Rio Tinto

The Jadar Project

Water Management

Protecting precious water resources

Water is a precious resource. We must manage water resources carefully at the proposed underground mine and ensure we do not impact local supplies or the environment. It is essential that we protect drinking and irrigation sources and prevent any potential contamination from our operations.

We must be accountable for the way we manage water. This includes providing clear, accurate and timely information to the community about the amount of water we use, and the quality of water returned to the local environment.

We would take a catchment-based approach to understand the water cycle at and near the proposed operation, with its complex array of inflows and outflows. We have worked to understand the hydrological system in the area and how we can best manage our water use. We would continue to review and improve our modelling as part of the feasibility study.

Mitigation measures we would have in place

To protect drinking water sources, secure sustainable access for other local industries, such as agriculture use, manage the quality and quantity of water discharged back to the environment and maintain the right ecological environment for water dependent species and habitats, we would have set of measures in each of the process stages:

- Recycling and reuse of water.
- Mining in a zone that's isolated from the sources of water used for drinking and agriculture.
- Treating water to remove contaminants and produce the required water quality.
- Carefully managing any water that's discharged to minimise impacts and meet regulatory requirements.
- Monitoring aquatic wildlife.
- Regularly testing water and publicly reporting results.

Water sources

We would use water from three sources for our operations. Work being undertaken as part of the feasibility study would help us determine how much water we expect to use from each of these three sources.

1. Underground mine drainage

Groundwater that seeps into the underground mine would be pumped out and used at our operations. Known as mine dewatering, groundwater must be pumped from the mine to secure safe working conditions. It is a normal procedure for all underground mines around the world.

Due to its high mineralisation content, water pumped from the underground mine is not suitable for drinking water or for agricultural use. To use this groundwater as the primary water source for our processing operations, we would need to treat it at a specially designed water management facility.

Using groundwater at these depths (370-610 metres) would not impact local wells, which sit at a maximum of 20 metres below the surface. We would continue with hydro-geological modelling in order to better understand the quantity and quality of underground waters and the impacts that sourcing water from these depths might have.

2. Surface water runoff

Rainwater would be collected at the processing and mining facilities and the processing residue landfill site. This water would supplement the water collected from the underground mine dewatering.

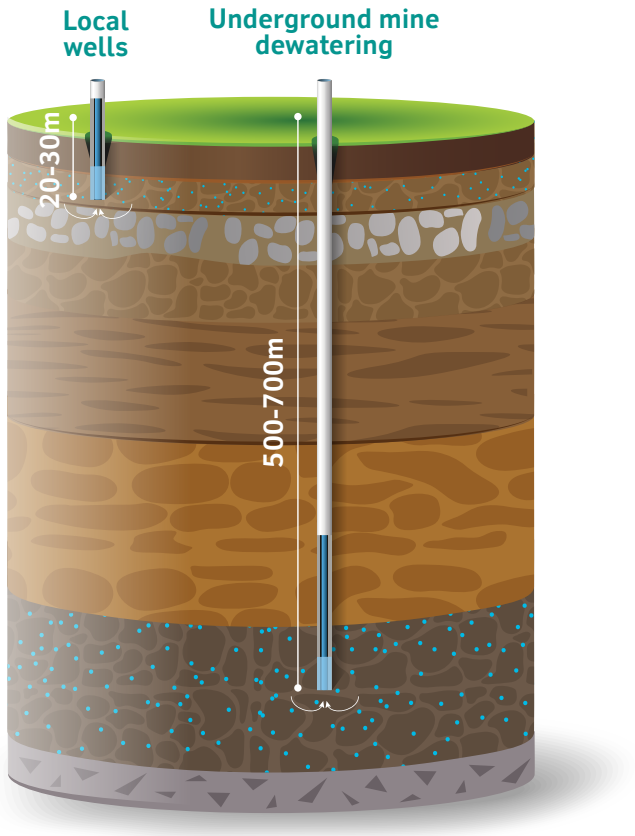
3. Groundwater formed in the alluvial sediments of the Drina River

We would source water from alluvial sediments – not the river stream – which lie underneath the riverbank near Lipnicki Sor. We would take it from areas that have been disturbed by gravel excavation in the past and are not a suitable source of drinking water. This water would supplement the water collected from the underground mine dewatering and from surface water runoff.

We continue to conduct internal studies to determine the quantity and quality of groundwater needed for the project, and to better understand any potential impacts using this water may have.

The average flow of the Drina River near where the project's proposed water intake would be located is 300,000 litres per second, and the minimum flow is approximately 50,000 litres per second.

For comparison, the Jadar Project's estimated average intake from the alluvium over the life of the underground mine is estimated at approximately 40 litres per second. As a guide, that's equivalent to around 0.013% of the Drina river's average flow. Any use of this area as a water source would be subject to necessary consents and permits, in accordance with the laws of the Republic of Serbia.



