THE GLOBAL RUSH FOR GREEN MINERALS

LITHIUM AND URANIUM RESEARCH IN PUNO
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This report has been drafted by Human Rights and Environment (Derechos Humanos y Medio Ambiente - DHUMA) and Earthrights International (ERI). Information gathering was carried out through a combination of literature review and fieldwork on the Macusani and Falchani mining projects in Puno-Peru, including interviews with some representatives of the communities and grassroots social organizations in the impact zone of the projects. These lithium and uranium projects, carried out by Canadian parent companies, are lucrative, large-scale, and respond to global pressure for “green minerals” and “clean energy”. At the same time, they threaten to generate serious environmental, cultural, and health impacts, as well as the violation of the collective rights of indigenous communities, peoples, and nationalities that are in their potential zone of direct and indirect influence. There are indications that those who are or will be primarily affected do not have clear and accurate information about the mining projects, their potential impacts, and the main actors involved. In addition, both projects are taking place in areas that lack strong environmental governance and capacity to address existing mining-related damage and conflicts. In this context, this report aims to provide clear and accurate information on the projects being carried out. In doing so, we hope that communities will be able to use this information to make better informed decisions that safeguard their rights and well-being and to exercise their self-determination. We hope that this report will contribute to the work of civil society organizations, the Peruvian State and international bodies to ensure that the rush for “green minerals” does not become yet another chapter in which mining companies and States violate the rights of communities and further damage our planet and cultural heritage in the name of saving it.
The extraction of lithium and uranium in Puno cannot be understood without considering the major international political and economic scramble over “green minerals”. The decisions of transnational corporations and major global investors have an impact on the local lives of those who reside in the territories where these resources are extracted. Global dynamics have repercussions for national and regional policies, and regulatory frameworks aimed at guaranteeing extractive activity. All these new frameworks as well as the mining activity itself, affect the environment and communities. This makes the discussion on the control and management of natural resources a central issue3.

Lithium

Lithium is a light mineral that has a high energy storage capacity, making it useful in the manufacture of batteries used in electric mobility and in places with energy matrices with greater contributions from solar and wind energy4.

1.1. Global pressure for the extraction of “green minerals” and clean energy

Increasing the share of renewable energy in global energy production is vital for curbing global emissions generated by burning fossil fuels. People around the world are mobilizing to move away from fossil fuels and embrace a green economy. In the view of many, we will solve the climate crisis when we are able to fully embrace renewable energies, such as wind and solar, and when we increase the use of electric vehicles, among other key measures. This paradigm shift has led some minerals, such as lithium and uranium, to become highly relevant and be labeled as strategic or critical for the energy transition.

Although lithium has historically had different uses, its inclusion in batteries is what ultimately drove the increase in international demand of the last decade. Demand for lithium is expected to increase exponentially through 2030, with electric vehicles expected to account for more than 70% of that demand5. The International Energy Agency (IEA) estimates that 13% of new cars sold in 2022 will be electric, and reaching a Net Zero Emissions Scenario in 2050 is based on the assumption that electric vehicles will account for 60% of new car sales6. In 2019, lithium demand was about 320,000 tons and is expected to reach 1 million in 2025 and 3 million in 2030. IEA analysis estimates that, based on existing mines and projects under construction, only half of the projected lithium need will be met by 20307.

Lithium is an abundant mineral that is present in hard pegmatite rocks, petroleum, geothermal reservoirs, clays, continental brines, and marine salt water8. The best ways to extract lithium are from brine and hard rock deposits. In brine, saline water is pumped underground, and the dissolved lithium is extracted; in hard rock deposits, the ore is extracted and processed from granitic rocks9.

The main lithium reserves in brine are found in Argentina, Bolivia and Chile, and the largest reserves of lithium in rock are in Australia and China10. The most popular forms of commercialized lithium are lithium carbonate, lithium hydroxide, burl lithium and lithium chloride11. As demand has grown, lithium carbonate and lithium hydroxide prices have risen by 413% and 254% respectively, since the beginning of 202112. The main demand comes from countries such as China, South Korea, Japan, the United States, and Belgium, mainly to satisfy the production of batteries used in electric cars sold in China, Europe, and North America. Only 4% of electric vehicle sales take place in the rest of the world13.

Although Australia is currently the world’s leading lithium producer, the largest amount of lithium resources and reserves on earth are found in the South American Andean region between Argentina, Bolivia, and Chile, representing 52% of total resources and 62% of total reserves14. Due to the need to secure supplies for the future should political and technological decisions continue in the same direction, attention has focused on the Andean salt flats, including the Salar de Uyuni in Bolivia, the Salar de Atacama in Chile, and additional salt flats in the Punta de Atacama in Argentina. Chile has the largest lithium reserves in the world with 9.2 million tons, while Bolivia has the largest amount of lithium resources: to date, it holds 21 million tons15. Argentina has 19.3 million tons of lithium resources and Chile, 9.6 million16.

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5 Reuters (August 26, 2020). Electric cars to account for 79% of lithium demand by 2030: Chile | Reuters


9 Pegmatite is a coarse-grained intrusive igneous rock formed from crystallized magma in the interior of the earth’s crust, which can contain extractable quantities of a number of elements, including lithium, tin, tantalum and niobium. (Lithium Market Profile, United Mexican States, 2020). See at: https://www.gob.mx/cms/uploads/attachment/file/564104/Lito__2020_EN.pdf


12 Ibid


17 Ibid

18 Ibid

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This means that almost all of Chile’s lithium resources are, in theory, extractable.

Uranium

Uranium is a radioactive element found naturally in the earth’s crust. It is more abundant than gold, silver or mercury. Uranium is used almost exclusively to produce electricity; over the past 60 years it has become one of the world’s most important energy minerals. Some 440 reactors require about 74,000 tons of uranium oxide concentrate each year, and the removal of a large amount of residual rock. When uranium is found at a greater depth, subterranean mining is used, which involves the construction of shafts and tunnels. Conventional mines have a mill where the ore is crushed, ground and leached with sulfuric acid to dissolve the uranium oxides. The uranium is then separated by ion exchange. The treatment process is usually more complex.

The uranium market is expected to grow over the next ten years. The “baseline scenario” of the 2021 edition of the World Nuclear Association’s Nuclear Fuel Report shows a 27% increase in uranium demand over the period 2021-2030, and a 38% increase in uranium demand for the decade 2031-2040. Given that electricity demand in 2040 could increase by around 50% over 2019 (according to the International Energy Agency’s World Energy Outlook 2020 report), a growth in nuclear capacity is likely, especially in a world seeking to limit greenhouse gas emissions. The main growth in uranium demand is coming from Russia and China; these states have sought stakes in uranium mines abroad.

In 2021, uranium mines supplied about 48,303 tons of uranium, which met 77% of the annual needs of energy companies. About two-thirds of the world’s uranium production comes from mines in Kazakhstan, Canada, and Australia. Peru has never produced uranium, but, according to the 2016 edition of World Distribution of Uranium Deposits, it has 33,400 tons of identified recoverable uranium resources, largely formed by volcanic deposits such as those near Puno.

1.2. Global pressure for the extraction of “green minerals” reaches Puno

The need to meet global demand for “green minerals” has led to an expansion of the search for such minerals. In Peru in 2018, the press reported the discovery of 2.5 million tons of high-grade lithium resources and 124 million pounds of uranium in the Puno region. Subsequently, a preliminary technical-economic report completed in 2020 estimated the indicated lithium resources at 60.92 million tons and the inferred lithium resources at 260.07 million tons.

20 Ibid
21 Ibid
22 Ibid
25 Ibid
26 Ibid
28 DRA PACIFIC & PLATEAU ENERGY METALS INC.

Likewise, the most recent preliminary technical-economic report on the amount of uranium puts the figure at 130 million tons of inferred resource and 95.2 million tons of indicated resource. It should be noted that neither lithium nor uranium mineral reserves have yet been established in the area. These would correspond to the economically exploitable part of the indicated mineral resource, which are estimated through an economic evaluation pursuant to a pre-feasibility or feasibility study of a mining project.

However, these findings suggest that the project could be one of the largest lithium mines discovered to date in the world. In this case, and unlike the other countries in the region, lithium was identified in rock as opposed to brine. The presence of uranium in the Peruvian lithium deposit also marks a key difference with the lithium resources located in the Atacama (Chile) and Salar de Uyuni (Bolivia) salt flats, whose extraction process is not linked to radioactive minerals. Although the companies involved claim that there is lithium without uranium in Puno, the Ministry of Energy and Mines of Peru has expressed doubts regarding these claims, suggesting that the extraction could be complex due to the presence of uranium, which

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13. The rush to prioritize lithium extraction without a national and local regulatory framework threatens to repeat the same problems and impacts produced by traditional mining

In light of the global pressure for the exploitation of “green minerals” and the discovery of large lithium deposits in Puno, the Peruvian state launched an effort to facilitate the extraction and development of a national lithium industry. Although the government has announced its intention to prioritize the exploitation of lithium within the country, it has not established a specific regulation that takes into account the rights of communities and the environmental, cultural, and health risks that its exploitation threaten much less a framework that takes into account the fact that lithium and uranium (radioactive mineral) are found together in Puno.

