

Panguna Mine Legacy Impact Assessment

Phase 1 Assessment Report Chapter 1 – Introduction

Panguna Legacy Assessment Company Limited



Reference: 754-MELEN305719_R03

CONTENTS

1. INTRODUCTION	1-1
1.1 The Legacy Impact Assessment.....	1-3
1.1.1 Objective.....	1-3
1.1.2 Oversight and independence	1-3
1.1.3 Phases.....	1-4
1.1.4 Human rights-based approach and stakeholder engagement.....	1-5
1.2 The Complaint	1-5
1.2.1 Key issues	1-6
1.2.2 Remedy sought by the Complainants	1-8
1.3 The Phase 1 Assessment Report	1-8

LIST OF FIGURES

Figure 1.1 Bougainville Island location	1-2
---	-----

1. INTRODUCTION

The Panguna Mine is located on Bougainville Island within the Autonomous Region of Bougainville in Papua New Guinea (PNG) (Figure 1.1). Bougainville Island is in the South Pacific Ocean, northeast of the island of New Guinea and northwest of the Solomon Islands.

The Panguna Mine has a complex history. The Panguna Mine was one of the world's largest open pit copper operations from 1972, and a critical source of export revenue for the Government of PNG over its 17 years of operation. Since the cessation of mining in 1989, there have been ongoing concerns regarding the environmental, social, and human rights impacts of the mine, particularly associated with the riverine disposal of tailings.

Bougainville Copper Limited (BCL) operated the Panguna Mine from 1972 to 1989. Companies within the Conzinc Riotinto Australia/Rio Tinto Limited Group were together the majority owner of BCL or its predecessor companies during the development, operation and suspension phases of the mine up until 2016, when Rio Tinto Limited's shareholdings were transferred to the Autonomous Bougainville Government (ABG) and Government of PNG, resulting in the ABG and Government of PNG holding equal shares in BCL (36.4%). Since this time, the Government of PNG has announced it intends to transfer its shares in BCL to the ABG, which would result in the ABG holding 72.8% of BCL. This transfer is yet to happen.

From the outset of the granting of leases and approval of the Panguna Mine and the signing of the Bougainville Copper Agreement between BCL and the Australian administration there was opposition from the local community. Once the operations were established there was disapproval and anger felt by many Panguna landholders regarding what was perceived to be an unfair share of financial benefits from the mine, along with the build-up of distrust of BCL associated with earlier land acquisitions (forced and negotiated) and deep concerns about perceived growing social (in-migration and population growth, reduced land availability, land use practice changes), cultural and environmental (particularly downriver) impacts, all of which contributed to an organising of people opposing the mine. In 1988, civil disobedience, theft and property damage directed towards the mine began, and in 1989 troops were deployed. The subsequent civil war on Bougainville lasted for ten years, resulting in up to 15,000 people losing their lives, and displacing approximately 70,000 people.

Since 1989, the mine has never re-opened and there has been no implementation of formal closure, maintenance of mining or process infrastructure or remediation work on the mine or downstream receiving environment. Likewise, since 1989 there has been no large-scale data collection, evaluation and assessment of the environmental, social or human rights impacts of the mine.

In September 2020, 156 residents of villages in Bougainville, which subsequently increased to 170, represented by the Human Rights Law Centre (HRLC), filed a complaint (hereafter referred to as the Complaint) against Rio Tinto Limited with the Australian National Contact Point for the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises (AusNCP). Rio Tinto Limited and the community members represented by HRLC have agreed to an independent impact assessment of the actual and potential impacts caused by the Panguna Mine since the cessation of mining in 1989, known as the Panguna Mine Legacy Impact Assessment (the Legacy Impact Assessment).



- LEGEND**
- Major village
 - ▲ Mountain
 - Bougainville district boundary
 - ▭ PNG international boundary
 - ▭ Phase 1 study area

SOURCE
Villages and borders from PNGRIS and Tetra Tech Coffey.
Study area and topographic features from Tetra Tech Coffey.
Imagery from ESRI (various capture dates).

