

PRESCOUTER

COVID-19 & Natural Resources: How To Continue Operations Safely

PRESCOUTER

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RESEARCH SUPPORT SERVICE

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Intelligence Brief Question

How can businesses in the natural resources sector safely continue operations during the pandemic?

What practical framework would allow companies to continue or restart operations during the COVID-19 pandemic and, more specifically what special considerations should be considered for the natural resources sector?

Disclaimer: This document does not supersede any legal obligations relating to health and safety, employment or equalities. It is not a substitute for medical or legal advice about your employees, workplace, or obligations.



Executive Summary

The natural resources (NR) sector has been significantly disrupted by the COVID-19 pandemic due to closures and decreased demand. This sector is critical to the global economy. For example, the top 40 global mining companies reported 683 billion U.S. dollars of revenue in 2018 [1]. Also, the NR industry is a significant employer. For instance, over 240,000 people are directly employed in Australia's resources industry. The economic contribution of mining and its supply chain to Australia's economy is around 15% [2].

Examples of the impact include:

- ✓ A 50% drop in oil prices due to Covid-19 compared to last year (May 2020).
- ✓ A lowering gas demand by 5 to 10% versus pre-crisis growth projections due to the pandemic [3].
- ✓ The demand for refined products is down at least 20% (May, 2020), at least two years are estimated before demand recovers [3].
- ✓ An UNCTAD research suggests that global exports of commodities to China could plunge by \$15.5 billion to \$33.1 billion in 2020 (46% less than the annual growth projection) [4].
- ✓ The reduction in demand: comparison of the 30-day-spot price of March vs April 2020 showed a price drop of Aluminium (-15%), Copper (-14%), Gold (-2%), Lead (-10%), Nickel (-11%) and Zinc (-6%) [5].

Executive Summary

This report serves as a guide on how to work safely during the COVID-19 pandemic. We cover two main sections:

1. Setting the “ground” for general considerations in the terms of coordination and risk assessment
2. Particular considerations for the natural resource sector

Each industry would need to translate this advice into the specific actions to take, depending on the nature of their industry - oil and gas, energy or mining - including the size, how it is organized, operated, managed and regulated. The below example is specific for the mining industry.

Within mining, different companies have a **different engagement level in each step.**



Exploration

The most promising of the prospects identified become targets for a detailed exploration program.



Development

establish the feasibility that extraction is reasonably justified.



Extraction

extraction of saleable products from industrial mineral/metal ore



Processing

further process these saleable products into higher value added products.



Commerce

take the product to customers in terms of awareness, availability, quality, customization, pricing, payment, supply logistics.

Setting the “ground”... Rebuilding with a focus on resilience

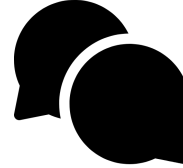
Setting the “ground”... Rebuilding with a focus on resilience



