



**BARRICK (NIUGINI) LIMITED**  
(Manager of the Porgera Joint Venture)  
PO Box 484  
Mount Hagen 281, WHP  
Papua New Guinea

Tel: (657) 547 8200 (Porgera)  
(675) 547 8201  
Fax: (675) 547 8132  
Tel: (675) 545 1288 (Mt Hagen)  
Fax: (675) 545 1514

PO Box 851  
Port Moresby 121, NCD  
Papua New Guinea

Tel: (675) 322 4800  
Fax: (675) 322 4824  
Telex: 23369

## **Response to *Red Water* Report – April 2019**

The Columbia Law School Human Rights Clinic and the Advanced Consortium on Cooperation, Conflict, and Complexity at Columbia University recently published a comprehensive report entitled *Red Water: Mining and the Right to Water in Porgera, Papua New Guinea* on the right to water near the Porgera mine (“the Study”).

Barrick Niugini Limited (BNL) was approached by the authors about the Study in 2017. BNL engaged extensively with the authors and provided information and data related to water management on the site. The Study claims Barrick Gold Corporation, Zijin Mining Group, and Barrick Niugini Limited (BNL), the operator of the mine, are in breach of their responsibilities to respect the right to water.

These are concerning allegations and we are committed, as we always have been, to work in a constructive and transparent manner with anyone who has concerns relating to the way the Mine operates and wishes to contribute, in a constructive and inclusive way, to the development of the Porgera region and the surrounding communities as the Porgera JV has been doing for decades. The mine would also like to take this opportunity to provide some additional perspective on several of the important issues raised by the Study.

### **Water management**

The Porgera mine operates under a comprehensive Environment Permit issued by the Government of Papua New Guinea (PNG). Under this permit, the Porgera Joint Venture (PJV) is required to follow a stringent government-approved environmental management and monitoring program.

Under the conditions of its Environment Permit, the mine is permitted to discharge treated mine tailings, treated domestic sewage, rainfall runoff and rainwater drainage from the mine lease areas into the broader Strickland River system, including creeks and tributaries.

Testing of the mine contact water that drains from mining areas is undertaken on a monthly basis to assess that no other mine-derived chemical contaminants, such as hydrocarbons and other deleterious substances, are entering the natural water systems.

### **Environmental Management and Monitoring**

The site is committed to sound environment stewardship and works to achieve this through implementation of an Environmental Management System (EMS) that was certified to the ISO 14001 standard in December 2012 and recertified in 2015 and 2018. A team of environmental professionals takes responsibility for monitoring compliance with permit conditions and PJV standards.

The EMS helps to drive environmental performance by providing a systematic approach to environmental management and continual improvement in areas such as water, energy, mine closure and rehabilitation and waste management. Certification to ISO 14001 provides us with assurance that the right environmental programs and controls are in place and they are being applied consistently and effectively in reducing environmental impacts. In addition, in 2009 Porgera was awarded

certification to the International Cyanide Management Code (ICMC) for the safe transport, handling and use of sodium cyanide for gold processing. The site was recertified to the ICMC in 2012 and 2016.

As recognized in the Study, PJV compiles an Annual Environmental Report (AER) for the PNG Conservation and Environmental Protection Authority each year. The AER is produced in accordance with PJV's Environmental Management Plan and contains detailed data and monitoring results. The report is also independently reviewed by Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's preeminent scientific organisation which provides expert, third-party input to create confidence that it is technically sound. The 2015, 2016 and 2017 versions of the Annual Environmental Report is available on PJV's website ([here](#)).

Since Barrick acquired its interest in the mine in 2006, the PJV has continued to operate and comply with PNG permit conditions, which are specific, while engaging in continuous improvement of environmental performance.

