



MANAGEMENT
APPROACH
DISCLOSURE

WATER AND EFFLUENTS

6 CLEAN WATER
AND SANITATION



Water and Effluents*

Related GRI Contents	103-1; 103-2; 103-3
Related Sustainable Development Goals	SDG 6
Related Performance Data	Environment
Other related documents	Sustainable Development Policy ; Environmental Policy
Future Commitments	+ Design and implement the plan to conform to the UN Global Compact CEO Water Mandate at Olaroz Lithium Facility.
Related Material topics	Water Extraction and Basin Management

Strategic significance

Ensuring long-term water availability is a critical consideration for companies across all industries particularly given changing climatic conditions and increasing demands on the world's scarce natural resources.

The Olaroz Lithium Facility is located in a region classified by the [WRI Aqueduct Tool](#)¹ as having low water stress and low overall water risk. This classification is not projected to change through to 2030, even based on the most pessimistic climate forecast scenario. This sets our operations apart from those in areas classified as high water stress such as the Atacama region of Chile. The Olaroz Lithium Facility does not draw on surface water or fresh groundwater.

There are two sources of water extraction at the Olaroz Lithium Facility Operations.

- 1. Brine Extraction:** Saline solution (brine) is extracted from bores and pumped into evaporation ponds. Brine has a salt concentration of ~330g/L (sea water has 36g/L) so is far too saline to be considered a water resource.
- 2. Industrial Groundwater:** the lithium carbonate production process and technology have one of the lowest water consumption ratios in the industry. Approximately 95% of the groundwater extracted is treated for use in the production process, while the remaining 5% percent is used to maintain access roads and other infrastructure, to support camp activities or to provide suitable living conditions for the Company's workforce.

Our Borax Argentina operations are carried out at three sites, two of which (Tincalayu and Sijes mines), are located at approximately 4,000m elevation in the Puna with the third site at Campo Quijano, approximately 1500m above sea level.

The Tincalayu site comprises an open cut mine where tincal ore is mined and a plant where the tincal ore is processed to produce borax chemicals. Water for use in both industrial and domestic (toilets and general cleaning only) purposes is extracted from the Vega Chuculaqui and Vega Bequerville surface sources with licenses approved by the provincial government.

The Sijes mine is in the Pozuelos - Pastos Grandes basin and comprises an open cut mine to extract the hydroboracite ore and a concentrator where the ore is upgraded to a variety of hydroboracite mineral concentrates. The beneficiation processes implemented at this site do not require water and the only water extraction that occurs here is for domestic purposes at the camp.

The Campo Quijano facility is located on the edge of the town of Campo Quijano. The Campo Quijano plant uses the water utility network for domestic consumption, and a groundwater well for industrial use. The water quality at the Campo Quijano plant is monitored on an ongoing basis, both upstream and downstream from our operations. These sites are all currently classified in a region with low water stress and low overall water risk by the [WRI Aqueduct Tool](#).

For Orocobre, ensuring responsible, efficient, and transparent management of water resources is essential to maintain our social licence to operate in the region. We recognise that access to clean water and sanitation is a long-standing development issue in some local communities. While operations do not impact negatively on this, Orocobre acknowledges the unique opportunity to help address this issue through targeted programs and initiatives.

(*) This Document is part of Orocobre's Sustainability Report and should be understood as part of itself.
Understanding Sales de Jujuy as Sales de Jujuy S.A., SDJ or Olaroz Lithium Facility and Borax Argentina as Borax Argentina S.A or BRX.

¹ <https://www.wri.org/aqueduct>

Impact boundary

This management approach disclosure refers to the activities of both Sales de Jujuy S.A. (Olaroz Lithium Facility) and Borax Argentina S.A.

Orocobre does not report on supplier performance with regards to water consumption. However, total consumption figures reported include supplier related activity on site (excluding water for human consumption which is purchased and transported onto site).

Information relating to mineral process waste and storage facilities is included in the [Waste Management Approach](#) disclosure.

Access to clean water and sanitation in local communities is treated independently from the Company's operational management of water resources. Detailed information regarding performance in this area can be found in the [Community Investment](#) disclosure.

Management approach

As part of Orocobre's commitment to advancing on the UN's Sustainable Development Goals, and in line with [SDG 6: Clean Water and Sanitation](#), the Company is constantly seeking to: 1) increase water-use efficiency, and 2) protect water-related ecosystems.

The following policies outline Orocobre's commitment to water and effluent management:

- [Environmental Policy](#)
- [Sustainable Development Policy](#)

The company is also planning to align with the [CEO Water Mandate](#), which is a UN Global Compact initiative promoting action across six key elements: direct operations, supply chain and watershed management, collective action, public policy, community engagement and transparency.



Management Systems

Both Orocobre's operations have an ISO certified Environmental Management System (ISO14001) which sets out the approach to water and effluent management. The Company regularly reviews opportunities for consumption reduction as part of our continuous improvement program which allows all employees and site-based operators to propose opportunities for improved performance across all aspects of operations.

Olaroz Lithium Facility does not discharge water into surface water sources. Effluents are treated and reused on-site or transported to a treatment plant in the province of Jujuy. Managing effluents on-site more efficiently makes it possible to increase the amount of water to be reused for road construction and maintenance and to significantly reduce groundwater extraction.

Borax Argentina implements different processes to treat effluents:

- In Tincalayu, domestic effluents are treated using a system of chambers and biodigesters, and then discharged through combs (sand-based filtering tubes) on a filter bed (soil). The parameters for these effluents are within allowable limits.