On March 11, 2021, the Regional Council of the Regional Government of Puno issued the Regional Agreement No. 039-2021-GRP-CRP, which states that Puno is currently “blessed by Lithium”, and that regarding the enormous lithium reserve at Macusani, there is an urgent need for legal regulations for its extraction. It recognized that bills had been presented to regulate activities related to radioactive minerals, such as uranium, thorium, and radium, and that the lithium found in the region may be accompanied by these radioactive minerals. For that reason, the Regional Government urged the Congress of the Republic and the Ministry of Energy and Mines to incorporate in the next “Law of Lithium, Uranium, and its derivatives” the participation of the State, the private sector and the population in the extraction of the strategic resource for its sustainable use.

On July 15 of that same year, the Congress of the Republic published Law No. 31283, which declared that the exploration, extraction, and industrialization of lithium and its derivatives was of public necessity and national interest, without including any mention of uranium.

Furthermore, it instructed the Executive Power to enact regulations within 60 calendar days. Law No. 31283 followed the approval of the Preliminary Opinion of Bills No. 6195 and 7039 by a majority of the Energy and Mines Commission of the Congress of the Republic.

Earthrights International submitted requests for information eleven months after the approval of Law No. 31283. Despite the time that has passed, the Ministry of Energy and Mines, the Ministry of the Environment, and the Supervisory Agency www.leyes.congreso.gob.pe/Documentos/2016_2021/ADLP/31283-LEY.pdf have not established a specific regulation that takes into account the rights of communities and the environmental, cultural, and health risks that its exploitation threaten much less a framework that takes into account the fact that lithium and uranium (radioactive mineral) are found together in Puno.

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The rules and regulations approved by the executive and the legislative branch only prioritized the industrialization and extraction of lithium and failed to provide measures to mitigate the impacts of this activity in accordance with appropriate environmental standards. Likewise, they did not discuss the importance of having an adequate normative framework for the regulation of lithium associated with uranium. Even the goal of industrialization seems to be in question. According to the general director of Macusani Yellowcake, this goal will be
defined along the way, because investors want what is fastest and without major problems 44.

In addition, in the context of the most recent presidential elections, the candidates of the various political parties - including the elected president of the Republic - joined the call for the industrialization and extraction of lithium in Puno.

In short, the Peruvian State has issued regulations that prioritize the extraction of “green minerals” without taking into account the rights of the communities and the environmental, cultural, and health risks that could threaten their life and integrity.

1.4. The lack of capacity to address mining-related environmental and health issues in Puno is not new

In addition to the deficiencies and regulatory gaps in the extraction of lithium and uranium, the exploitation of these minerals takes place in a context in which there is an inadequate system of supervision and environmental and human health protection at the departmental and national levels. This has meant a lack of control and vigilance in terms of mitigating and demanding the remediation of the damage caused by small and large-scale mining. It has also implied a lack of prevention and subsequent care for people exposed to heavy metals, who in turn suffer serious impacts on their health and lives resulting from these activities.

In 2020, according to data from the Ministry of Energy and Mines, the Puno region ranked third on the list of regions with the highest number of Mining Environmental Liabilities (PAM by its Spanish acronym)45 in Peru. According to the Environmental Liabilities Report issued by the Comptroller of the Republic, as of 2020 the Puno region had about 921 PAMs, which represents 11.6% of the total of 8000 PAMs46.

In 2021, according to DHUMA’s analysis of the inventory of mining environmental liabilities47 contained in R.M. No. 200-2021-MINEM/DM, the Puno region has 916 PAMs. Of these: 1) the generator of the PAM was only known in 72 cases; 2) only 272 PAMs were subject to remediation by those responsible; and 3) and only 180 PAMs had environmental studies for their closure or remediation. In other words, according to the data processed by DHUMA, the majority of PAMs do not have information on the generator, the responsible party, or environmental studies for their closure or remediation.

Within the above framework, it is also important to highlight that in 2017, the National Water Authority pointed out that the PAMs that affect or impact the water quality are the mines with acid water drainage, the clearings whose surfaces are exposed to rain and that generate acid water drainage during the rainy season (January-March); and the abandoned tailings, which are eroded during the rainy season and whose material (failing) is transported to the surrounding water bodies48.

According to DHUMA, of the PAMs in the Puno region in 2021, there were a total of 597 PAMs with the subtype of mines, waste clearings and tailings. This means that 65% of the identified PAMs in Puno could represent a high and very high risk to the environment, water, fauna, flora, and people.

“In Peru, identifying and making the responsible party of a PAM is an expense in time, energy, and investment on the part of the State, because the responsible party cannot be identified and therefore there is no one to assume the costs of remediation [of PAMs]49, or the responsible party is not able to bear the remediation obligations50. Therefore, it can be concluded that the problem with the identification of responsible parties and generators is a national problem: according to Table No. 01, PAMs with no generator identified make up 90-100% of total PAMs nationwide, while parties responsible for remediation have been determined in only 66-70% of the cases.

It should not be forgotten that ‘the main obstacles for the remediation of [Environmental Mining] liabilities are the impossibility of identifying those responsible for the abandoned mines, and the need for more resources for remediation. This is because

Table 1

<table>
<thead>
<tr>
<th>Category</th>
<th>2018</th>
<th>2020</th>
<th>2021</th>
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</thead>
<tbody>
<tr>
<td>Generator identified</td>
<td>0</td>
<td>616</td>
<td>564</td>
</tr>
<tr>
<td>Generator not identified</td>
<td>8794</td>
<td>7340</td>
<td>7104</td>
</tr>
<tr>
<td>Responsible party identified</td>
<td>2571</td>
<td>2477</td>
<td>2539</td>
</tr>
<tr>
<td>Responsible party not identified</td>
<td>6223</td>
<td>5479</td>
<td>5129</td>
</tr>
<tr>
<td>Total PAMs identified</td>
<td>8794</td>
<td>7956</td>
<td>7668</td>
</tr>
</tbody>
</table>

Puno’s Ombudsman’s Office has made clear, “the presence of heavy metals, metalloids and other chemical substances in the environment is a reality in Peru. The causes are diverse, and can be of natural


43 Translation by author. Bailetti, G. (2009). Nuevas soluciones para el manejo integral de los PAM. Documento de gobernanza para el manejo integral de los PAM. Documento de gobernanza para el manejo integral de los PAM.

ciencia/16.08.2021.pdf


48 Translation by author. Bailetti, G. (2009). Nuevas soluciones para el manejo integral de los PAM. Documento de gobernanza para el manejo integral de los PAM. Documento de gobernanza para el manejo integral de los PAM.

49 It should not be forgotten that ‘the main obstacles for the remediation of [Environmental Mining] liabilities are the impossibility of identifying those responsible for the abandoned mines, and the need for more resources for remediation. This is because when it is not possible to identify a responsible party, it is the State that is responsible for remediation” 50.


51 It is worthwhile recalling that to determine the areas of danger of exposure for the population, the following sources of contamination are taken into consideration: (i) environmental liabilities; (ii) active mining units; (iii) socio-environmental conflicts; (iv) biological monitoring of individuals; (v) and the presence of heavy metals in water for human consumption52.

As Peru’s Ombudsman’s Office has made clear, “the presence of heavy metals, metalloids and other chemical substances in the environment is a reality in Peru. The causes are diverse, and can be of natural

52 Ibid.
or anthropogenic origin, i.e., due to human action, including productive and extractive activities, whether formal, informal or illegal53).

In addition, the Directorate of Prevention and Control of Non-communicable, Rare and Orphan Diseases (Denoit) of the Ministry of Health (Minsa) has recently indicated that this risk of population exposure falls on an estimated 10,162,380 inhabitants, equivalent to 31.15% of the estimated national population in 2020.

According to Minsa figures, 84% of the cases of people exposed to heavy metals were children between 0 and 11 years of age. This situation is worrisome due to the high vulnerability of this group.

The development and cognitive abilities of this population sector will be affected.

53 Ombudsman’s Office (December 2021). En defensa de las personas expuestas a metales pesados, metaloides y otras sustancias químicas tóxicas: los impactos de la contaminación ambiental. Lima, Perú.