**COVID-19
management group**



Risk Assessment



Communication



**Education and
training**

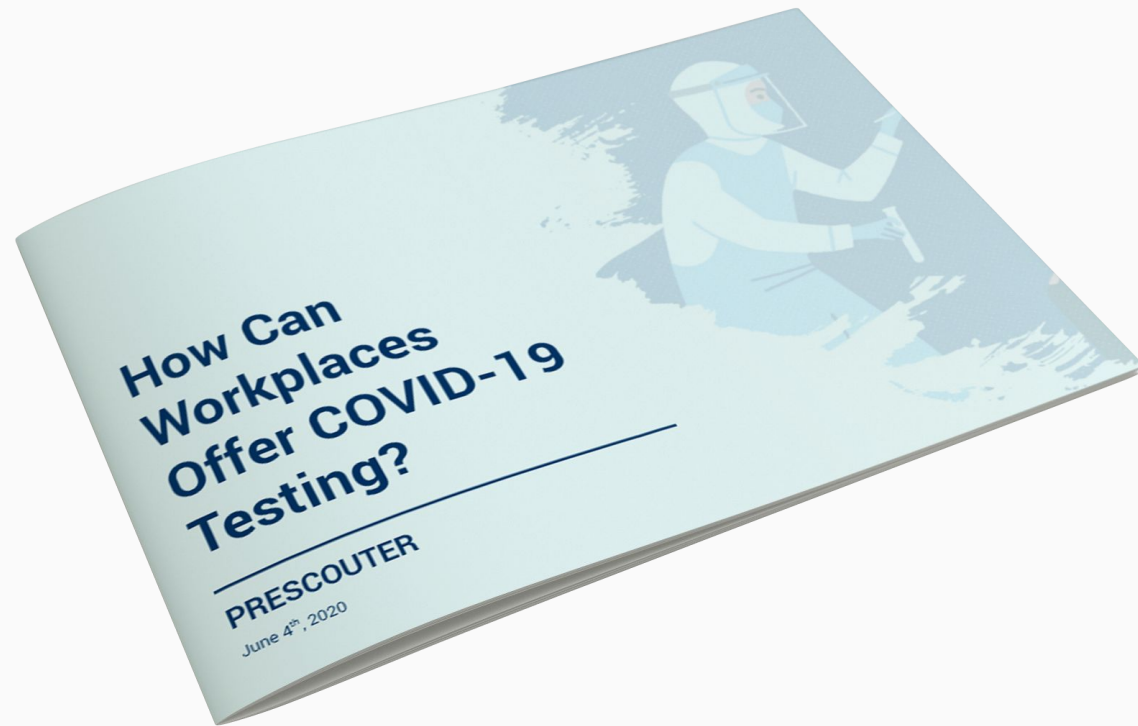
In this section, we present practical and main considerations on how to prepare “the camp” to apply safety measures in the workplace.

Companies should consider some form of diagnostic testing which can prevent work sites from becoming the next hotspot, and mitigate potential financial and brand damage.

Daily wellness checks, such as temperature reads and questionnaires asking employees about COVID-19 symptoms, PPE and other safety measures do reduce the risk of viral spread. However, many carriers of SARS-CoV-2 (the COVID-19 virus) are asymptomatic. This means the virus may be continuing to spread, but at a slower rate, because of the safety practises in place.

Preventative, regular testing of workers can catch asymptomatic carriers of the virus and further prevent a viral outbreak at company facilities.

How Can Workplaces Offer COVID-19 Testing?



Analysis by PreScouter's experts lays out all of the testing options and logistics and investments required for each option.

Learn more in our report, [How Can Workplaces Offer COVID-19 Testing?](#)

COVID-19 management group

Risk Assessment

Communication

Education and training



Each enterprise will have particular necessities and protocols that will need to be adjusted in a case by case basis. The formation of a group with participants from different departments or areas is needed to be able to cover a risk assessment of all operational areas accordingly.

The aim

A COVID-19 management group can oversee all phases of returning to work under COVID-19 pandemic. In general, the activities cover and are not limited to:

Planning for a phased return by identifying essential operations, key personnel, people at risk, as well as elaborating all operational and logistical aspects for a safe return to work and contingency plans for possible infections within the company.

Who would be ideal?

Chief health and safety officer to coordinate the formation and initial management of the team.

The lead technical, lead communication officers and the duty holders from each unit/department can contribute to evaluate the risk and requirements of specific spaces and help to disseminate the communications.

A full-time team manager would be required to coordinate with the team specifically on COVID-19.



PRESCOUTER EXPERT NOTE:

“Strong leadership and vision can allow organizations in the natural resources sector to resume operations during these trying times. New technology solutions, transparency with workers, and communications with health authorities can all help reduce timelines to resume operations.”

- Sofiane Boukhalfa PhD, PreScouter Technical Director

**COVID-19
management group**

Risk Assessment

Communication

**Education and
training**



To help you decide which actions to take, you need to carry out an appropriate COVID-19 risk assessment, just as you would for other health and safety related hazards.

Risk of COVID-19 to others

Including workers, external people,
indigenous people, etc.

***Recognizing you cannot
completely eliminate the
risk of COVID-19***

**A risk
assessment
should be
considered in
terms of**

Risk of COVID-19 to the individual

Considering persons in vulnerable
groups.

Risk of safe operation

Assessing how any related risk
management might affect the safety
of operations on the worksite.



