

- Removal of ponded water from the surface of the tailings beach.
- Placement and spreading of a layer of coarse reject across exposed tailings surfaces. (Any heave occurring across the tailings surface has been managed by allowing time for the heave areas to stabilise as well as drying of any moisture expression, prior to recommencing capping works.)
- Placement, spreading and compaction of a clayey soil layer across the coarse reject layer as a "sealing layer", using soils won from the mining operation. Typical of the region, these soils are clayey and are of low permeability when placed and compacted. (Where the tailings surface has been sufficiently competent, the coarse reject layer has been omitted, with the "sealing layer" placed directly onto dried tailings. This has been a rare occurrence.)
- For in-pit dams, placement of mine overburden across the capped tailings surface to transition with the surrounding overburden emplacement profile. Mine overburden has been placed either by pushing down from perimeter embankments or by hauling and placing using mine plant from active mining areas.
- On reaching a final landform profile, placement of topsoil and revegetation by seeding, either across the tailings surface capping layer (TSF precinct) or across the final landform (mine overburden surface) formed within the IPT precinct.

This capping approach was adopted primarily to achieve compliance with past versions of the EA for the New Acland mine, which indicated the requirement for a final cover system that effectively minimises:

*(i)* *infiltration of water into the tailings dam; and*

*(ii)* *the likelihood of any erosion occurring to either the final cover system or deposited tailings.*

The inclusion of a "sealing layer" by NAC in the tailings dam cap was therefore to address the EA requirement to minimise water infiltration. A combination of completed surface grades and topsoil characteristics was adopted to address the erosion mitigation requirement.

### 3.4.2 Basis for Future Capping Works

The approach for past capping works, as described in **Section 3.4.1**, was based on general adherence to EA conditions existing at that time, whilst making use of available site materials (e.g., coarse reject, clayey soils and topsoil materials). This approach however was not specifically risk-based, to the extent that potential environmental aspects associated with encapsulation of tailings were not considered. Indeed, the characteristics of the tailings materials and the landform in which these materials are contained, are such that the risk of environmental impact is very low to negligible, and therefore the past capping approach is considered to be conservative.

Reference to the Environmental Impact Statement (EIS) for the New Acland Coal Mine Stage 3 project2 reports on the geochemical characteristics of mine waste from the operation including overburden, interburden, coal floor, coal roof, coal partings and reject coal, as well as processed mine waste comprising fine and coarse coal washery rejects. The report states that mine waste from Queensland coal mines is typically characterised by drainage that has neutral pH and low to moderate concentrations of salts such as sodium, chloride and sulphate. It also states that from geochemical characterisation work undertaken in relation to the NAC project, some of the waste may be potentially acid forming, however surface water quality monitoring data from the period of mining at New Acland has not identified any acid or metalliferous mine drainage. This finding is consistent with the geology (depositional history) of the Walloon Coal Measures, with the alkaline nature of overburden and interburden providing a neutralising capacity against potentially acid forming waste material.

In terms of exposure pathways from any of the tailings dams, which may pose a potential threat to receiving environments:

- The TSF1 precinct comprises surface impoundments, with embankments located directly adjacent to the current Centre Pit void. Although no seepage from these TSF1 embankments have been observed since development, if seepage was to form, discharge would report to the void. Anticipating that this void would eventually be developed as an in-pit tailings dam as part of Stage 3 development, the location and layout of this storage would enable any future seepage from the TSF1 dams to be intercepted and managed.
- In-pit tailings dams are contained below pre-existing ground level, and contained within low permeable sequences, either insitu or replaced overburden. The receiving environment for any seepage migration from the in-pit dams would therefore be confined to the uppermost groundwater aquifers, which are hosted within Marburg Sandstone and Helidon Sandstone sequences. These sequences are located at significant depths and vertically separated from the mining area/impoundments by a substantial thickness of fine grained sedimentary rocks (Walloon Coal Measures), acting as a significant aquitard. The only groundwater that may be expected within the zone of mining is associated with the coal seams themselves, or through cross-faulting that intersects coal seams, both of which are of low capacity.

Based on these conditions, reducing seepage potential from tailings dams as a means of reducing the potential threat to receiving environments would exist as a lower priority, given the very low capacity of potential exposure pathways. Notwithstanding these circumstances, the characteristics of soils available from the mine site used in any tailings dam capping layer in a general fill application would inherently be of low permeability and would discourage moisture infiltration.