The department of Puno ranks first in cases of anemia in children between 6 to 35 months, eighth in terms of the percentage of population exposed to metals and metalloids (716,246) and third in the number of PAMs (916). Maternal anemia is associated with increased maternal and infant morbidity and mortality, including risk of miscarriage, stillbirth, prematurity and low birth weight54. The WHO mentions that if anemia is not reduced worldwide, millions of women will suffer a decline in their health and quality of life for generations to come. Despite this, there is an attempt to promote the exploitation of minerals such as lithium and uranium, when none of the problems mentioned above, linked to extractive activity, has been addressed.

Likewise, it must be noted that, in 2016, the National Water Authority had already warned of the need to pay attention to water pollution in the Puno region.


Thus, in the 2016 report “Prioritization of Basins for Water Resources Management”55, it is noted that nine (09) of the thirteen (13) basins that make up the Titicaca watershed were identified as high or medium priority areas for the attention of the National Water Authority.

Among the main reasons for their categorization are: a) high pollution levels, b) social conflicts, c) water scarcity, and d) hydrological, environmental, social and economic impact. In this report, the Inambari and Urubamba watersheds, belonging to the Amazon Hydrographic Unit, were registered as high priority, in addition to the Azángaro watershed, belonging to the Titicaca Hydrographic Unit.

In this environmental context, it is also important to highlight that the people in the direct and indirect spheres of influence of the mining projects and of the PAMs suffer permanent violations of their right to a healthy environment. For this reason, there are permanent socio-environmental conflicts, according to the Ombudsman’s Office56.

In short, in the department of Puno there is no adequate environmental control and monitoring system in place to mitigate and remedy the environmental damage that mining companies have caused to date. This situation could worsen if lithium and uranium exploitation is allowed without a normative framework that provides adequate control and oversight by the local and national government.


2. Lithium and uranium mining in Puno: The Macusani and Falchani projects risk repeating old problems

2.1. Companies involved in lithium mining in Puno: American Lithium, Plateau Energy and Macusani Yellowcake

Since May 2021, the Macusani and Falchani projects have been owned by the Canadian company American Lithium, which is headquartered in Vancouver, British Columbia in Canada. The company is listed on the TSX Venture Exchange in Canada and the OTCQB in the United States, a venture capital exchange for emerging companies. It is also listed on the Frankfurt Stock Exchange in Germany. American Lithium has actively participated in lithium exploration since April 2016. Its shareholders are a mix of institutional investment firms, the company’s board of directors and management, as well as more than 50,000 minority shareholders. The main investors are Commodity Capital of Switzerland, Ausbil of Australia, GlobeX, Primevest of the Netherlands and NewGen of Canada.


60 Ibid.
64 Primevest About Us Page: https://www.primevestcp.com/about-us
65 NewGen Home Home | NewGen Asset Management (newgenfunds.com)

2.2. Companies involving the Falchani and Macusani projects in Puno: American Lithium, Plateau Energy and Macusani Yellowcake

American Lithium owns the Falchani and Macusani projects through a corporate structure that includes its subsidiary Plateau Energy, based in Toronto, Ontario, Canada, and its Peruvian subsidiary Macusani Yellowcake S.A.C. In May 2021, American Lithium acquired 100% of Plateau Energy, and as a result of the acquisition, Plateau Energy is now a wholly owned subsidiary of American Lithium. Plateau Energy Metals, like many junior mining companies, identified the mineral reserves and then sold them to another mining company, in this case American Lithium.

As a result of the acquisition, American Lithium now has three main properties: 1) the Toponah Lithium Claim (TLC) project in Nevada, USA; 2) the Falchani lithium project in Puno, Peru; and 3) the Macusani uranium project in Puno, Peru. The TLC project is located 6 miles northwest of Tonopah, Nevada, in Big Smoky Valley, located in one of the world’s least-developed sedimentary lithium basins, in an area that has several other mining projects. The identified lithium deposit is a three-and-a-half-hour drive from the Tesla Gigafactory.

The company promotes its projects as a contribution towards helping the United States achieve energy independence and breaking China’s stronghold on the lithium supply chain. It claims that its lithium projects will respond to a growing global demand for the metal for electric vehicles, advanced robotics, renewable energy and information technology.


71 Ibid
72 American Lithium. (June 15 2021) Corporate Presentation. p. 22-25 https://americanlithiumcorp.com/wp-content/usp...
The mining company also presents its projects as an alternative for societal change towards a new, safe and sustainable energy model, and in the case of the projects in Peru, it speaks of clean energy for the Americas. The companies involved have a total of 151 mining concessions under their control, covering an area of 93,000 hectares. They are primarily located in the Macusani plateau in the province of Carabaya, in the Macusani and Corani districts of southeastern Peru, in the Andes Mountains, an area that has been actively explored since the 1980s for uranium and, more recently, lithium.

The Falchani Lithium (lithium) and Macusani Uranium (uranium) mining projects are among these concessions. See Map 1 for the location of the relevant concessions in Peru and the region.

### 2.2. The mining projects: Falchani and Macusani

The companies involved have a total of 151 mining concessions under their control, covering an area of 93,000 hectares. They are primarily located in the Macusani plateau in the province of Carabaya, in the Macusani and Corani districts of southeastern Peru, in the Andes Mountains, an area that has been actively explored since the 1980s for uranium and, more recently, lithium.

#### 2.2.1. Falchani (lithium)

According to American Lithium, the net present value of the Falchani project is US$1550 billion, with an internal rate of return of 19.7%, and with a mine life of 33 years. According to the Falchani Project’s Preliminary Technical-Economic Report, it will be an open pit mine using conventional truck and shovel mining methods with drilling and blasting to break the rock mass. It is anticipated that mining operations will be carried out by a contractor-operated fleet. Operations will be conducted 24 hours a day, seven days a week and 353 days a year.

The mineral resources at the Falchani Project are comprised of the two concessions shown in Table 1:

### Table 1

<table>
<thead>
<tr>
<th>Mining concession code</th>
<th>Name of mining concession</th>
<th>Date granted</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>01002005</td>
<td>Falchani</td>
<td>13/10/2005</td>
<td>Macusani Yellowcake S.A.C.</td>
</tr>
<tr>
<td>010015005</td>
<td>Ocacasa 4</td>
<td>11/07/2005</td>
<td>Macusani Yellowcake S.A.C.</td>
</tr>
</tbody>
</table>

The table includes information such as the mining concession code, name of the mining concession, date granted, and owner. The code 01002005 is associated with the Falchani project, and its date granted is 13/10/2005, with Macusani Yellowcake S.A.C. as the owner. The code 010015005 is associated with Ocacasa 4, and its date granted is 11/07/2005, with Macusani Yellowcake S.A.C. as the owner.
2.2.2. Macusani (uranium)

The Macusani project, also located on the Macusani plateau, proposes to extract the uranium on these properties using open-pit and subterranean mining methods.

The project includes 6 complexes: Corachapi, Colibri, Kihitian, Isivilla, Corani and Sayana. According to American Lithium, the Macusani uranium project has a net present value of $603 million, a rate of return of 40.6% and a mine life of 10 years.

The Macusani Project includes the following mining concessions (see Table 2):

82 Ibid. p. 37.


Table 2: Mining Concessions Macusani Project (uranium)

<table>
<thead>
<tr>
<th>Mining concession code</th>
<th>Name of concession</th>
<th>Date granted</th>
<th>Area Ha</th>
<th>Owner</th>
<th>Complex</th>
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<td>010053 005</td>
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<td>900</td>
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<td>Complex 3 - Kihitian</td>
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<td>010052905</td>
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<td>1000</td>
<td>Minergia SAC</td>
<td>Complex 4 - Isivilla</td>
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<tr>
<td>010053205</td>
<td>Lincoln XXX</td>
<td>2005</td>
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<td>Complex 5 - Corani</td>
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<tr>
<td>010342897</td>
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<td>27-Jul-05</td>
<td>500</td>
<td>Global Gold SAC</td>
<td>Complex 1 – Corachapi</td>
</tr>
<tr>
<td>010215204</td>
<td>Taititira</td>
<td>27-Jul-05</td>
<td>100</td>
<td>Global Gold SAC</td>
<td>Complex 1 – Corachapi</td>
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<tr>
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<td>Complex 1 – Corachapi</td>
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<td>11-Apr-05</td>
<td>600</td>
<td>Global Gold SAC</td>
<td>Complex 2 - Colibri</td>
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<td>16-May-06</td>
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<td>Global Gold SAC</td>
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<td>1000</td>
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<td>Complex 6 - Sayana</td>
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<tr>
<td>010092805</td>
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<td>27-May-05</td>
<td>900</td>
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<td>Complex 6 - Sayana</td>
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<tr>
<td>010086605</td>
<td>Triunfador 5</td>
<td>18-Aug-05</td>
<td>600</td>
<td>Global Gold SAC</td>
<td>Complex 6 - Sayana</td>
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<td>010072705</td>
<td>Tantamao 3</td>
<td>31-Aug-05</td>
<td>300</td>
<td>Minergia SAC</td>
<td>Complex 3 - Kihitian</td>
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</table>

2.3. Communities potentially impacted by the Falchani and Macusani Projects

The lithium and uranium mining projects are located in a geographical area of difficult access, more than 4,500 meters above sea level, in the districts of Macusani and Corani in the province of Calabaya in the department of Puno. According to the Preliminary Technical-Economic Reports of the Lithium (Falchani) and Uranium (Macusani) Projects, the areas of potential impact include the rural communities\(^{85}\) of Isivilla, Tantamaco, Cora
ni, Chimboyana, Pacaje, and Chacaconiza\(^{86}\). However, all communities have not yet been accurately identified because the Environmental Impact Assessment (EIA) is still being prepared by Aresoress y Consultores Mineros S.A. (ACOMISA), in collaboration with Anddes, an environmental consulting firm\(^{87}\). As more information on the scope and impact of the projects becomes available, the number of potentially affected communities may increase. For example, the Preliminary Technical-Economic Report for the Falchani Project does not consider Quelccaya as one of the potentially affected communities, despite acknowledging a recent discovery of lithium mineralization in that area and that the access routes to the projects consider passing through this community\(^{88}\).