AN INTERACTIVE TOOL

The Health and Safety Executive in the U.K. presents an
interactive tool "[Managing risks and risk assessment at work.](#)"

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Risk Assessment

Communication

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training



A risk assessment will help you decide whether you have done everything you need to, to reduce risk to the lowest reasonably practicable level taking preventative measures, in order of priority.

Who should be involved?

The people who do the work are often the best people to understand the risks in the workplace and will have a view on how to work safely. Involving them in making decisions shows that you take their health and safety seriously.

If applicable, you should consult with the health and safety representative selected by a recognized trade union or, if there isn't one, a representative could be chosen by workers [6].



This is NOT about creating huge amounts of paperwork, but rather about identifying sensible measures to control the risks in your workplace

THINKING ABOUT RISK

For example, if someone falls sick on offshore installations, will minimizing the number of persons kept on board result in an increased risk of accidents on the facility, or will increased transport of cases off the offshore installation affect the risk to helicopter operations?

**COVID-19
management group**

Risk Assessment

Communication

**Education and
training**



Communicating the decisions and new protocols is key for a successful planning and execution. Communication even before reaching an agreement for the next steps can help reduce anxiety and uncertainty.

COVID-19 main communication actions

- ✓ Assign a communication representative(s).
- ✓ Let the employees know an action plan is coming.
- ✓ Remind them to follow the government advice.
- ✓ When available, communicate a clear, strategic plan.
- ✓ Prepare and hang informative posters/signs with key information for the day-to-day activities.
- ✓ -Consider a daily safety briefing prior to field workers going on service (discuss workflow, PPE use, etc).
- ✓ Develop an internal website with FAQs and keep it updated (i.e. use of PPE).
- ✓ Make sure to leave a channel open for feedback.
- ✓ Make sure to include or strengthen a medical contact to attend medical queries.

Support mental health of employers and families



TOOLS

Awareness of the new protocols can be reached by signs, posters, infographics, daily emails, daily briefings, etc.



Source: [lundin mining respond to COVID-19.](#)

Due to the novelty of a 'new normality', the information should be constantly reminded to the employees

COVID-19
management group

Risk Assessment

Communication

Education and
training



All workers should participate in a COVID-19 training and education session.

Targeted for:

All contractors, service providers, visitors, or other parties that enter the worksite.

Language:

Available in both English and the language best suited for the workers.

Topics:

Training on cleaning tools and assistance to ensure compliance to meet the standards. Encourage staff to visit further sources, such as the WHO [Online course](#) in different languages.



LOOK FOR REGIONAL UPDATING FOR RECERTIFICATIONS

There are some flexibilities/exceptions for Mine Operators by the Department of Labor and the Mine Safety and Health Administration's ([MSHA](#)) of the U.S. related to some recertifications [\[link\]](#). The exception does not apply to new miner training. Once the Emergency Declaration is lifted, mine operators should work with their respective district offices to ensure that all certifications are conducted in a timely manner.

COVID-19
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All workers should participate in a COVID-19 training and education session.

Other considerations:

- ✓ Workers who regularly use specialized PPE and are properly trained in its use should not share it with others.
- ✓ Employers should establish a labeling system to help with organization of specialized equipment.

Consider training personnel in other areas, allowing readiness to cover critical roles in case of staff shortage in priority areas



For more information on the use of PPE, signage and employee education, check out our report, [Operating Workplaces: How to keep manufacturing during the COVID-19 pandemic](#)



Source: [lundin mining respond to COVID-19.](#)

Considerations For The Natural Resources Sector

Considerations For The Natural Resource Sector



Work crew



Traveling to work



Field work



Work camp and accommodation

Working in the natural resource sectors involves activities not always considered in the general governmental advice. For instance, it can involve multiple geographies (different country regulations and restrictions), uncommon transportation methods (boat, helicopter), traveling between sites for key maintenance operations, among other things.