Of greater importance with respect to tailings dam capping would be to create a landform that is capable of sustaining a productive end use (such as grazing). The geotechnical integrity of the capping horizon (i.e., to limit large scale settlement or displacements), as well as erosional stability (i.e., managing potential for rilling and scouring) would therefore exist as a higher-level priority.

### 3.4.3 Future Tailings Dam Capping Approach

The approach to be applied for future tailings dam capping works will remain consistent with the past approach as described in **Section 3.4.1**. The principle objectives of this approach are to form a final landform surface across all completed tailings dam that exhibit the following characteristics:

- is geotechnically stable (not subject to large scale settlement or displacement) and erosionally stable (within defined limits for rilling/scouring);
- is free draining, such that water is prevented from ponding, thus protecting the end land use;
- achieves a productive end use of grazing by sustainably supporting a growth of pasture grasses.

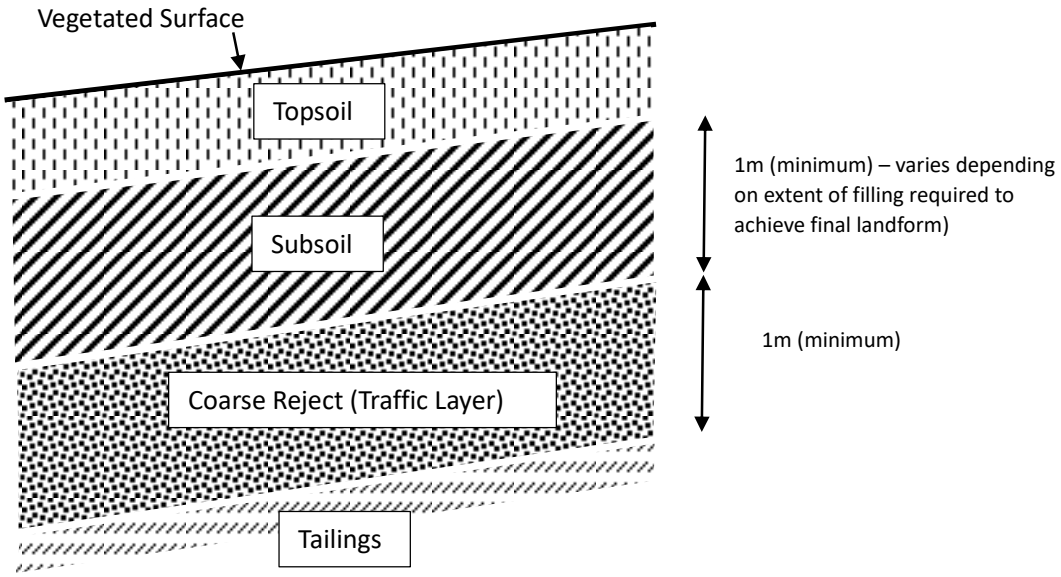
Notwithstanding these objectives, which satisfy the basis for future capping works as outlined in **Section 3.4.2**, the current EA states the following requirements under Conditions H15 and H16:

[2] New Acland Coal Stage 3 Project's Environmental Impact Assessment documents | State Development, Infrastructure, Local Government and Planning

- When the deposition of tailings ceases, the environmental authority holder must install a final cover system to the Tailings Storage Facility, which effectively minimises:
  a) infiltration of water into the Tailings Storage Facility; and
  b) the likelihood of any erosion occurring to either the final cover system, dumped spoil material or deposited tailings;
- The final cover system must include an inert layer to reduce infiltration and an upper/final layer of earthen material that is capable of sustaining plant growth.

The capping layer configurations being applied to achieve these adopted characteristics, whilst also complying with Conditions H15 and H16 of the EA is shown on **Diagram 1**.

**DIAGRAM 1 – FINAL COVER CONFIGURATION FOR FUTURE CAPPING WORKS**




Coarse reject is produced at the CHPP, while subsoil (comprising overburden materials) and topsoil materials are recovered from the mining operation. It is noted that the subsoil layer (corresponding to the "sealing layer" used in past capping works – refer **Section 3.4.1**) would comprise clayey soils being placed to create the base profile for topsoil layer and into which vegetation roots may penetrate. The characteristics of the subsoil material would act to diminish inhibit downward moisture migration, however from a risk-based performance approach, is not considered necessary for this purpose.