The rural communities identified to date are dedicated to camelid (alpaca) breeding and some artisanal processing activities using alpaca fiber and meat, as well as agricultural activities, such as the cultivation of bitter potatoes\(^{89}\).

The rural community of Isivilla has one of the highest population growth rates in the area and was the basis for the creation of the Isivilla Population Center. In the community’s territory there is a large perennial human footprint that probably dates back to the Incas of Tahuantinsuyo. When the villagers saw this large footprint, they said: “esi huella”, which they eventually adapted to “Isivilla”, thus giving the community its name\(^{90}\). The community was recognized on December 22, 1956 with the R.S 94 and titiled on February 1, 1994, with a total of 7,804.00 hectares\(^{91}\).

The rural community of Tantamaco is located in the Macusani district and covers a total area of more than 7,000 hectares. Its name comes from the Quechua word “Thanta mamacu” which means “ragged”, “old” or “deteriorated”, and “old woman”, because one of the first inhabitants was an old woman who used to walk on her knees and was dedicated to the cultivation of “la papa ch’allasqa”, a ritual that is performed at the fall of each potato, of which there are more than one hundred varieties in the community. This is manifested in “la papa ch’allasqa”, a ritual that is performed at the family and communal level at harvest time to pray to the earth for a good potato harvest. The main guardians are the Apus\(^{92}\), the main one of which is the Apu Gregorio, who controls the destiny of the crops, letting the community members know what year will be a good and bad harvest\(^{93}\). The community was recognized on October 10, 1973 with R.J. 101-73-AC-ORAMS-VIII, and titiled on November 10, 1992. It consists of a total of 3,523.00 hectares\(^{94}\).

The community of Corani is located in the district of the same name; it is considered one of the oldest ayllus\(^{95}\) of this jurisdiction. Its name comes from the Quechua word “corca”, which means wild herbs. In Andean villages, and which are attributed with having direct influence on the vital cycles of the region they dominate.

85 Under Peruvian law, Rural Communities are legal entities made up of families that inhabit and control certain territories, linked by ancestral, social, economic and cultural ties, expressed in the communal ownership of land, communal work, mutual aid, democratic government and the development of multisecu
rollar activities.
89 Ibíd. p. 162, 172.
pología http://revistaperuanadeantropologia.com/la-ronda-cam
pesina-en-una-comunidad-quechua-en-puno-el-caso-de-tan
91 Instituto de Bien Común & Cepes. (2016). Directorio 2016 Comunidades Campesinas del Perú, Sistema de Información so
bre comunidades campesinas del Perú. http://www.dccpsucp/
wp-content/uploads/2017/06/DIRECTORIO-DE-COMUNI
DADES-CAMPESINAS-DEL-PERÚ-2016.pdf.
92 The apus, from the Quechua word for “lord”, are mountains that have been considered venerable since pre-Inca times in seve
eral Andean villages, and which are attributed with having direct influence on the vital cycles of the region they dominate.
93 Burga, M. (2012) Prácticas alimentarias durante un contexto de cambio económico: el caso de la comunidad aymara de Tam
tacam, Puno. [Thesis for the degree of Licenciado en Antropo
pucp.edu.pe/repositorio/handle/20.500.12404/1263
94 Instituto de Bien Común & Cepes. (2016). Directorio 2016 Comunidades Campesinas del Perú, Sistema de Información so
bre comunidades campesinas del Perú. http://www.dccpsucp/
wp-content/uploads/2017/06/DIRECTORIO-DE-COMUNI
DADES-CAMPESINAS-DEL-PERÚ-2016.pdf.
95 The ayllu, a family clan, is the traditional form of a community in the Andes, especially among Indigenous Quechua and Ayamar peoples.
Eventually they formalized the name as Corani. It is located at an altitude of 4,100 meters above sea level and is on both sides of the Corani River; its main economic activity is agriculture, along with the breeding of llamas and alpacas. It was recognized formally as a rural community on January 27, 1977 by R.J. 003-77-AE-ORAMS-VIII and titled on February 3, 1997 and consists of 7,875.20 hectares.

The Chacaconiza rural community is located in the district of Corani, province of Carabaya, in the Puno region, and covers an area of 8,247.52 hectares. It was recognized on June 25, 1987 with R.D 0384-87-R-A-XXI-P/DRAYAR and titled on June 11, 1997.

The rural community of Quelccaya, located in the district of Corani, province of Carabaya, was legally recognized on May 30, 1988 by R.D 0231-88-UAD-XXI-P, titled in 1987, and consists of 31,358.26 hectares. Its name comes from the Quechua word k’elccaya, which means “write now”; thus, the word K’elccaya became part of the vocabulary of the locals, to the point of giving the name to this community.

The Chimboya community was recognized on February 2, 1977 by R.J. 005-77-AE-ORAMS-VIII and titled on November 13, 1998. It consists of a total of 15,601.00 hectares. The Pacaje Community was recognized on December 17, 1959 by R.S. 50, titled on December 28, 1993, and consists of a total of 11,289 hectares.

The province of Carabaya is made up of community organizations, alpaca producer organizations, mothers’ clubs, “Milk Glass” committees (Known in Spanish as “Vaso de leche”), a social food program created to fight and prevent malnutrition in the country), food support centers and rural community patrols (rondas campesinas). Of these, the rural community patrol is the most prominent organization in the districts and rural communities. They can be seen at the entrances to a community or district and at the checkpoint gates, where members of the Rondas Campesinas record the names of visitors, vehicle license plates, destinations and reasons for visiting. Thus, the rural community patrols play the role of maintaining citizen security, and confronting criminal actions such as cattle rustling, hi-
2.4. Potential environmental, cultural, and health impacts, and infringement of collective rights

2.4.1. Culture at risk: archaeological sites

The province of Carabaya is known for being the alpaca capital of Peru, but it also stands out due to its archaeological sites and natural landscapes. In 2005 and thanks to the initiative of the agricultural engineer Rainer Hostnig, the archaeological remains of the Macusani and Corani districts were declared National Cultural Heritage by National Directorial Resolution No. 1658/INC\(^2\) of the National Institute of Culture. In 2009 it had a total area of 36,978.6451 hectares, and was named the Corani-Macusani Archaeological Landscape of Rock Paintings (Paíaje Arqueológico Pinturas Rupestres Corani-Macusani). The heritage area, as well as the location of the Falchani and Macusani projects, can be seen in the map below.

The Macusani project is clearly within the heritage area and dozens of archaeological sites are located within the project concession area. Several others are located on the Falchani project boundaries. In addition, within the delimited area, there are more rupestrian sites yet to be identified and which have yet to be incorporated into the Cultural Heritage declaration. Given the advance of the lithium and uranium mining projects in areas with archaeological sites and rock paintings, Rainer Hostnig in collaboration with DHUMA requested in May 2021 that the Ministry of Culture take the necessary actions and provide resources to review and update the delimitation of the Corani-Macusani Archaeological Landscape of Rock Paintings. Likewise, they requested the placement of boundary markers in the updated perimeter, and requested that the Directorate of Cadastre and Legal Physical Recognition of the Ministry of Culture proceed with the registration of the perimeter plan with the respective registry offices of the National Superintendence of Public Registries. As of the date of publication of this report and after more than 15 months, no response to this request has been received. For its part, Plateau Energy has been conducting an archaeological survey since 2017 with the assistance of the Peruvian Ministry of Culture. While Plateau Energy does not deny that archaeological sites exist with respect to the Macusani project, it asserts that its archaeological survey to date has demonstrated that there are no sites of cultural or archaeological significance that would affect the Falchani Lithium Project\(^3\).