- The treatment system implemented in Sijes uses septic tanks. A compact effluent treatment plant will soon be installed to improve quality before discharging into Sijes River. The Sijes River and its related habitat are within two reserves of provincial jurisdiction set by executive order, which do not have any waste requirements defined by the authorities. However, Borax Argentina internally implements actions aimed at protecting the surrounding biodiversity and impacting as little as possible on the existing ecosystem.
- In Campo Quijano, although located in an urban area, there is no sewage service and domestic effluent is managed through a traditional septic tank system with external waste emptying services when required.

Monitoring and Reporting

Orocobre evaluates the effectiveness of its management approach through regular monitoring and reporting of key data metrics and tracking progress against predefined objectives and targets. Internal data and reporting processes include daily operational updates, weekly operational performance reviews and monthly reporting on progress against operational targets.

Olaroz Lithium Facility started operating in 2015 and has been continually improving the structure and management of water data to enable more detailed insights into consumption patterns. Water performance is reported annually in the Orocobre [Sustainability Report](#) and also in response to investor surveys such as S&Ps Corporate Sustainability Assessment (formerly DJSI/RobecoSAM) and the CDP Water Disclosures.

In Borax Argentina the quality of surface and underground water as well as of the industrial and domestic waste water is monitored on an annual basis. These reports are submitted to the Office of the Secretary of Mining. FY20 is the first year that we have included key environmental performance indicators for Borax Argentina in Orocobre's [Sustainability Report](#).

Short, medium, and long-term reduction targets are defined and monitored by Orocobre's Executive team in collaboration with the relevant operational teams.

Responsibility

For Olaroz Lithium Facility, at an operational level, responsibility for water extraction initiatives and the maintenance of local water ecosystems sits with the Director of Hydrogeology. The Chief Operating Officer has responsibility for water consumption and operational efficiency, including the evaluation and implementation of reduction initiatives.

The Risk Management Manager monitors water performance and works in close collaboration with other departments including (Hydrogeology, Processes and Strategic Projects) to identify and evaluate opportunities for performance improvement.

For Borax Argentina the Production Superintendent and the risk management areas are responsible for measuring the consumption and extraction of water from underground, surface, and utility sources.

Accountability

In accordance with the commitments defined in the CEO Water Mandate, the Company is integrating KPIs into the performance evaluation process for specific managers and employees at an operational level.

Orocobre's Executive performance assessment processes are also being reviewed to incorporate water-related performance into their short term and long-term incentive criteria.

FY20 update

SALES DE JUJUY (Olaroz Lithium Facility)

In FY20 total industrial water extraction was 678,353 m³, approximately 13,000 m³ less than in FY19.

Operational water intensity (i.e. the amount of water extracted exclusively for operations per ton of lithium carbonate produced) improved considerably with a reduction from 48.16 m³/t to 43.00 m³/t.

Before the COVID-10 pandemic, there was a significant increase in the number of personnel on site due to the increase in activities associated with the Phase 2 Expansion project. Olaroz Lithium Facility has therefore been ensuring adequate site-based infrastructure is in place to manage the additional effluents generated.

Aproximately 111,190 m³ of industrial water were recirculated and reused. This represents 16.4% of the volume of water extracted.

During FY20, the sewerage treatment plant (STP) reached optimum operation. An engineering study was also completed for the installation of a new sewage system designed to improve the quality of the effluent entering the treatment plants.

Progress was made with the installation of sixteen flowmeters in the operating area. The flowmeters will improve the quantification and collection of consumption data, and the evaluation and implementation of new water saving technologies and process improvements to reduce operational water intensity. In addition, electrical retrofits were made ready to complete the mechanical assembly of 30 flowmeters that will be installed in February 2021.

INDICATOR	Preliminary targets	
	FY25	FY30
Operational Water Intensity (m ³ /t LCE)	< 45	< 35
Effluents treated on site	100%	100%

In FY20 52% of waste water effluents were treated on site. This value is calculated as difference between the amount of effluent taken to final handling in San Salvador de Jujuy and the total injected into the treatment system at Olaroz Lithium Facility. Data available for approximately 4 months from stage 2 (expansion project).

Annual performance data is available on the Orocobre [website](#).

BORAX ARGENTINA

During FY20, Borax Argentina's Operations and Strategic Project Management groups have been evaluating water and effluent reuse, recirculation, and treatment options to manage this resource more efficiently.

Domestic Effluents

In monitoring performed in FY20, BOD (Biological Oxygen Demand) and COD (Chemical Oxygen Demand) values were within the limits set forth in Resolution 011/01 issued by the Office of the Secretary of Environment of the province of Salta. In addition, a study was carried out in Sijes field, where samples of phytoplankton, phytobenthos and zooplankton were analysed. The algal community of the surface bodies analysed showed the species richness and composition are typical of environments of the Puna and the High Andes, with no signs of pollution.

The Sijes River receives effluents in full compliance with the applicable environmental laws. A description of how these impact on this water body is included below:

No	Detail	Description	Measurement
1	Surface	Area occupied by the surface water body from discharge to the infiltration area.	1.19 ha
2	Course	Distance from discharge to the infiltration area	1.66 km
3	Surface	Area occupied by the distal portion of the river infiltration in Sijes river lower basin	51,43 ha



Monitoring

Water and effluent quality monitoring are performed on an annual basis and the reports are submitted to respective provincial mining authority. The first semi-annual monitoring (previously performed on an annual basis) was scheduled for the second half of FY20. The monitoring will involve people from the local Community. Due to COVID-19, this activity has been delayed in the reporting period.

For additional information on water and effluents, see [Environmental Performance Data](#).