# 4 REHABILITATION CRITERIA

## 4.1 Rehabilitation Objectives and Goals

The basic objective for mine site rehabilitation is to maintain environmental values within the mining area and near surrounds. In accordance with Condition H1 (Table H1) of the EA, this objective is reflected in the following Rehabilitation Goals:

- Safe
- Non-polluting
- Stable
- Self-sustaining

In the context of the New Acland tailings dams, and in terms of site setting, tailings characteristics and tailings dam configurations, these goals can be expressed broadly as follows:

- Rehabilitation Goal 1

  Create geotechnically stable and free draining landforms, with adequate capping to maintain safety for humans and animals

- Rehabilitation Goal 2

  Create landforms that are non-polluting through effects of acid mine drainage, and therefore protect the receiving environment

- Rehabilitation Goal 3

  Form capping layers across tailings dam surfaces using capping soils of adequate quality that minimise erosion, support vegetation cover and promote effective (non-disturbing) stormwater management.

- Rehabilitation Goal 4

  Promote self-sustaining vegetation cover, in terms of growing conditions (including soils as per Goal 3) and vegetation species, whilst minimising weeds and other invasive plant growth.

## 4.2 Supporting Rehabilitation Principles

Key principles to support tailings dam rehabilitation within the New Acland mine site to achieve the rehabilitation goals as listed in **Section 4.1** are as follows:

- ensure that tailings are placed within secure engineered structures to support the development of safe, stable and free-draining landforms;
- construct effective capping systems across exposed tailings surfaces that remain geotechnically stable (in terms of vertical settlement, horizontal displacement and surface erosion), as well as minimising long-term moisture infiltration into the contained tailings mass;
- achieve appropriate final land uses by promoting sustainable vegetation covers across capped surfaces; and
- minimise risk whilst working towards rehabilitation success.

## 4.3 Rehabilitation Strategy and Performance Targets

The strategy for rehabilitation of the tailings dams, and associated performance expectations, developed based on the rehabilitation principles listed in **Section 4.2,** are summarised in **TABLE 2**.

**TABLE 2: REHABILITATION STRATEGY AND PERFORMANCE TARGETS FOR TAILINGS DAMS**

| Aspect | Strategy | Criteria/Performance Target |
|---|---|---|
| Rehabilitation Goal 1 – Landform | | |
| Final Land Use | • Achieve EA requirements (Tables H2 and H5 related to tailings dams) | • Final land use: Grazing<br>• Post-mine land use suitability classification:<br>Class 5 – Unsuitable land with extreme limitations that precludes its use |
| Final Landform (Geometry and Geotechnical Stability) | • Achieve EA requirements (Table H6) related to grades<br>• Integrate landform with surrounding rehabilitated mining landform<br>• Maintain external tailings dam embankment slopes (with reference to Tailings Storage Facility) – unless otherwise buttressed by placement of mine waste material as part of ongoing mining. | <u>TSF1 and TSF1 Extension</u><br>• Slopes across upper surfaces to mimic pre-existing tailings surface, draining towards outer embankments. As such, slopes will not exceed 5% grade.<br>• External batters to mimic embankment batter slopes in the medium term, providing long term factors of safety in accordance with ANCOLD 2019 **[1]** requirements, covering long-term drained, short-term undrained and post-seismic conditions.<br><u>In-Pit Tailings Dams</u><br>• Slopes across completed surfaces to tie into adjacent rehabilitated landforms, draining generally to west and southwest.<br>• Grades to vary between 1% and 20%, consistent with EA requirements.<br>General performance criteria:<br>• Free-draining condition maintained<br>• No evidence of slumping at any time following rehabilitation. Such may be in the form of displacement, cracking, scalloping or gross soil movement, including deep rilling and channelling. |
| Surface Water Drainage | • Provide drainage structures from rehabilitated surfaces for controlled release to receiving environments | Tailings Dam Embankment Batters (nominally steeper than 3H to 1V):<br>• Construct engineered batter chutes, designed to accommodate a 100-year critical duration event with entries and exits designed to remain stable and sustainable over periods of service. (Chutes will be formed as interim measures until flattening of batters is undertaken in conjunction with ongoing operations.)<br>• Drainage flows from batter chutes to Centre Pit to be managed to minimise erosion across the headland.<br>Final surfaces: less than 20% grade:<br>• All final surfaces (long term) to be formed to grades of less than 20%<br>• Grassed drainage swales and shallow channels to be formed to reduce slope lengths to less than 50m |