However, this information is not entirely accurate because, to date, the Ministry of Culture does not have updated information, nor has it responded to the request by DHUMA and the agricultural engineer Rainer Hostnig, who is the main person responsible for the archaeological findings. Thus, the study being conducted by Plateau Energy and the Ministry of Culture may be based on outdated information that does not take into account the totality of the archaeological sites. In this regard, Hostnig, in communication with the Wayka journalistic platform, said: “I am worried that the corresponding ministries are not more concerned about finding a solution to respect and protect the archaeological rock sites, which are unique in Peru”\(^4\). In 2007, Hostnig stated that mining in the communities of Tantamaco and Isivilla would seriously and irreversibly affect the cultural heritage of Carabaya\(^5\). It is worth mentioning that Plateau Energy itself recognizes that “approximately 100 ancient rock art sites, some unique in the region, are found within the districts of Macusani and Corani...”\(^6\).

102 Direct observation, field work August 2021.

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115 Rabinowitz, A., et al. (2016). A future study should locate the exact location and nature of these mines to determine whether they have any potential impact on the Junin Greble. Additionally, the report notes that the Macusani project "may or may not be located within the restricted mining areas of the [Ministry of Energy and Mines]." According to the preliminary technical-economic reports for both projects, water for the mine would be pumped from local water sources. The technical report for the Macusani project also assumes that the open pits and waste rock dumps will remain as permanent features in its rehabilitation and closure plans, and has only allowed for limited re-grading to promote re-vegetation.

With respect to human health, when lithium dust comes into contact with skin moisture it can cause burns similar to caustic soda, and its inhalation causes irritation in the respiratory system and exudation inside the bronchi, which causes pulmonary edemas. However, at present, there are few studies that analyze the social and environmental risks of lithium in hard rock, so this needs to be presented in detail in the Environmental Impact Statement.
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118 Plateau Uranium Inc. (January 12, 2016) Macusani Project NI 43-101 Report-Preliminary Economic Assessment. GBM.


125 Translated by the author. Saldariaga, J. (October 2, 2019) Las comunidades aceptan nuestro proyecto de litio, nos falta el Water, 14(5), 296-308.

The World Health Organization recognizes that this mineral damages kidney function, and has for this reason established limits on the concentration of uranium in drinking water[120]. Other studies also indicate that the brain is affected, and exposure to uranium can lead to lower performance in cognitive tests[121]. It has also been found to be associated with cases of leukemia, due to the displacement of calcium in the blood. Workers who were exposed to radon gas, such as those found in populations near nuclear power plants in Spain, had an increased risk of developing lung cancer[122]. Furthermore, many studies reveal that uranium mining and processing areas have a higher release of this element into the environment than those under natural conditions, and that it continues after mine closure[123]. The local population that comes into contact with it is put at risk, through the consumption of water, food and inhalation of air[124]. The effects of uranium are a long-term problem.

The main environmental impacts of uranium mining activity are excessive levels of radioactivity from the extracted rock piles and the tailings deposits; erosion of the tailings piles; surface and groundwater contamination from seepage and drainage; and atmospheric emissions of dust, sulfur oxides and radioactive material[117]. The Preliminary Technical Economic Report for the Macusani project itself notes that uranium mining produces dust that emits radioactive radon gas at levels that can be a potential health hazard[118]. Given the presence of uranium throughout the Macusani plateau, both at the surface and in veins, it is possible that any lithium mining operation will generate it as a by-product[119].

While these preliminary indications of the impacts on animals, plant life, and local waters sources are cause for concern, one of the most worrisome elements of the project is the presence of uranium. Uranium mining produces radioactive waste and can expose workers and the local population to very high levels of radiation, which seriously affects the environment and human health. Such radioactivity cannot be eliminated by engineering methods or techniques[120]. Uranium mining activities produce negative effects on air, soil, sediments, surface water and groundwater. Examples of these effects are in places such as Koprubasi (Turkey) or New Mexico (United States), where levels above the world average of radioactive thorium, radium and potassium are detected in rocks and sediments in the vicinity of mining operations[121].

While the world average of radioactive thorium, radium and potassium are detected in rocks and sediments in the vicinity of mining operations[120], the curious thing is that there is not a single cancer patient[121]. On the contrary, uranium mining is a highly dangerous and risky activity that has caused serious damage, even in countries with strong environmental legislation and control. Its development in Peru could cause environmental and human harm, especially given the area’s mining track record and lack of environmental governance, and the apparent indifference and misleading statements about such risks on the part of the Macusani Yellowcake company.

2.4.3. Headwaters at risk due to mining concessions

The Falchani and Macusani mining projects, additional mining concessions held by Macusani Yellowcake, as well as nearby concessions held by other companies in the area, are located very close to the junction of three watersheds: 1) the Inambari watershed, belonging to the Amazon Hydrographic Unit, 2) the Urbamba watershed, belonging to the Amazon Hydrographic Unit, and 3) the Azángaro watershed, belonging to the Ticarica Hydrographic Unit. Of the 420 mining concessions that directly overlap the watershed divides of these basins, 20 are held by Macusani Yellowcake S.A.C or its predecessor Global Gold[122]. Map 6 shows the watershed divides of basins in red.
and where the mining concessions directly overlap the divides in gray.

Of the overlapping concessions, 393 correspond to metallic substances and 27 to non-metallic substances. 91 are blocked, 14 are expired, 1 is in the category of others, 217 are titled and 97 are being processed. It is pertinent to note that this information only corresponds to mining concessions that directly overlap the watershed divides of the basins in question, which means that there are more concessions that overlap the larger surface area that constitutes the headwaters of these basins. As can be seen in the map, because of their proximity to the watershed divides and their high altitude, it is likely that the Falchani and Macusani projects overlap the headwaters of the Inambari watershed. To definitively determine which concessions overlap the headwaters, the methodological framework of technical criteria for the identification, delimitation and zoning of headwaters should be used.127

In any case, it is evident from the data above that some of the mining concessions are located at the headwaters of watersheds classified as high priority by the National Water Authority (Inambari and Uribamba watersheds, belonging to the Amazon Hydrographic Unit and the Azángaro watershed, belonging to the Titicaca Hydrographic Unit) due to their hydrological, social and economic impact.

This situation is worrisome. According to the United Nations Committee on Economic, Social, and Cultural Rights, “Water is a limited natural resource and a public good fundamental for life and health. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights. The Committee has been confronted continually with the widespread denial of the right to water in developing as well as developed countries. Over one billion persons lack access to a basic water supply, while several billion do not have access to adequate sanitation, which is the primary cause of water contamination and diseases linked to water. The continuing contamination, depletion and unequal distribution of water is exacerbating existing poverty.”128 The Committee has also stated that States must take effective measures to give effect to the right to water without any discrimination129.

The recognition of the human right to water recognized by the Committee is linked to the protection and conservation of the areas where water originates - the headwaters of the basins and the watershed divides. Therefore, it is “essential to identify and adequately delimit the headwaters of the water basin to better plan their conservation and that of the natural resources existing therein”130. In this regard, “[a] watershed is divided into three parts: upper, middle and lower parts. Part of the upper zone is called the `headwaters’. The headwaters are geographic spaces that best perform the main functions of a basin (hydrological function, ecological function, environmental function and socioeconomic function). These processes in the upper parts invariably have repercussions in the middle and lower parts of the basin. In this sense, it is important to preserve the headwaters, since they play a regulatory role in the hydrological cycle, control the quantity and timing of water flow, contribute to the maintenance of hydrological connectivity, to the integrity of ecosystems, and to the good ecological status of the basin”131.

Despite this, in Peru many of the mining activities are carried out in the headwaters of river basins. State institutions, after granting concession permits

130 Ibíd.
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2.4.4. Glaciers at risk: concessions in the Quelccaya mountain glaciers

Quelccaya, the largest tropical glacier in the world, is located in southeastern Peru, in the Vilcanota mountain range. It rises 5,680 meters above sea level, with a surface area of approximately 50 km² and an ice cap 170 m thick. Since 1974, the North American glaciologist Lonnie Thompson has traversed the glacier to investigate climate change and considers it as a world thermometer. As the Ministry of Foreign Trade and Tourism has explained, “for the inhabitant of this area, the snow-capped mountain is considered one of the main Apus of this range because of its size.” There are also “glacial lakes, rock formations, rivers, waterfalls and above all a beautiful landscape expressed in the majestic mountain range of the Peruvian Andes.”

Furthermore, “it is possible to appreciate a great variety of wild fauna endemic to the highlands, such as deer, condor, vicuñas, Andean foxes, viscachas, wild cats and a great variety of birds” and it holds “flora common to this area such as ichu, maychas, iru ichu, uthica and others.”