### **Independent Reviews**

At PJV, independent reviews are undertaken to determine that environmental monitoring results are accurate and that current ecological effects have been identified. All samples that require trace metals analysis, including water, sediment and biological samples are sent to independent external laboratories, such as the National Measurement Institute in Australia, to measure the very low levels of trace metals. This testing method has been used on relevant samples since baseline studies were conducted prior to the commencement of mining and for the three decades since. As of 2011, a CSIRO laboratory validates the National Measurement Institute data by analysing trace metals in duplicate samples.

In 1996, PJV commissioned CSIRO, to examine the downstream impacts of the mine. The CSIRO-led, multi-disciplinary review team comprised its own and independent international experts and investigated the mine's effects on the health of villagers living downstream, chemical impacts, sedimentation, the effectiveness of the monitoring program and compliance. Every year we engage CSIRO to review the AER and monitoring program for improvements. Every two years, CSIRO perform an audit of the monitoring program, this includes independent parallel sampling of water quality samples. Independent review found compliance with water quality criteria, that monitoring methods were appropriate and that the original impact predictions had proved to be accurate.

### **Water Quality**

We note that the Study did not find high concentrations of heavy metals in collected rainwater – the main drinking water source in Porgera. As documented in the Study, issues related to potential contamination respond to those creeks and rivers that drain the mine, other areas are not affected. It is important to note that dissolved metal concentrations fall below the WHO drinking water guidelines at all water sources, except in undiluted tailings which are not a source of potable water in the community.

The results of the monitoring program show that PJV is in compliance with the environmental permits issued by the PNG Government and that, overall, the conditions of the environment are consistent with predictions made prior to operations commencing in 1990. We believe the risk to environmental and human health remains low.

### **Improving Access to Water**

A key criticism of the Study is that the mine has not made sufficient efforts to address community water needs. However, it would have benefited by providing a description of the programs the site has in place, including stated objectives, community consultations and participation. We are

particularly concerned that the report does not take into account the local-level social challenges (i.e. tribal conflict) around implementing community development initiatives when dismissing these programs as “inadequate”.

As recognized in the Study, the Porgera SML Landowners raised the issue of village water supplies during the OECD National Contact Point proceedings conducted in 2015. Following the mediation, PJV has been working with local community stakeholders on two key approaches to improve access to water on the mine lease:

- **Participatory water monitoring**, which aims to provide active participation and information for local residents that water sources are safe to use, and
- **Supplementary water program**, a program that has been in operation since 2011 that supports improved access to potable water in communities on the Mining Lease.

### **Participatory Water Monitoring**

The PJV has in place an agreed regime of participative water testing of community-selected water sources.

Drinking water supplies at a number of locations in and around the principal mining lease settlements are sampled and analysed each year. The samples are taken in conjunction with community representatives from the Porgera Land Owners Association (PLOA) or representatives of Village Water Committees (VWCs), at sites nominated by the communities. The samples are sent for analysis by two independent, reputable laboratories:

- Microbiological analyses examining total and faecal coliforms are undertaken by SGS Laboratories in Port Moresby;
- Trace metal tests are undertaken by the Australian Government National Measurement Institute in Sydney, Australia.

PJV’s Environment Department also undertakes physico-chemical analyses of the samples in the mine’s onsite laboratory. Sampling results and data are provided and explained to the community representatives once the analysis is completed, and mine staff are available to further explain or discuss the results once they are received.

We will continue to engage with the community participants in the participative water testing program to discuss practical steps that testing program participants, including company representatives, can take to help ensure that test results are communicated as widely as possible and we remain open to any additional suggestions that might compliment this program should there be.

### **Porgera Supplemental Water Program**

The Porgera Mine operates a supplemental water program to provide additional potable water supplies to local communities. Under the program, BNL and representatives of the relevant villages jointly-agreed to the following objectives:

- Increase community access to potable water;
- Promote engagement, participative decision making and governance amongst community groups in terms of access to potable water; and
- Improve general hygiene in the community.