| Aspect | Strategy | Criteria/Performance Target |
|---|---|---|
| | | • Discharge areas to minimise erosion within and outside the limits of the tailings dam. |
| Rehabilitation Goal 2 – Non-Polluting Landforms | | |
| Seepage Management | • Complete tailings surface capping as outlined below to achieve trafficable/ competent surface and to minimise potential for moisture infiltration.<br><br>Structural Layer (Coarse Reject) 1.0m min<br>Sealing Layer (Clayey Fill) 1.0m min<br>Topsoil Layer 0.2m min<br>Grass Vegetation<br><br>Key aspects of capping layer:<br>– Trafficking layer to provide access over tailings for capping layer construction purposes;<br>– Sealing layer to be geochemically inert and of low permeability; and<br>• Topsoil layer to be erosionally stable and is an effective growth medium. | • Landform criteria outlined under Rehabilitation Goal 1.<br>• No discernible seepage from any landform surface that may be either:<br>– Polluting from a receiving water quality perspective; or<br>– Contributing to saturation of the landform that may be de-stabilising.<br>(Note that the critical aspect of seepage from tailings dams is salinity, given that the tailings are non-acid producing. It is also noted that all existing tailings dams drain towards Centre Pit which comprises a residual void. Any seepage from tailings dams, if occurring, would therefore report to this void.) |
| Capping Layer Stability | • Achieve EA Requirements | • Capping layer condition that minimises slumping (i.e., no displacement, cracking, scalloping or gross soil movement, including deep rilling and channelling that impacts on the performance of the capping layer).<br>• Capping layer surface that maintains profile, with drainage of ponded water within a period of 6 hours following any continuous rainfall event. |
| Rehabilitation Goal 3 – Capping | | |
| Capping | Achieve EA Requirements | • Refer to Rehabilitation Goal 2 |
| Rehabilitation Goal 4 – Vegetation | | |
| Vegetation | • Achieve EA requirements for grazing land under Land Suitability Class 5 (refer Table H2 of EA).<br>• Ensure that vegetation cover across capping layers to be consistent with final land use, as well as being self-sustaining, and healthy under reasonable climatic extremes, whilst also contributing to | • Vegetation growth to comprise select pasture species, with shrubs and trees in selected areas.<br>• Vegetation cover (coupled with capping layer material selection and construction) to result in a LOW erosion hazard, based on slope and rainfall erosivity of the topsoil materials utilised (subject to a range of “reasonable” rainfall events). |

| Aspect | Strategy | Criteria/Performance Target |
|---|---|---|
| | maintaining capping layer stability.<br>• Supports management condition that inhibits weed growth | • No rilling or erosion channelling across any rehabilitated surface greater than 100mm depth at spacing closer than 5m.<br>• Acceptance criteria for vegetation coverage as per Table H2 of EA. |

In addition, specific strategies exist for pollution control as outlined in **TABLE 3**, which would relate more specifically to future tailings dams that may report to or create exposure to any receiving waters that exist at or beyond the boundary of the New Acland site. The criteria applying to these strategies are covered elsewhere in the EA and are to be addressed in a Receiving Environmental Monitoring Plan (REMP) for the operation. The expectation/targets outlined in **TABLE 3** therefore represent general principles for protection of receiving environments.

**TABLE 3: STRATEGY FOR POLLUTION CONTROL – RECEIVING ENVIRONMENTS**

| Strategy | Performance Expectation/ Target |
|---|---|
| • Undertake rehabilitation works such that the values of receiving environments (surface water and groundwater) are not threatened | • Release surface water quality in runoff from any rehabilitated surface to comply with EA requirements.<br>• No evidence that surface water drainage or seepage expressions reaching the receiving environment, is causing or has the potential to cause environmental harm.<br>• No accumulation of sediment, resulting from deposition of suspended solids in runoff, to occur within any natural and stable drainage channel downstream of the rehabilitated area<br>• No significant negative impact on groundwater quality within the vicinity of the rehabilitated area. |

Also, where necessary, where interim rehabilitated areas are formed (e.g., embankment batters greater than 20% grade) and not suitable or available for the final land use, these may need to be isolated through fencing or other appropriate barrier systems.

# 5 MANAGEMENT PLAN

**Table 4** below provides a management plan for the rehabilitation of tailings dams based on the rehabilitation strategy provided in **Section 3**. The key elements on which management processes are to be adopted include the following:

- Stability
  - Geotechnical
    - Erosional
    - Surface Settlement/Displacement
  - Drainage
  - Seepage Expression
  - Vegetation Growth
  - Surface Water Quality
  - Groundwater Quality

The management plan is presented in the form of a monitoring schedule, with performance expectations/criteria outlined, as well as management approaches to achieve or maintain these criteria.