0 10 20 km
SCALE 1:1,500,000
PAGE SIZE: A4
PROJECTION: WGS 1984 UTM Zone 56S

PANGUNA LEGACY ASSESSMENT COMPANY
PANGUNA MINE LEGACY IMPACT ASSESSMENT
PHASE 1

FIGURE 1.1
Bougainville Island location



1.1 THE LEGACY IMPACT ASSESSMENT

The Legacy Impact Assessment is the first large-scale data collection, evaluation and assessment of the environmental, social and human rights impacts of the mine since cessation of mining in 1989. As such, it has acquired a prominence in Bougainville – and more broadly – that has resulted in intense interest from a broad range of stakeholders. Many of these stakeholders see the Legacy Impact Assessment as an important step of addressing the complex history of the Panguna Mine and the effects of the civil war.

This section provides a brief overview of the Legacy Impact Assessment; chapters 2 to 4 respectively provide further detail about the setting of Panguna and its complex history, the Legacy Impact Assessment scope and overarching approach and stakeholder engagement.

1.1.1 Objective

The objective of the Legacy Impact Assessment is to identify and assess the actual and potential environmental impacts caused by the Panguna Mine since the cessation of mining in 1989 and the social and human rights impacts that are directly connected to these environmental impacts and to develop recommendations for what needs to be remedied to address or mitigate these impacts. For the purposes of the Legacy Impact Assessment, ‘actual impacts’ means an adverse impact that has occurred, or persisted, since mining ceased in 1989, or is occurring, and ‘potential impact’ means an adverse impact that may occur but has not yet done so. This objective includes environmental impacts caused by the mine that have continued after 1989 and the social and human rights impacts directly connected to those impacts.

1.1.2 Oversight and independence

The Legacy Impact Assessment is overseen by the multi-stakeholder Oversight Committee which is supported by an Independent Facilitator and Secretariat. The Oversight Committee was established by the ABG and parties to the AusNCP process (Rio Tinto Limited, the HRLC and the Complainants represented by HRLC). It has representatives from the Independent State of Papua New Guinea, the Autonomous Bougainville Government, HRLC, Rio Tinto Limited, BCL, as well as landowner and the Complainants represented by HRLC. The Oversight Committee is chaired by an Independent Facilitator who is independent from ABG, Government of PNG, Rio Tinto Limited or the Complainants.

The key responsibility of the Oversight Committee is to ensure that the Legacy Impact Assessment is scoped and undertaken in a manner that is objective, data-driven, consultative, rights-respecting and effective, and conducted and completed safely in accordance with the agreed methodology.

The Oversight Committee is entrusted with endorsing documents and actions to progress the Legacy Impact Assessment, for example:

- Primary contractor scope and tender process
- Endorse lists and options for Technical Sub-Committee and Secretariat selection
- Oversee Legacy Impact Assessment and pass information back to key stakeholders
- Review process reports and advise on gaps and concerns
- Approve key messages for release.

While the Oversight Committee’s mandate does not extend to making any decisions about remediation, its broader intent is to work towards long-term solutions to the environmental impacts caused by the Panguna Mine since the cessation of mining in 1989 and the social and human rights impacts that are directly connected to these environmental impacts, rather than to focus on re-opening of the mine.

Following the conclusion of the impact assessment, the Parties to the Complaint will engage in further discussions in relation to the recommendations made by the Legacy Impact Assessment and the remaining commitments sought by the communities.

The Secretariat is an organisation supporting the Oversight Committee, Technical Sub-Committee, Independent Facilitator and Complaints Mechanism. The Secretariat provides independent culturally sensitive advice and recommendations, management, community engagement and logistical support.

The Technical Sub-Committee provides technical advice to the Oversight Committee to support decision-making about the impact assessment. The Technical Sub-Committee is made up of five independent technical experts (not the Primary Contractor) and includes members who together have the following technical skillsets: human health, social and communities, human rights, environmental, geomorphology and geotechnical.

Following a tender process, Tetra Tech Coffey was selected as the Primary Contractor to prepare Phase 1 of the Legacy Impact Assessment in October 2022. Tetra Tech Coffey is contracted to the Panguna Legacy Assessment Company Limited, an independent company set up to provide funding for the assessment and the Oversight Committee and Secretariat. It is made up of three members (ABG, BCL and Rio Tinto Limited) and is managed by three directors who are independent of the members.