The waters of the Quelccaya glacier contribute to the formation of lagoons, streams and rivers that supply fresh water to the people who live around the snow-capped mountain and to all the biodiversity of the area. It is an important source of water for the Vilcanota River, which provides more than 50% of the drinking water for the Cusco region and electricity for Puno, Cusco and Apurimac during the dry season. It is also a source of water for the Amazon River because Quelccaya is located at the headwaters of the Urubamba and Inambari basins, both of which belong to the Amazon River Hydrographic Unit.

In 2019, after 10 years of struggle, the Regional Government of Cusco, through Supreme Decree No. 012-2019-MINAM, formalized the existence of the Ausangate Regional Conservation Area, which includes part of the Quelccaya snow-capped mountain. Its objective was to conserve a representative sample of the Puna ecoregion of the Central Andes of Cusco, with a high biological, landscape, and water regulation value. The total area covers 66,514.17 ha. However, Article 4 of the Supreme Decree states that property rights and other rights acquired prior to the establishment of the Ausangate Regional Conservation Area are not affected by the decree, leaving the way clear for mining concessions such as Macusani Yellowcake’s on the snow-capped mountain Quelccaya. In addition, the delimited area

135 The Ohio State University. Lonnie Thompson. https://earth-sciences.osu.edu/people/thompson.3
138 Ibid.
139 Ibid.
does not consider a large part of the Quelccaya ice cap, as shown in Map 7.

On July 5, 2021, Macusani Yellowcake submitted to the Ministry of Energy and Mines the Environmental Impact Statement (EIS) of the Quelccaya exploration project, with the objective of enabling 18 drilling platforms with a total of 89 drilling rigs, and an average depth of 300 meters. This exploration project is located 6 km west of the Falchani lithium deposit area, and its objective is to search for more lithium mineralized areas. According to the plans submitted by Macusani Yellowcake in its EIS, the area of indirect influence of the Quelccaya exploration project includes part of the Quelccaya ice cap, located in the northwest of Plan 1 below, representing a significant threat to this extremely important area.

In March 2022, the Environmental Impact Statement was not approved, according to Directive Resolution No. 078-2022-MEM-DGAAM. Both the National Water Authority (ANA) and the General Directorate of Mining Environmental Affairs (DGAAM) presented "Unfavorable Opinions" to the "Quelccaya" EIS due to Macusani Yellowcake's failure to address all observations.

According to ANA, the company did not conduct an adequate inventory and analysis of water sources, water availability, and related impacts and management measures.

DGAAM stated in its Report No. 115-2022/MINEM-DGAAM-DEAM-DGAM dated March 15, 2022, that Yellowcake did not specify the indirect environmental impacts in the delineation of the Area of Indirect Environmental Influence; it did not incorporate the socioeconomic and cultural characterization that identifies the way of life of the Quelccaya campesino community, and it did not specify the length of sections of the access roads that will require maintenance. Therefore, DGAAM concluded that the project is unviable.

Although the Environmental Impact Statement for the Quelccaya exploration project was not approved, the mining concessions related to the Quelccaya Exploration Project remain in force. In addition, on September 19, 2022, Macusani Yellowcake submitted a new Environmental Impact Statement which is under review by MINEM.

This situation constitutes a latent risk for the snow-capped mountain and the community of Quelccaya due to the possibility of future exploration and exploitation activities, and due to the risks identified in each of the observations made by ANA and MINEM that were not addressed by Macusani Yellowcake.

Furthermore, there are additional concessions located on and around the Quelccaya snow-capped mountain that could eventually be explored and exploited. A particularly worrisome example is the mining concession code N° 010148007 with the name "COLIBRÍ XXXIX" with 900 hectares, whose holder is Global Gold, currently Macusani Yellowcake.

143 Environmental Impact Statement for the "Quelccaya" exploration project, prepared by Asesores y Consultores Mineros S.A. (ACOMISA).
144 Takeshi Chacon (July 7, 2021) Macusani Yellowcake would seek lithium areas in Quelccaya project, Rumbo Minero. Macusani Yellowcake would seek lithium areas in Quelccaya project, Rumbo Minero; Eva Cruz, (October 11, 2021) American Lithium would seek lithium areas in Quelccaya project, Rumbo Minero. https://www.rumbominero.com/peru/noticias/mineria/american-lithium-alista-programa-de-perforacion-en-falchani-y-macusani/.
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and which is directly overlapping the center of the snow-capped mountain (Map 8).

2.4.5. Penalties for non-compliance with environmental regulations

Macusani Yellowcake’s initial exploration activities in the Falchani Project concessions violated Peruvian environmental regulations, reflecting a lack of respect for the rule of law and current regulations protecting the environment. This is evident from Report No. 183-2018/MEM-DGAM-DEAM-DGAM, which states that Macusani Yellowcake S.A.C. had carried out mining activities in the “Falchani” and “Ocacasa 4” mining concessions without having previously obtained the proper environmental certification from the competent authority. As a result, the Directorate of Mining Environmental Assessment recommended that the company’s request for EIS approval be denied.

In addition, in 2020, the Environmental Evaluation and Oversight Agency (OEFA) through the Environmental Oversight Directorate, issued the Resolutions: “013-2020-OEFA/TFA-SE”151 and “00-2020-OEFA/TFA-SE”, and issued an administrative sanction to Macusani Yellowcake of 399.28 UIT and 136.06 UIT (tax units), respectively, for an equivalent of 2,301,962 soles (more than $550,000 USD) for said activities. Specifically, the sanctions were issued for: carrying out uranium and lithium exploration activities without accrediting an environmental impact study duly approved by the National Environmental Certification Service for Sustainable Investments (SENACE), not accrediting the absence of archaeological remains in the exploration area, not having an authorization for the use of water issued by the National Water Authority, failing to comply with the preventive measures imposed by OEFA, and failing to stop diamond drilling activities, among other reasons152.

2.4.6. Omission of free, prior and informed consultation and consent of the rural communities, who are identified as part of the Quechua indigenous people

The Peruvian State is failing to guarantee the right to consultation and consent of the rural communities potentially affected by lithium and uranium mining in Puno. In the database of Indigenous Peoples of the Ministry of Culture, the rural communities of Tantamaco, Chacaconiza, Isivilla, Queclcaya, Corani, Chimboyoa and Pacaje are identified as part of the Quechua Indigenous People153.

Indigenous peoples have the right to “participate in the formulation, implementation, and evaluation of national and regional development plans and programs likely to affect them directly”154. In addition, the Inter-American Court has pointed out that, in the case of large-scale development or investment plans that will have a major impact on the territories and which are directly overlapping the center of the snow-capped mountain (Map 8), free, prior and informed consultation is a fundamental right of indigenous peoples with respect to administrative or legislative measures that may directly affect them, and which guarantees the protection of their cultural, social, and economic integrity and the right to participation155, as well as other rights that could be affected, such as life, health, territory, and the environment.

151 Human Rights and Environment - DHUMA. (December 29, 2020). OEFA fined the mining company Macusani Yellowcake. https://drehoshumanosoprimo.org.pe/noticias/oefa-m1u3lt6o-
152 Ministry of Culture (n/d). Database of Indigenous Peoples. https://derechoshumanospuno.org.pe/noticias/oefa-m1u3lt6o-
154 Inter-American Commission on Human Rights IACHR. In the case of large-scale development or investment plans that will have a major impact on the territories and which are directly overlapping the center of the snow-capped mountain (Map 8), free, prior and informed consultation is a fundamental right of indigenous peoples with respect to administrative or legislative measures that may directly affect them, and which guarantees the protection of their cultural, social, and economic integrity and the right to participation. In addition, the Inter-American Court has pointed out that, in the case of large-scale development or investment plans that will have a major impact on the territories and which are directly overlapping the center of the snow-capped mountain (Map 8), free, prior and informed consultation is a fundamental right of indigenous peoples with respect to administrative or legislative measures that may directly affect them, and which guarantees the protection of their cultural, social, and economic integrity and the right to participation.
of ethnic groups, States have the obligation not only to consult with communities, but also to obtain their free, prior, and informed consent, in accordance with their customs and traditions. The international obligation of States to guarantee the right to consultation and consent of indigenous peoples is supported by various international instruments. Within the framework of the Universal System for the Protection of Human Rights, we highlight ILO Convention 169 and the United Nations Declaration on the Rights of Indigenous Peoples. Likewise, the United Nations Committees have affirmed on various occasions that human rights treaties guarantee the right of indigenous peoples to be consulted and that this right is the corollary of a large number of universally recognized human rights.

Given the relevance of this right, the Inter-American jurisprudence has adopted a standard of protection that determines certain characteristics or essential elements for the fulfillment of the State’s international obligation, considering that the “failure to comply with this obligation, or engaging in consultations without observing their essential characteristics, entails the State’s international responsibility.” The essential elements identified by the Inter-American Court are: a) The prior nature of the consultation; b) Good faith and the objective of reaching an agreement; c) Adequate and accessible consultation; d) Carrying out environmental impact studies; and e) The informed nature of the consultation.