An inventory of rehabilitated surfaces, subject to the management plan requirements outlined in **TABLE 4**, will be maintained by NAC, with this inventory to be reviewed and updated on a 12-monthly (minimum) basis. The inventory will take the form of a plan that identifies/maps completed areas of rehabilitation, cross-referencing to results of monitoring and maintenance works undertaken. This inventory will be available for review by the regulatory authorities, as required.

## TABLE 4: MANAGEMENT PLAN FOR TAILINGS DAMS REHABILITATION

| Aspect | EA Reference | Method of Monitoring | Monitoring Frequency | Performance Expectation | Management Approach |
|---|---|---|---|---|---|
| Landform Stability and Capping (Cover Layers) | | | | | |
| Geotechnical | H1, Table H1, Table H6, J29, J30 | Visual | Monthly | No rehabilitated slopes to be greater than 20% (11.5 degrees)<br>No evidence of slumping at any time following rehabilitation. Such may be in the form of displacement, cracking, scalloping or gross soil movement, including deep rilling and channelling. | • External embankment batter slopes of TSF1 and TSF1 Extension to be flattened or buttressed in conjunction with mine site rehabilitation. Timing of these works should be such that exposure to potential instability is reduced, whilst aligning with site operations.<br>• Reprofiling of final IPT3 embankment batter exposed within the Central Pit is to be excluded, as it forms part of the final void.<br>(Note that fencing of batter areas prior to reprofiling may be deemed necessary for protection of stock, where grazing is occurring. In relation to TSF1 and TSF1 Extension, this may be undertaken in conjunction with fencing of the adjacent Centre Pit.) |
| Erosional | H1, H15, H16, J29, J30 | Visual | Monthly | No rilling or erosion channelling of any rehabilitated surface greater than 100mm depth at spacing closer than 5m.<br>(Note that the design of the capping layer systems to be based on soil loss/erosion being less than 10t/ha/yr. Note though that quantitative measurement of soil loss, other than visual assessment of rilling or | • Topsoil to be of quality suitable to support effective growth and moisture conditions, as well as being non-dispersive/ non-erosive (subject to effective placement and compaction techniques).<br>• Effective vegetation growth to be maintained (refer “Vegetation Growth”).<br>• Any erosional features, such as rills and channelling occurring to a greater extent |

| Aspect | EA Reference | Method of Monitoring | Monitoring Frequency | Performance Expectation | Management Approach |
|---|---|---|---|---|---|
| | | | | channelling within the above limits, will be unnecessary.) | than the defined performance criteria, to be infilled with topsoil with re-seeding/ revegetation undertaken |
| Surface Settlement/ Displacement | H1, H15, H16, H18, H19, , J29, J30 | Visual/ Survey (as required) | Visual – Monthly<br>Survey - Annual | Ponded surface water to drain from rehabilitated surfaces within a period no longer than 24 hours following any continuous rainfall event. | • Reprofiling of surfaces as defined under "Geotechnical" to ensure drainage of surface water.<br>• Capping materials to be of quality suitable to achieve competent and stable surfaces subject to surface water flows.<br>• Any hollows, dips or channels formed in rehabilitated surfaces as a result of surface water drainage to be infilled using topsoil with re-seeding/ revegetation undertaken (refer "Vegetation". |
| Surface Drainage | H1, H15, H16, Table H6, J29, J30 | Visual | Monthly | <u>Embankment Batters (Interim Measure)</u><br>Prior to flattening of batters to 20% grade, construct and maintain engineered batter chutes, designed to accommodate a 100-year critical duration event.<br>Batter chutes, including entries and exits, to be designed to remain stable and sustainable for service life.<br>Drainage flows from batter chutes to Centre Pit to be managed to minimise erosion across the headland from rehabilitated tailings dam to Centre Pit.<br><u>All Surfaces</u><br>All rehabilitated surfaces (including embankment batters at the appropriate | • Any disturbance (such as erosion or instability of any surface) caused by surface drainage flows to be infilled using soil and additional armouring materials, followed by revegetation.<br>• Integrity of interim batter drains and discharge areas from embankment batters (steeper than 20% grade) to be monitored, with repair of any scour areas or damage caused by surface water flows to be undertaken promptly. |