Work crew

Traveling to work

Field work

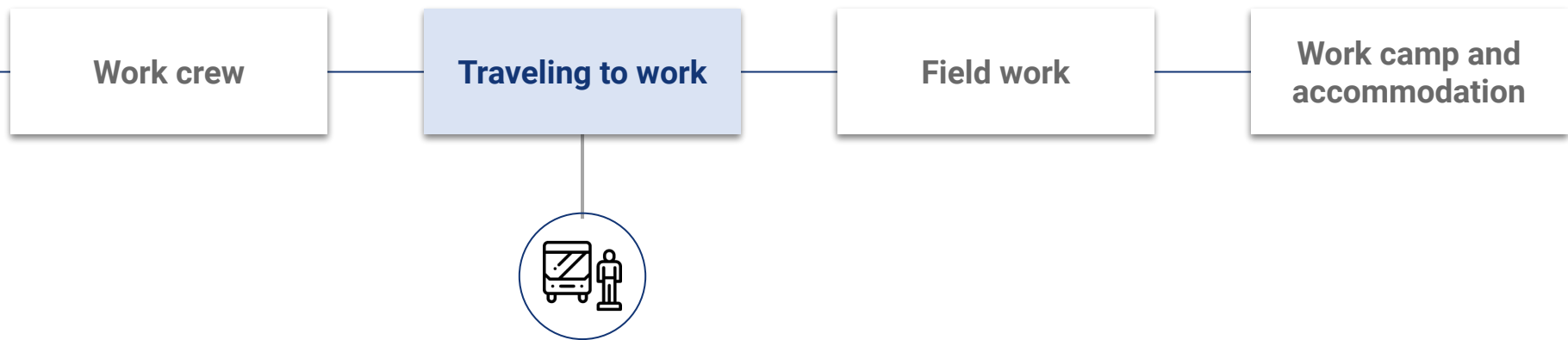
Work camp and
accommodation



When social distancing is not possible:

- ✓ Designate workers to the same **small working crew or work pod** for as long as practical.
- ✓ The number of staff in each work pod should be kept to a minimum (< 6) whenever possible.
- ✓ Workers should NOT be reassigned between work pods.
- ✓ When there is an urgent and unavoidable need to re-assign workers to another pod, the coordinator should evaluate the possible impact/risk of COVID-19 transmission.
- ✓ Assign vehicles, base camps, tools to be used only by team.





Before going to work

- ✓ Establish or implement cleaning and disinfection guidelines (ex. [CDC's guidelines](#)).
- ✓ All workers should monitor their own health before going to work.
- ✓ If a worker is feeling ill, the person must notify the company, self-isolate and seek medical advice.
- ✓ All workers should be screened for symptoms of COVID-19 prior to traveling offshore or work site [7].

Encourage employees to stay home when sick: Employers should offer flexible sick leave and other practices, which are not punitive, to encourage people to stay home when sick.

If an employee arrives sick or gets sick at work: Identify symptoms, isolate immediately and inform individuals of potential exposure in line with the Health Insurance Portability and Accountability Act (HIPAA) requirements.

Work crew

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Work camp and
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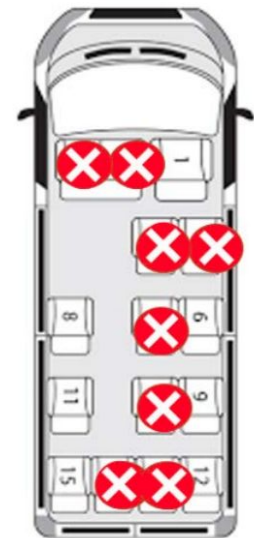
Traveling to the work site

- ✓ Consider questionnaires, temperature screening and other screening methods.
- ✓ Establish health checkpoints prior to boarding vessel/truck/helicopter/bus if no pre-travel screening is conducted [7].
- ✓ In situations where workers are required to travel together in vehicles/helicopters, workers will travel in a designated vehicle for their work pod [8].
- ✓ Drivers should clean and disinfect frequently touched surfaces in the vehicles [8].



HELICOPTER TRAVEL

Consider increased cleaning protocols, wearing PPE while transiting, such as masks or face coverings, and hand sanitizing prior to flight [7].