The program focuses upon forming and partnering with the Village Water Committee to design, construct and manage rainwater catchment and reticulation systems to improve community access to

potable water. Local participation is considered essential to the project, both in terms of planning and development, and in the construction, responsible usage and maintenance of water infrastructure.

Since 2011, 114 water tanks have been installed in more than 100 separate locations, throughout the main settlements on the Mining Lease.

The water is captured from existing catchment structures in the community and piped to a central location accessible to the broader community, the water is considered a communal resource and is managed by the Village Water Committee.

The total capacity of all water tanks installed under this program to date is 550 000 litres. The mine will continue to work with local community representatives and the Village Water Committee on an ongoing basis to determine where the installation of further supplemental water supplies may be required as it has always done

### **Social and Economic Development**

Beyond these targeted efforts to improve access to water quality, the PJV has made extensive contributions to the social and economic development of PNG. This support to the economic development of the country has improved infrastructure and services – including access to water, education, health, and transport, across the country in general and in the Porgera region specifically.

Since the opening, the mine has paid over 3.6 billion Kina in taxes and duties to the National Government. On average, over 10% of PNG's total annual export income is derived from the Porgera mine. In the life of the mine to date, the PJV has also paid over 595 million Kina in royalties.

In addition to directly employing over 3,100 people (93% from PNG) and indirectly supporting other jobs that benefit the wider PNG economy, the mine is also a significant provider of commercial revenue and has contracted over 5 billion Kina worth of goods and services from PNG businesses during its operations. These investments have included approximately 1 billion Kina in contracts provided directly to Porgeran businesses, and a further 3.6 billion Kina spent elsewhere in Enga and PNG.

The mine has also provided funding for the development of critical public infrastructure in Enga and adjacent Provinces, worth more than 475 million Kina since operations commenced. This infrastructure, which includes health, education, power and sanitation facilities, provides very real and practical benefits for people living in these communities.

The mine has also provided funding for the development of critical public infrastructure in Enga and adjacent Provinces, worth more than 475 million Kina since operations commenced. In partnership with the Government, the Company has implemented over 600 Tax Credit Scheme projects that are targeted at the development of essential social services and infrastructure; this includes the provision of water storage infrastructure.

The mine's support to social services and infrastructure, which includes health, education, power and sanitation facilities, provides very real and practical benefits for people living in these communities. For example:

- **Access to electricity:** the mine has extended the power infrastructure built for the mine and provides free power to local communities at a cost of approximately 3 million kina a year;
- **Direct support for community development:** over 45 million Kina provided to support local development projects ranging from education facilities, health centres and ambulance service; and

- **Investing in education:** approximately 20 million Kina to support local education and training initiatives; over a thousand scholarships provided to the local community to date.

### **Preliminary feedback on the Study**

#### **Local Context**

While the Study provides significant background information regarding the environmental and social conditions within the Porgera Valley, there is very little information provided to allow a comparison of the Porgera context with other similarly remote areas of PNG.

For example, the Study does not provide comparative information on how people living in other remote communities with similar conditions store or use water for personal and household purposes, and whether they experience similar difficulties in accessing water in times of scarcity to those reported by respondents.

We also note that the Study does not detail the average annual rainfall for the region – estimated to be between 4 000 – 4 500 mm per year – a point that would provide useful context when considering water availability. The inclusion of this type of contextual information would assist in identifying whether these difficulties are unique to the Porgera context or are more commonly experienced by remote-area communities.

Similarly, we believe the report should have provided further background on the changing social context in Porgera. Significant inward migration into the Porgera Valley has occurred over the past two decades, with some estimates indicating that the local population has grown by more than 1000% over the life of mine which in itself a recognition of the economic and social benefits the Porgera Mine offers relative to other parts of the country.

Despite the benefits that such investment and increased economic activity offers the influx of people has placed significant pressure on the local infrastructure and other resources, including the availability of reliable water supplies. For example, the main river channel was historically not used as a water resource but, as identified in the report, it is now more actively used by some of the population.