1.1.3 Phases

There are currently three phases of the Legacy Impact Assessment:

1. Preparatory phase
2. Phase 1
3. Phase 2.

1.1.3.1 Preparatory Phase

In advance of the Legacy Impact Assessment, the Parties to the Complaint commissioned an independent third party (Tetra Tech Coffey) to prepare a fact base, peer reviewed within the AusNCP structure, to assist with scoping the Legacy Impact Assessment (Preparatory Report). The objectives of the Preparatory Report were to:

- Develop a fact base of the Panguna Mine in relation to environmental issues, the state of mine infrastructure, key population characteristics, and communities at risk of flooding, based on information provided by the Parties and public sources.
- Identify data/knowledge gaps and areas of further study, to inform the scoping of the Legacy Impact Assessment.
- Provide baseline information for the Legacy Impact Assessment.

The report summarised a desktop review of information from 1972 to present and established a fact base of environmental condition, state of mine infrastructure, key population characteristics, and communities at risk of flooding within the study area.

The Preparatory Phase was completed from October 2021 to March 2022.

The Preparatory Phase work was used to develop an execution framework to guide the subsequent Phase 1 to identify the actual and potential environmental impacts caused by the Panguna Mine since the end of mining in 1989, and the social and human rights impacts directly connected to them. The execution framework subsequently informed the development of the scope of work for Phase 1. Chapter 3 further describes the execution framework and scope of work for Phase 1.

1.1.3.2 Phase 1

Phase 1 commenced in December 2022 and focuses on the most serious known likely impact areas for local communities, and the identification of potentially affected communities as identified in the Complaint. Phase 1 seeks to:

- Assess the acute actual and potential impacts posed to local communities and their environment by unstable infrastructure (open pit, waste rock repositories, tailings deposition area and levees) and erosion of mineral waste into the Jaba-Kawerong rivers and consequent mineral waste transport, deposition, and related flooding downstream.
- Assess water quality (via initial sampling), access and supply, to determine issues with access to safe drinking water and sanitation for impacted communities.
- Characterise the social environment including identifying affected and potentially affected communities and determining the location, size and composition of potentially affected communities, their water sources, livelihood activities and other land use.
- Develop recommendations which clearly specify the impact that needs to be mitigated or remedied based on the impact assessment; and recommend necessary types of analysis needed to determine options to mitigate or remediate the issue.

1.1.3.3 Phase 2

It is currently envisaged that Phase 2 of the Legacy Impact Assessment will follow Phase 1 and may involve a targeted review of any remaining areas of concern as required to assess any remaining actual or potential environmental impacts caused by the mine and any remaining actual or potential social and human rights impacts directly connected to the environmental impacts. The nature and scope of Phase 2 will be dependent on the outcomes of Phase 1 and further discussion with the Parties.

1.1.4 Human rights-based approach and stakeholder engagement

The Legacy Impact Assessment process and the associated investigations have been conducted within a human rights-based and participatory framework.

Engagement with affected people throughout the process has underpinned implementing a human rights-based and participatory approach. Responsibility for community engagement was shared among the Secretariat (broader community engagement, community dialogues and updates and process-related engagement) and Tetra Tech Coffey (investigation-related engagement and engagement to better understand community perspectives on reported issues).

The Secretariat developed a complaints mechanism for people to seek resolution of their complaint related to the Legacy Impact Assessment. Tetra Tech Coffey was responsible for upholding its responsibilities related to the Legacy Impact Assessment Complaints Mechanism, including reporting all complaints received to the Secretariat for investigation and resolution.

1.2 THE COMPLAINT

The HRLC lodged the Complaint in September 2020 and its addendum in October 2022 with the AusNCP against Rio Tinto Limited now representing 170 residents of villages in Bougainville. The Complaint alleges that Rio Tinto Limited is responsible for “*significant breaches of the OECD guidelines relating to the serious, ongoing environmental and human rights violations arising from the operation of its former Panguna Mine on Bougainville*”.

The Complaint draws on data obtained by HRLC between September 2019 and September 2021 during site visits to 38 villages near the Panguna Mine whereby 60 in-depth interviews were undertaken with residents, with additional data obtained in September 2022. In addition, data obtained by the Catholic Diocese of Bougainville between 2017 and 2019 that included 300 interviews of mine-affected residents was also used to inform the Complaint.

On October 2022, HRLC published an addendum to the Complaint regarding mine-related impacts at Loloho and Rorovana areas in the Port and Town Domain. This followed a site visit by HRLC from 8 to 11 September 2022 to document alleged ongoing impacts in this area.