| Aspect | EA Reference | Method of Monitoring | Monitoring Frequency | Performance Expectation | Management Approach |
|---|---|---|---|---|---|
| | | | | time) to be reprofiled or regraded as required to achieve a maximum grade of 20%, but greater than 1% to ensure positive drainage of surface water. | |
| Seepage Expression | H1, H15, H16, Table H6, J29, J30 | Visual | Monthly | No discernible seepage from any landform surface.<br>(Note that monitoring approach and frequency may vary where additional monitoring installations are required, in the event that any seepage expression develops) | • Any seepage expression from any landform surface to be investigated, identifying seepage flow rate and seepage water quality.<br>• Potential sources of recharge to seepage, and seepage migration pathway(s) through the tailings dam or tailings mass to be assessed.<br>• Any increased levels of saturation within the tailings mass to be assessed, and thereby any need for a higher level of monitoring, such as piezometers, to be identified, particularly where landform instability or impact on the receiving environment is possible. |
| Surface Water Quality | J29, J30 | Monitoring | As outlined in FLURP/REMP/EA | | |
| Groundwater Quality | J29, J30 | Monitoring | As outlined in FLURP/REMP | | |
| Vegetation | | | | | |
| Vegetation Growth | H1, H3, H4, H15, H16, H17, H18 H21, J29, J30 | Visual<br>(from control plots) | Annually for Control Plots | • Vegetation growth to comprise select pasture species, with shrubs and trees in selected areas.<br>• Success criteria comprises:<br><u>Grazing Land areas:</u><br>• Active Rill/ Gully Erosion Absence<br>• Soil Loss 10t/ha/yr<br>• Vegetation >50% | Vegetation control plots established as follows for any rehabilitated landform/ area (refer Note):<br>• A single control plot, measuring 50m x 10m for assessment of plant species richness, declared weeds and erosion<br>• Five (5) quadrats, measuring 1m x 1m for assessment of ground cover. |

| Aspect | EA Reference | Method of Monitoring | Monitoring Frequency | Performance Expectation | Management Approach |
|---|---|---|---|---|---|
| | | | | • Native and Exotic Species Diversity ≥4 spp per ha<br>• Geotechnical Stability Stable<br>• Declared Weeds Absence<br><u>Grazing Land Treed areas:</u><br>• Active Rill/ Gully Erosion Absence<br>• Soil Loss 10t/ha/yr<br>• Vegetation >50%<br>• Native Tree/ Shrub and Native/Exotic Grass Exotic Species Diversity (spp per ha)<br>Eucalypt ≥4<br>Acacia ≥2<br>Other ≥2<br>Grass ≥3<br>• Geotechnical Stability Stable<br>• Declared Weeds Absence | • Where failure to achieve success criteria occurs, actions to be defined to improve revegetation condition. This may include (for example):<br>– Spraying for removal of weeds (using an approved product)<br>– Hand removal of shrubs and trees (as deemed necessary) from surfaces<br>– Modification of livestock grazing/ densities, harvesting for baling etc as required<br>– Soil reconditioning and/or revegetation in specific areas as deemed necessary<br>• Where other vegetation species (other than weeds), including trees, colonise on any surface, an assessment can be made to review whether the extent to which revegetation success criteria are impacted, and whether these conditions compromise long term land use commitments, or otherwise, contributes unacceptable performance outcomes or environmental harm.<br>• Fencing of completed areas of surface rehabilitation/ revegetation should be targeted to contain livestock and to limit incidental and uncontrolled vehicle and livestock trafficking. Fencing will be installed at the discretion of NAC and is not considered mandatory to achieve success criteria |

Note: Methods for set out of control plots and measurement against success criteria are addressed in the FLURP prepared by NAC.

## REFERENCES


**[1]** ANCOLD (2019), Guidelines on Tailings Dams – Planning, Design, Construction Operation and Closure

**[2]** DES (2016), Department of Environment and Science, Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933), March 2016

**[3]** DES (2022), Department of Environment and Science, Guideline Structures which are dams or levees constructed as part of environmentally relevant activities, ESR/2016/1934 • Version 9.02, April 2022