Water use and consumption targets

People are concerned that, like many other lithium mines around the world, the Jadar Project would extract lithium from brine. Brine operations involve pumping large amounts of water into ponds above the ground where the water is allowed to evaporate. Unlike brine operations, Jadar would produce lithium through a water-efficient process. It would take 8.3 litres of water for Jadar to produce one kilogram of lithium carbonate.

Jadar would not be a brine operation; instead, the lithium would be sourced from rocks buried deep underground (370-610 metres deep).

We are trying to design the Jadar Project to be one of the most water efficient mines in the world. We plan to recycle up to 70% of the water used in the processing operation.

Monitoring voda na reci Korenita, Jadar, Srbija.

Water quality

The proposed water management facility, located on the project site, would treat water to a minimum of Class II standard – the same quality as the Drina and Jadar rivers. The plant would use purification technologies such as ultrafiltration, reverse osmosis and ion exchange to produce a stable water quality. This treatment would be followed by a remineralisation stage, which would ensure the right minerals are present in the water that is discharged, so it would be ready for safe blending into the Jadar river.

The Jadar Project's proposed treated water for discharge would be required to meet both EU and Serbian water quality regulations.

Water discharge volume

We would treat water that isn't reused in a specially designed water management facility before returning it to the Jadar River. Compared with the river's overall flow, this portion of treated water would be low - at least 300 times lower than the river's average flow.
We would only expect to discharge water to the Jadar River when the site has excess water, usually associated with higher rainfall periods leading to excess surface runoff, which will coincide with higher flows in the river.

Catchment ponds

On-site, we would have several catchment ponds. Runoff and waste rock dump ponds are sized to accommodate a 1-in-a-100-year, 24-hour rain event. The Process Water Pond receives only incident rainfall, so the risk of overflow would be extremely low.

The pond design includes emergency spillways to discharge the water into the Korenita River if stormwater inflows exceed the design capacity of the ponds. Analysis of these extreme events indicate that the emergency release of pond water would not have a negative impact on the flows or water quality in the Korenita River.

Hydrological studies

Multiple hydrological studies on flooding were completed to provide the bases for the Jadar Project design. The latest document related to flood modelling on the Jadar River was finalised in October 2022. That study analysed the impact of various construction scenarios of the planned Jadar Project infrastructure on the flow regime of the Jadar river and its tributaries. The project water design and protective embankments are modelled to be safe for a 1- in-1000 years flood event, which exceeds the standards set by Serbian legislation. Both the processing plant and mine facilities would be on the elevated ground out of the flood zone and would not significantly affect the flow regime of the high waters of the Jadar River, nor significantly affect floodings downstream from the project. The impact of the planned infrastructure on the flooding of the Jadar Valley is negligible for all analysed fows. In the case of the floods that happened in May 2014, the modelled water design has been determined to be safe.

Water testing and monitoring

At a minimum we would monitor the Jadar, Korenita, Stupnicka and Lunjevac rivers for surface water parameters including water levels, flow rates, quality and river sediments throughout construction, operation and closure. We would also monitor groundwater, both shallow and deep, during construction and operations in and around the project site. We understand there are concerns about the transparency of monitoring results. In collaboration with the local community, we would establish a joint monitoring group, which would include members of the community and independent experts to monitor water quality during our operations. We would publish our monitoring results on the project website.

Global and industry standards we abide by:

- International Council on Mining and Metals (ICMM) Statement on Water Stewardship: we report against the ICMM's water stewardship statement annually, including demonstrating strong and transparent water governance, managing water at operations effectively, and collaborating to achieve responsible and sustainable water use.

For more information about Rio Tinto's water stewardship policies and standards, visit riotinto.com

Water studies:

- Hydrologic study on the Jadar River within the zone of a future water supply intake (Jaroslav Cerni Institute for the Development of Water Resources)
- Hydrotechnical study – flood protection and flood zones in the Jadar River Valley (Jaroslav Cerni Institute for the Development of Water Resources)
- Preliminary hydrogeological study of protection of the spring by the church in Gornje Nedeljice village (Faculty of Mining and Geology, University of Belgrade)
- Jadar Project water supply study (Jaroslav Cerni Institute for the Development of Water Resources)
- Surface and groundwater monitoring reports four times per year since 2015 on Jadar and Korenita licence (Jaroslav Cerni Institute for the Development of Water Resources)
- Wastewater discharge study (Jaroslav Cerni Institute for the Development of Water Resources)

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Jadar Project

The Jadar Project in Serbia is one of the largest greenfield lithium projects in the world. Jadar has the potential to produce battery-grade lithium carbonate, a critical mineral used in batteries for electric vehicles and storing renewable energy. In addition, Jadar would produce borates, which are needed for the development of renewable energy equipment such as solar panels and wind turbines.

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