Phase 1 focuses on the most serious known likely impact areas for local communities, and the identification of potentially affected communities as identified in the Complaint. These are summarised below to set the scene for the basis of the Legacy Impact Assessment and the areas of focus in Phase 1.

1.2.1 Key issues

The Complaint alleges key environmental impacts and their implications for human rights “*as a result of pollution from the mine*”.

Polluted rivers

The Complaint alleges the Kawerong and Jaba rivers are contaminated by copper pollution from the mine pit and tailings, along with leaching of copper and other heavy metals from the mine dumps and waste rock. Affected communities perceive the “*absence of fish and aquatic life*” as evidence of pollution from the mine. It is reported in the Complaint that the water causes human health impacts (“*itchy, burning sensation on skin*”) and damage to clothing and metal objects after exposure to river water.

Treacherous river crossings

The Complaint alleges there is a lack of safe roads and bridges along and across the Kawerong and Jaba rivers meaning residents have to cross the rivers daily to access basic goods and services, tend to crops or gardens or attend school. Bridges constructed during the mine’s operation are reportedly gone or unusable. It is alleged that the pollution of the rivers combined with the continuous movement of the tailings, has led to areas of quicksand which is dangerous for community members attempting to cross the rivers. Flooding conditions have threatened villages and led to people relocating.

Lack of access to clean water

The Complaint alleges that access to clean water is a key issue for most communities living around the mine. Communities report significant anxiety about potential contamination of their water sources from chemicals from the mine and the unknown long-term health concerns. Communities also report that flooding caused by tailings waste is contaminating nearby creeks and water sources previously used for fishing and drinking water, meaning people have to walk long distances to access uncontaminated water. During the dry season, communities also report that their water sources become contaminated from tailings dust.

The addendum alleges that chemicals stored in the area previously known as “Camp 11” have been exposed to soil and water. There are allegedly several other facilities where it was reported that chemicals are being stored, including four cylindrical tanks along the Loloho Port road and the old sewage treatment plants. Chemicals were also reportedly dumped in several areas at different times since the closure of the mine. Soil and water contamination were reported as a significant concern of landowners. Additionally, it is alleged that the diversion and contamination of the Pinei River and Dodoko (Aneva) River (and associated contamination of Rorovana Bay and Aneva (Aneva) Bay) during the mine’s operation continues to negatively impact on water security in the area, particularly for the communities of Rorovana 1, Rorovana 2 and Rorovana 3.

Flooding and destruction of land and sacred sites

The Complaint alleges that the chemical contamination of the river is worsened by ongoing erosion from tailings disposed into the Jaba River. According to the Complaint, during heavy rainfall tailings sand is washed into rivers, flooding the land downstream with contaminated mud. In 2017, sediment build up led to the Jaba River changing course impacting the Lower Tailings area. Additionally, in 2019, large forest and wetland areas have reportedly been affected by tailings sediment. As a result of the flooding, there has reportedly been a significant impact on people's livelihoods, housing and food sources. It is reported that landlessness and erosion of land boundaries as a result of the flooding has "engendered" social tensions between landowners.

The Complaint alleges the flooding caused by mine waste has destroyed some of the few remaining sacred sites in the Lower Tailings area, affecting communities' ability to undertake customary ceremonies and their sense of connectedness.

The addendum alleges that impacts of the mine on the Dodoko (Aneva) River ruined a sacred site called Matagorau. Sacred sites called Patabarutu and Patodako were damaged by the reclamation of land to construct the wharf at Loloho Port. The addendum claims that spiritual and emotional impacts are ongoing for landowners.

Landslides and collapsing levees

The Complaint alleges risks created by levee instability and landslides from the tailings waste as another concern for communities. The Complaint claims that levees built to contain the tailings and to redirect the Kawerong River have collapsed or are in the process of collapsing and contribute to the issues of flooding further downstream. Communities report that small landslides from the uncontained tailings mound are commonplace, particularly following earth tremors and heavy rainfall. Due to land shortages, people build houses directly on the tailings, next to unstable levees and on tailings mounds.

Food shortages

The Complaint alleges the loss of arable land has impacted subsistence farming and led to food insecurity, further exacerbated by the lack of fish in the Jaba and Kawerong rivers. Communities reportedly believe soil contamination from the mine has resulted in the decrease of arable land and the quantity and quality of crops.