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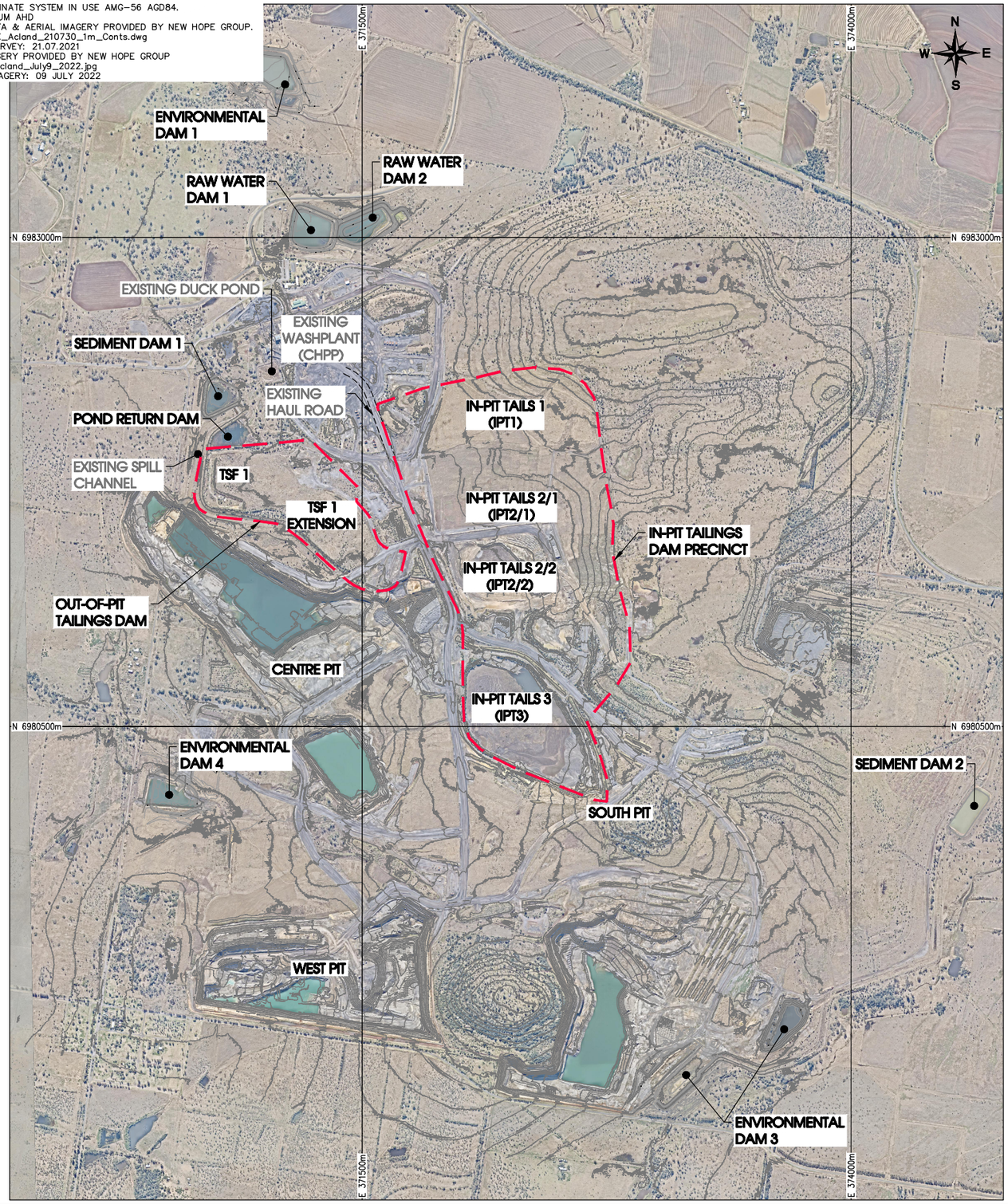
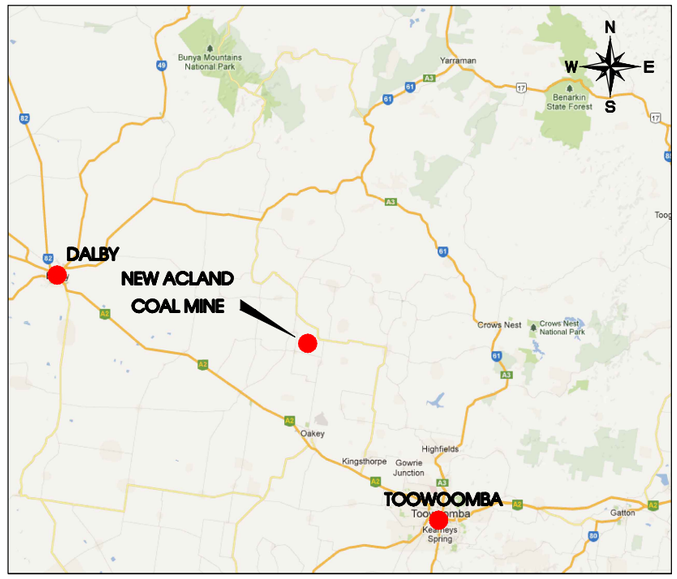
# FIGURES