In our opinion, the Study would have benefited from comparing the Porgera Valley to similar regions in PNG and assessing whether and how changes to the community profile over time have contributed to the challenges identified. Likewise the demands and the challenges that face the Porgera region could do with more constructive involvement by regional authorities, central Government as well as international agencies' and NGO's, as to take away the positive impacts the mine has on the community would result in a more negative impact on the communities and society in general. What we recognize as our responsibility is to manage our environmental and social impact in mitigating the negative aspects and building on the positive ones in partnership with and for the benefit of all stakeholders.

#### **Shared Responsibilities**

While the Study acknowledged that tackling the challenges identified is not solely a responsibility of the company, the narrative of the report often infers otherwise.

The mine is and remains committed to working with the Government and the local communities to find workable solutions. However, this is a matter beyond the sole scope and control of any entity and requires effort on the part of all relevant stakeholders. We remain committed to our responsibility to respect the human right to water and to supporting the Government to promote responsible stewardship for the environment and promotion of social wellbeing.

As part of the site's engagement with the authors prior to publication, the PJV requested a "map" be included in the Study that would outline the responsibilities and obligations of the various stakeholders involved, including the mine, public institutions, and individual community members. This was not done. In our view, clarifying roles and responsibilities of relevant stakeholders is a critical first step in developing joint approaches to overcoming the issues identified in the study.

**Next Steps**

Subsequent to the publication of the Study, BNL formed a working group to consider the Study. The working group is developing an action plan to respond to the findings and will also prepare and present a formal response to the Study and its recommendations. BNL would also make itself available to discuss the points raised by the study and the action plan developed by the BNL working group.

It is also intended that the outcome of the BNL working group and proposed actions will be shared and discussed with community representatives as soon as it is completed.

**Annex I: Barrick's Commitment to Sustainability and Human Rights**

Barrick's sustainability vision is to create long-term value for all its stakeholders. The Company does this by managing its impacts on people and the environment, by embedding environmental, social and economic considerations into all of its business decisions through partnership with host governments and communities and by engaging respectfully with all of Barrick's stakeholders, so that partners and stakeholders are able to share in the benefits of mining. Sustainability and respect for human rights is a fundamental part of Barrick's strategy and is critical to our long-term success.

Following the recent merger with Randgold, Barrick's Group Sustainability Executive was appointed to the Company's executive committee. In addition, Barrick reaffirmed its commitment to sustainability by establishing an Environmental & Social Oversight Committee (E&S Committee). The E&S Committee is chaired by the President and Chief Executive Officer, and includes each of the regional Chief Operating Officers, Mine General Managers and health, safety, environment and closure leads, as well as the Group Sustainability Executive and an independent sustainability consultant. The E&S Committee meets each quarter to review the Company's sustainability performance and compliance with its sustainability policies, as well as to identify concerns and opportunities at the Company's operations at an early stage. The President & Chief Executive Officer reviews the reports of the E&S Committee with the Corporate Governance & Nominating Committee on a quarterly basis as part of the Committee's mandate to oversee Barrick's environmental, safety and health, corporate social responsibility, and human rights programs, policies and performance.

In addition to internal controls, mine sites that Barrick has an interest in, are subject to external audits of site environmental and social performance. This includes annual independent assurance to the ICMM Sustainable Development Framework and independent audits to ISO14001.

In joint ventures (JVs) not operated by Barrick, we use our presence on the Board of Directors of the managing company to convey our expectations to management and seek to exercise influence for responsible mining practices. For example, we used our influence to encourage BNL to establish a sustainability committee of the Board. We have also encouraged BNL and other JVs to institute appropriate policies and practices regarding ethics and compliance, health and safety, environment, community relations, and human rights, among other issues. We also request immediate reporting of significant incidents to the BNL Board and regular reporting on its programs.