The addendum alleges that the diversion and contamination of the Pinei River and Dodoko (Aneva) River (and associated contamination of Rorovana Bay and Anewa (Aneva) Bay) during the mine's operation continues to negatively impact on food security in the area, particularly for the communities of Rorovana 1, Rorovana 2 and Rorovana 3. Flooding of food gardens allegedly occurs several times per year, which landowners attribute to the diversion of the Pinei River during the mine's operations.

Disease and illness

The Complaint alleges that communities describe their health as poor. The prevalence of health problems is attributed in the Complaint to exposure to pollution from the mine. The Complaint lists the following health conditions:

- Skins diseases, including irritation and itching, and the development of skin sores from exposure to river water.
- Respiratory problems and chest infections from river water exposure and inhaling fumes and dust from the tailings and waste rock.
- Gastrointestinal problems, including diarrhoea and sometimes vomiting after exposure to river water.
- Women's health and pregnancy complications (miscarriages and difficulty bringing pregnancies to term) among women who pan for gold in the rivers while pregnant.
- Increased instances of malaria as a result of mosquito infestations, as a result of the creation of the swamplands created by local creeks being filled with tailings.

- The addendum states that landowners report there were five fatalities following exposure to drums of unknown chemicals in an area previously known as “Camp 11”.

Human rights

As a result of the key issues identified above, the Complaint alleges the following human rights have been violated:

- Right to life
- Right to health
- Right to water
- Cultural rights
- Rights of women and girls
- Children’s rights.

1.2.2 Remedy sought by the Complainants

The Complainants are seeking commitments from Rio Tinto Limited to:

1. Engage with them (the Complainants) and other Panguna mine-affected communities to help find solutions to the urgent problems and undertake formal reconciliation as per Bougainville custom.
2. Fund an independent environmental and human rights impact assessment of the mine site by a team of qualified local and international experts to map impacts – in particular those posing serious risks to public health and safety – and to develop recommendations to address these. The Complainants stress that both the assessment and recommendations must be developed in close collaboration with the mine-affected communities and the results made freely and publicly available in a form accessible to all.
3. Contribute to a substantial, independently managed fund, to help address the harms caused by the mine and assist in long-term rehabilitation efforts in accordance with the recommendations of the assessment and needs identified by the local communities. The size of the contribution should reflect Rio Tinto Limited’s central role in causing the destructive impacts of the mine and enable effective reparation and remedy.

Since November 2020, Rio Tinto Limited, HRLC and the Complainant Representatives (together, the Parties) have engaged through the AusNCP’s good offices conciliation processes to help resolve the Complaint (AusNCP, 2022). The Parties have agreed to initially focus on the environmental and human rights impact assessment (i.e., the second bullet point), which will then inform further aspects raised in the Complaint.

The first and third bullet points are outside the scope of the Legacy Impact Assessment.

1.3 THE PHASE 1 ASSESSMENT REPORT

The Phase 1 Assessment Report presents the outcomes of Phase 1 of the independent environmental, social and human rights impact assessment of the mine by a team of qualified independent local and international experts to map impacts – in particular those posing serious risks to public health and safety – and to develop recommendations to address these.

The Phase 1 Assessment Report comprises:

- **Volume I**, which provides a non-technical summary of the outcomes of Phase 1 of the Legacy Impact Assessment.
- **Volume II, Part A** (this part), which provides context to the Phase 1 Assessment Report, including a description of the overarching approach to the Legacy Impact Assessment, stakeholder engagement, the results of the environmental and social characterisation and evaluation, and the Conceptual Site Model. It also discusses impacts and perceived issues and risks considered during Phase 1 but not carried through for formal assessment.
- **Volume II, Part B**, which presents the environmental, social and human rights impact assessments. It also sets out recommendations of what should be remedied to address or mitigate the identified impacts, and any further investigations required to assess and address such impacts and risks.
- **Volume III**, which contains technical appendices to the main report.

Phase 1 of the Legacy Impact Assessment would not have been possible without the support and contribution of community members in the study area. Tetra Tech Coffey recognises the input by the village chiefs, clan chiefs, ward members and constituency members who assisted in making this study possible. Individual community members and leaders volunteered their time and contributed to a wide range of environmental and social surveys throughout 2023.

The important role that the Oversight Committee (particularly the community representatives), Secretariat and community facilitators have in establishing the community support for the study is also recognised.