SURVEY NOTES:
1. GRID COORDINATE SYSTEM IN USE AMG-56 AGD84.
   HEIGHT DATUM AHD
2. SURVEY DATA & AERIAL IMAGERY PROVIDED BY NEW HOPE GROUP.
   FILE NAME: X_Acland_210730_1m_Conts.dwg
   DATE OF SURVEY: 21.07.2021
3. AERIAL IMAGERY PROVIDED BY NEW HOPE GROUP
   FILE NAME: Acland_July9_2022.jpg
   DATE OF IMAGERY: 09 JULY 2022




SITE LOCALITY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

| No. | DESCRIPTION | DATE | DRAWN | CHECK'D | APPR'D |
|---|---|---|---|---|---|
| A | ISSUED FOR REVIEW | 27/10/22 | JC | AW | AW |

| | |
|---|---|
| SCALE: 1:25,000 | |
| JOB No. | 111319-20 |
| DATE | OCT. 2022 |
| DESIGN | 10/27/2022 |
| DRAWN | CLC |
| CHECKED | AW |
| APPROVED | AW |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NEW HOPE COAL PTY LTD
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MANAGEMENT PLAN FOR REHABILITATED TAILINGS DAMS
SITE LAYOUT SHOWING
TAILINGS DAM AREA

DWG. No.
FIGURE - 101

SHEET SIZE: A3 | Rev.: A



SHEET 1 OF 1

M:\Synergy\Projects\111\111319 New Acland Coal Mine\20 Tailings Mgmt Plan Update\CADD\CAD\111319-20-FIG-101.dwg

Printed on: Thursday, 27 October 2022 04:44:21 PM By: James Camille

SURVEY NOTES:
1. GRID COORDINATE SYSTEM IN USE AMG-56 AGD84. HEIGHT DATUM AHD
2. SURVEY DATA PROVIDED BY NEW HOPE GROUP. FILE NAME: ipt3_211018 ATCW mod for importing.dwg DATE OF SURVEY: 18.10.2021
3. AERIAL IMAGERY PROVIDED BY NEW HOPE GROUP FILE NAME: Acland_July9_2022.jpg DATE OF IMAGERY: 09 JULY 2022

EXISTING WASHPLANT (CHPP)
EXISTING DUCK POND
EXISTING SEDIMENT DAM
POND RETURN DAM
EXISTING SPILL CHANNEL
EXISTING HAUL ROAD
TSF 1
TSF 1 EXTENSION
BATTER DRAINS LOCATED ALONG TSF 1 / TSF 1 EXTENSION EMBANKMENT
OUT-OF-PIT TAILINGS DAM PRECINCT
IN-PIT TAILS 1 ( IPT1 )
IN-PIT TAILS 2/1 ( IPT2/1 )
IN-PIT TAILS 2/2 ( IPT2/2 )
IN-PIT TAILS 3 ( IPT3 )
IN-PIT TAILINGS DAM PRECINCT
CENTRE PIT
SOUTH PIT
ENVIRONMENT DAM 4

E 371500m
E 372500m
E 373500m
N 6982000m
N 6981000m

LEGEND:

GENERAL FUTURE PROFILE OF AREA FOLLOWING CAPPING AND LANDFORM DEVELOPMENT (SUBJECT TO DETAILED DESIGN)

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

| No. | DESCRIPTION | DATE | DRAWN | CHECK'D | APPR'D |
|---|---|---|---|---|---|
| A | ISSUED FOR REVIEW | 27/10/22 | JC | AW | AW |

| | |
|---|---|
| SCALE: 1:5,000 | |
| JOB No. | 111319-20 |
| DATE | OCT. 2022 |
| DESIGN | 10/27/2022 |
| DRAWN | CLC |
| CHECKED | AW |
| APPROVED | AW |

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NEW HOPE COAL PTY LTD
NEW ACLAND COAL MINE

MANAGEMENT PLAN FOR REHABILITATED TAILINGS DAMS
LAYOUT AND FUTURE LANDFORM FOR TAILINGS DAMS PRECINCT

DWG. No. FIGURE - 102
SHEET SIZE A3 Rev. A



SHEET 1 OF 1

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