In addition, the Inter-American Court, in the Saramaka case, also established that, “in relation to any development, investment, exploration or extraction plan, the State must ensure that members of indigenous communities reasonably benefit from the plan to be carried out within their territory.”

The rural communities of Tantamaco, Chacacomiña, Isivilla, Queclayca, Corani, Chimboya, Pacaje are identified as part of the indigenous Quechua people and the preliminary technical-economic report of the companies states that the affected areas belong to these communities. Given this, these communities, and potentially additional ones, have the right to consultation and informed consent of all administrative and/or legislative measures that the Peruvian State is approving for the viability of lithium and uranium exploitation in their territory.

At the national level, the Constitutional Court has recognized that international human rights treaties, to which Peru is a party, have constitutional status (judgments on file 0025-2005-PI/TC and 0026-2005-PI/TC) and, specifically, that prior consultation is a fundamental right with the characteristics of the ILO Convention 169. Likewise, the Constitutional Court has identified, in reiterated jurisprudence, fundamental positions that constitute the right to consultation, among which are: a) The right to be consulted before state measures that directly affect their rights and group interests, b) The right that consultation be conducted prior to such measures, c) and the right that the agreements reached in the consultation process are followed (judgment on file No. 00022-2009-AI/TC; No. 00024-2009-AI/TC and No. 00025-2009-AI/TC).

Regarding the right to be consulted before state measures that directly affect their rights and group interests, the Constitutional Court, in the judgment on file as No. 01717-2014-PC/TC, urged the national Executive Branch to guarantee the prior consultation process in its sector, reiterating that the opportunity to carry out the consultation process must be prior and appropriate, before the approval, adoption, or authorization of the legislative or administrative measure that directly affects the indigenous and native communities. This means that any administrative act of the Ministry of Energy and Mines, referring to the mining concession phase, search (cateo), exploration, exploitation, mine closure and others to be identified, and which directly affect the communities, must be subject to a process of prior consultation within the framework of the principles of good faith, interculturalism, opportunity, flexibility, reasonable time, absence of coercion or conditioning and timely information, stipulated in ILO Convention 169. In this regard, the Ombudsman’s Office in its Report No. 003-2016-DP/AMASPPPII-PPIII, stated that prior consultation should take place during the environmental assessment process, so that indigenous peoples can be involved and be certain of the aspects of special interest or concern to them.

In accordance with international and national obligations, it is clear that the right to consultation and consent is enforceable in this context. Law No. 31283, a law declaring the exploration, exploitation and industrialization of lithium and its derivatives to be of public necessity, national interest and a strategic resource, was approved without the participation of the peoples involved. It is thus ignoring the provisions of ILO Convention 169, which in its Art. 6 indicates that an administrative and legislative measure that could directly affect indigenous peoples must be subject to prior, free and informed consultation.

And while the law is national in scope, the legislative history of the bill clearly demonstrates that it was motivated primarily by a political desire to exploit a large lithium deposit in Puno that is located on indigenous land and that will directly affect the indigenous communities living there. For example, the rationale before the Energy and Mines Commission of the Congress of the Republic related to the law’s pre-determinations that resulted in Law 31238, included the following main consideration:

156 I/A Court H.R., Case of the Saramaka People. Case of the Saramaka People vs. Suriname
157 Among these treaties are: (i) the International Convention on the Elimination of All Forms of Racial Discrimination, (ii) the International Covenant on Civil and Political Rights and (iii) the International Covenant on Economic, Social and Cultural Rights.
159 Ibid.
161 Ministry of Culture (n/d). Database of Indigenous Peoples. https://bdpi.cultura.gob.pe/buscar-de-localidades-de-pueblos-indigenas
162 Ministry of Culture. Prior consultation process. According to the review of the Ministry of Culture’s website, in its list of measures of prior consultation processes that the Peruvian State has consulted with the indigenous peoples of Peru, it only identifies the prior consultation of the Declaration of Cayucayo Cultural Landscape as Cultural Heritage of the Nation, the Alto Rains III and IV Hydroelectric Power Plant Project, the Amanta mining exploration project, the Corani mining exploitation project, and the Pucará mining exploration project. Retrieved November 3, 2022 from: https://consultaprevia.cultura.gob.pe/proceso/titulo?cuenta=AllDepartamento?76&nacid=amazonesur&Alllterme=All
LITHIUM AND URANIUM EXPLORATION IN PUNO: The Macusani and Falchani Projects

American Lithium states in its human rights policy that "it respects the rights, interests, perspectives and traditions of Indigenous Peoples in accordance with the International Council on Mining and Metal's Position Statement on Indigenous Peoples and Mining, the International Labor Organization's Convention 169 and other applicable international best practices." It further states that American Lithium "seeks to collaborate with indigenous communities to protect cultural and spiritual heritage as well as the environment. The Corporation will adopt and implement engagement and consultation processes that ensure meaningful participation of indigenous communities in decision-making and planning processes." However, the company also states that it "recognizes that the State may play the primary role in defining the processes related to seeking Free, Prior and Informed Consent. We are committed to meeting all legal requirements for any new operations or changes to existing projects which may have significant adverse impacts on Indigenous Peoples."

Canadian law by misleading investors regarding the initial decision by INGEMMET and MINEM, and the threat it posed to their mining rights in Peru. Specifically, the Commission alleged that the Company issued misleading press releases about the court proceedings and failed to disclose information about it in its filings with the financial authority.

The acquisition of Plateau Energy and, in turn, the Falchani and Macusani projects in Puno, creates important human rights obligations for American Lithium and its subsidiaries. As both the Inter-American Commission on Human Rights and the Office of the United Nations High Commissioner for Human Rights have recognized, "it is widely accepted that the respect of human rights is a global norm of conduct applicable to all businesses in all situations, regardless of the existence of national laws that formalize it and of States' international obligations on the subject."
At a minimum, according to the Guiding Principles on Business and Human Rights, companies must refrain from infringing on the human rights of third parties and address adverse human rights impacts in which they have participated. In addition, companies must “identify, prevent, mitigate and provide accountability for damages they cause, to which they contribute, or with which they are associated.” These obligations apply regardless of the structure through which companies do business. American Lithium itself states that it “expects that each of its wholly owned subsidiaries that conduct mining and exploration operations will establish procedures to ensure compliance with [the human rights obligations] policy.” Such subsidiaries include Plateau Energy and Macusani Yellowcake.

At the national level, the companies involved are responsible for compliance with all Peruvian laws. In addition, under Canadian law, the Canadian companies, American Lithium and Plateau Energy, may also be held liable for potential violations of the human rights of local communities and other negative impacts they cause, directly or through their subsidiaries.

The Supreme Court of Canada has recognized that customary international law, including various human rights obligations, establishes standards of conduct that may apply to companies such as American Lithium, and that corporate liability for a breach of customary international law may arise as the primary perpetrator of the breach, or through complicity in the violation.

In addition, other Canadian courts have recognized jurisdiction and venue over cases in which negligence tort claims have been brought against Canadian-based parent companies for damages suffered by local inhabitants in foreign countries where the companies’ projects are located. Since American Lithium is headquartered in Canada (British Columbia) and is registered on the stock exchanges in the province of Ontario, it may be subject to the jurisdiction of Canadian courts in connection with its own operations and those of its subsidiaries in Peru.

In short, companies must respect human rights and remedy the harm they cause, and can be held liable in both Canadian and Peruvian courts if they fail to do so.

2.7. Mining strategies in the territory

We cannot make a general statement about the position of the rural communities with respect to the Falchani and Macusani projects without more extensive fieldwork. However, we can note that the companies involved and their representatives are confident in their ability to obtain surface rights and access to the mining areas from the communities, and claim that the communities “where we are working are promoting.” To provide context, in this section we will present the strategies that American Lithium and its subsidiaries have carried out to achieve the acceptance of their projects by the rural communities that inhabit the territories that would be directly and indirectly impacted by the lithium and uranium exploration activities.

“...We still do not have clear information, but we demand to further the mining process. However, such an explanation may obscure the fact that, as a result of being in fact an acquisition, American Lithium owns 100% of Plateau Energy and has ultimate responsibility for mining operations in the area.

As these are rural communities that keep themselves permanently informed regarding developments in their ancestral territories, it was necessary to have explained the positive or negative consequences of this agreement and the implications of which the community has the ultimate responsibility for decisions, company policy and operations.
It is important that this information is understood by a community that could be directly affected by the mining project.

The lack of information identified in the interviews is consistent with previous research. According to a report published in March 2020, “in general, the sources of information of the interviewees in relation to the lithium project are the media and social media. For example, in Macusani none of the interviewees had information from official sources or from the company, resulting in extremely vague knowledge about the progress and characteristics of the project, and their opinions had a lot of speculation.”

The flow of information between communities in the area presents difficulties, including restrictions associated with the Covid-19 pandemic and long distances. However, both the companies and the State must adapt and overcome these obstacles to guarantee the community’s right to access information and participation. This means disseminating and circulating information in a transparent manner with a culturally sensitive approach and engaging all affected communities.

2.7.2. Agreements with communities, state neglect, and business strategies

Decisions made by communities are often conditioned by State neglect and corporate strategies. To exploit the mine, the companies have to buy surface rights or secure access through agreements with local communities and landowners.

The Preliminary Technical-Economic Report for the Falchani Project reported that Macusani Yellowcake had agreements either in effect or to be renewed with the communities of Chaccaconiza, Isivilla, and Queclayaca, as well as an Independent Cooperative (Imagina) and several independent small landowners.

As a result, to date, the companies have used a model of short-term agreements and subsequent renewals. Some have been economic agreements. A report in the magazine Híbridos en el sur de la Amazonía, reported that the agreement signed with the community of Chacacazina included the delivery of 100,000 soles, part of which was destined to the purchase of a vehicle. Similarly, the agreement with the community of Queclayaca to commence exploration work included the delivery of 165 thousand soles, even though Macusani Yellowcake did not have authorization to operate.

Although the making of agreements is part of the right to self-determination, it is important to note that the rural communities of the Corani and Macusani districts in the province of Carabaya, Puno region (Puno), have historically faced a context of State neglect and exclusion by the Peruvian State in the implementation of public policies consistent with their reality and needs. The Government’s presence in the territories of the rural communities close to the lithium and uranium mining project is through the Tambo Aymá, located in the town of Aymá in the district of Corani. From there, the Peruvian Government provides state services, such as medical attention, banking orientation, social programs, and other services, among other services, covering the districts of Ajayani, Corani, Macusani, Usicayos and Isunata in the province of Carabaya.

Despite this, the presence of the government is insufficient for the rural communities of Carabaya, due to its remote geographic location.

In the aforementioned two districts of Carabaya, community members live in precarious conditions, including a lack of accessible roads, lack of media to promote reliable information and education, poor internet service, inaccessible educational institutions, and low prioritization of camelid (alpaca) production, despite being declared the alpaca-breeding capital of Peru. Some experts point out that the government appears in the area only when mining projects arise, thereby generating resistance from the communities.

Such situations allowed the mining companies located in the territory of the Quechua rural communities to obtain social licenses in exchange for attending to some of the needs of their inhabitants, who subsist on their own means of production in light of the complete abandonment by the national government. An obvious example of this is the actions undertaken by the Macusani Yellowcake company in the rural communities of Isivilla, Chaccacazina, and Queclayaca; the company constructed the main square, a school, and a small medical center, among other works, thus replacing the responsibility of the State towards its inhabitants.

According to American Lithium’s website, the companies provide the following: employment for members of the Isivilla, Tantamaco, Chacaconiza, Queclayaca, Chimboya, Pacaje and Corani rural communities; assistance in the establishment of a drinking water treatment plant; road construction equipment loans for the community to improve its infrastructure; biannual health campaigns; sponsorship of educational programs; support for full-time teachers; sponsorship of festivals and local events; the Isivilla soccer field; and sponsorship of the monthly school milk program, among others.
THE GLOBAL RUSH FOR GREEN MINERALS
LITHIUM AND URANIUM RESEARCH IN PUNO

Quelccaya snow-capped mountain
Vito Calderón/Dhuma
In light of the global demand for "green minerals," such as lithium, which is key to producing the batteries used for electric vehicles, this global rush for "green minerals" threatens to become yet another chapter in the long and damaging history of mining.

The recent discovery of large quantities of lithium, such as in Peru, has led to a lack of attention to people exposed to the heavy metals generated by these activities. The scenario could worsen if lithium and uranium mining are allowed while lacking an adequate regulatory framework and oversight by the local and national governments.

In light of the global demand for "green minerals," the Peruvian government has rushed to promote lithium mining in Puno, declaring that the indicated lithium resources are found in the local and national governments.

The Falchani and Macusani mining projects threaten the archaeological remains delimited in an Archaeological Landscape by the National Institute of Culture: rock paintings from the Archaic period in America that are declared National Cultural Heritage by the Peruvian government. Experts have pointed out that activity on this cultural heritage is inadequate. For updates regarding these paintings, with the risk of damage this cultural heritage. However, the Ministry of Culture and the Ministry of Energy and Mines have not responded to requests for protection at both regional and national levels. In Canada, the Ontario Securities Commission, responsible for enforcing Ontario's securities laws, initiated proceedings against Plateau Energy and its officers, alleging that they violated the law by misleading investors about their mining rights in Peru. A Canadian court approved a settlement agreement between Plateau Energy, the implicated officials and the Ontario Securities Commission, requiring Plateau Energy and the implicated officials to pay administrative penalties totaling USD$750,000.

The overlapping mining concessions near the watershed divides of the Inambari, Urubamba and Arángaro basins, including concessions belonging to the companies involved, pose risks to the headwaters of these basins, representing a threat to the right to water and the continuation of a worrying pattern of headwater mining in Peru.

One of the companies involved in the projects has already violated environmental regulations in connection with the development of these projects. Macusani Yellowcake was sanctioned for carrying out exploration without obtaining an environmental certification.

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The Peruvian State is not guaranteeing the right to Free, Prior, and Informed Consultation and Consent of the indigenous communities that could be directly affected by the lithium
and uranium mining projects in Puno and related legislation. The minimum participation requirements established by the State and mentioned in the companies' technical-economic reports, and the ongoing efforts to obtain access to land, do not comply with international law, nor do they appear to comply with American Lithium's own human rights policies.

- All companies involved, according to international standards, must respect human rights and address potential negative impacts that may result from their activities. The companies involved are not only responsible for compliance with Peruvian law; Canadian companies may also be held liable before Canadian courts for damages they cause, directly or through their subsidiaries.

- The companies involved are confident in their ability to obtain surface rights and access to mining areas from the communities and claim that the communities “where we are working are pro-mining”. At the same time, there are several factors that seem to contribute to this apparent acceptance by the communities: the general lack of detailed information about the projects in the region; the scarce presence of the State and its services in the affected communities; the companies' social responsibility projects that make up for the absence of the State, but also create divisions; and the signing of agreements for the delivery of money to some communities.
4. Recommendations

To the Peruvian State

- The Peruvian State must establish an adequate system of environmental oversight and protection at regional and national levels capable of mitigating and remediating the damage caused by mining activity, as well as providing care for people exposed to heavy metals generated by mining. This legal framework should directly address uranium mining, in addition to lithium.

- The Peruvian State should evaluate the potential impact that the Falchani and Macusani projects could have on the rock paintings. The State must provide the pertinent actions and resources to review and update the delimitation of the Corani-Macusani Archaeological Landscape of Cave Paintings, to place boundary markers in the updated perimeter, and to proceed with the registration of the perimetric plan with the respective registry offices of the National Superintendence of Public Registries.

- The Peruvian State should ensure that a capable and independent technical entity conducts an Environmental Impact Assessment of the projects in consultation with the affected communities, and that the environmental, health, and social impacts of the proposed projects are fully and transparently analyzed. This should include a comprehensive analysis of the impacts of the projects on the Quelccaya ice cap, regional water sources, biodiversity, rock paintings, and local communities, including the effects of excessive levels of radioactivity caused by uranium mining. The results of this study should be communicated to the affected communities, civil society, public authorities, and investors.

To Civil Society

- Civil Society should continue to monitor and investigate the Falchani and Macusani projects, and disseminate this information to the affected communities, the Peruvian, Canadian and international authorities, and the public.

- Civil Society must work to ensure that the Peruvian State and the companies involved comply with their legal obligations, respect the human rights of the affected communities, and remedy any damage caused.

To the Canadian authorities, and the Regional and International Organizations, including those of the Inter-American and UN systems

- Canadian and international authorities must monitor these projects and ensure that the companies involved comply with their legal obligations. They should also guarantee access to remedies for those who suffer damages caused by the companies’ actions.

To Companies

- The companies involved must respect the human rights of the local communities, expressly recognizing that the affected communities have the right to free, prior, and informed consent, and must actively work with the Peruvian State to guarantee this right.

- Companies should ensure that affected communities are fully informed of the potential impacts of the project and avoid creating divisions within or between local communities.

- The companies involved must comply with all applicable legislation and remedy any possible negative impacts that may result from their activities.
LITHIUM AND URANIUM RESEARCH IN PUNO

Prepared by

With the collaboration of