Seating arrangements to maximize distance between workers. Source: [Working safely during coronavirus \(COVID-19\), U.K.](#)

Work crew

Traveling to work

Field work

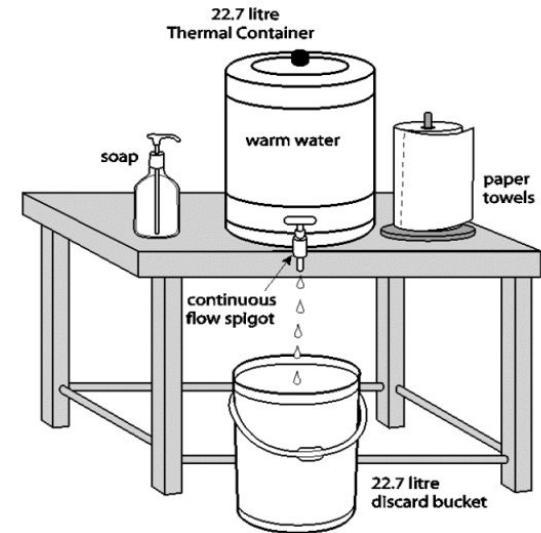
Work camp and
accommodation



Preventing the risk and spread of COVID-19 on work sites

Install handwashing stations with soap and water. Make available hand sanitizers with a minimum 60% alcohol where appropriate.

- ✓ Washing stations should be checked, cleaned, and re-stocked with supplies three times a shift.
- ✓ Prevent field operators from entering the office/warehouse spaces as much as possible.
- ✓ Having the operator going directly to the field location from accommodation.
- ✓ Arranging for the delivery of material to the work site.
- ✓ Where possible, each worker should utilize only their own tools throughout the duration of their employment. Where it is not possible, the shared tools and equipment should be wiped down and cleaned.
- ✓ Consider taking steps to limit visitors, contractors, and employees to operations sites.



Alternative hand-washing station. Source: [British Columbia Provincial Health Officer \(PHO\)](#)

Work crew

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Field work

Work camp and accommodation



Operation

- ✓ Consider shifting from operation control to a remote operation room to limit onsite operators when possible.
- ✓ Keep the activity time involved as short as possible.
- ✓ When social distancing it is not possible, using **back-to-back or side-to-side working (rather than face-to-face)** whenever possible.
- ✓ Identify areas where workers have to directly pass things to each other, such as shared tools, materials or job instructions, and find ways to remove direct contact, for example, by using drop-off points or transfer zones.
- ✓ Stay on top of suppliers and shortages to mitigate logistic problems (ex. transportation of material).
- ✓ Create a list of key materials that need to be in stock and contact suppliers to determine availability or if a shortage can be expected.
- ✓ If working at a site externally to the company, request health and safety plans and protocols from contractors.
- ✓ Allow the field personnel to call the supervisor to discuss essential vs non-essential work if the risk of exposure is high.



If you have to access a contaminated buildings (ex. for energy industry):

- ✓ Develop a list of essential and non-essential services.
- ✓ Develop a process workflow to use at the customer's door with questions and talking points to give employees the opportunity to assess the situation of a particular customer (ex. ask if someone is sick or has symptoms, possible exposures, etc.).
- ✓ Develop a process workflow to use if the previous assessment indicated a possible contact with someone sick (ex. Ask the sick person to go to another room, practice social distancing, extra care to avoid touching the face).

Work crew

Traveling to work

Field work

Work camp and
accommodation



Develop and implement an Infection Prevention and Control Protocol to reduce the number of social interactions between workers and employers:

- ✓ Workers should not share items such as eating utensils, towels, glasses, etc.
- ✓ Offer alternate lodging (mobile homes, RV).
- ✓ When overnight travel is needed, communicate best practices and provide the means to carry them out (ex. accommodation with cooking facilities to avoid dining out, single room occupancy, travel bags with cleaning supplies, etc).
- ✓ Facilities and services (including meals, communication systems, laundry) should be organized on site and provided to enable workers to remain in camps on days off whenever possible, and personal purchases can be arranged without workers visiting nearby communities.



CAMP ACCOMMODATION

For example, in Chile, camp accommodation has transitioned to all single occupancy rooms and dining hall hours have been extended to increase social distancing - [BHP](#)

Protecting communities

An important responsibility is to protect vulnerable community members and provide additional support and protect indigenous populations. Some steps to reduce the interaction with local communities are:

- ✓ All face-to-face contact with Traditional Owners should cease [9].
- ✓ Consider to support the establishment of COVID19 testing centres.
- ✓ Non-residential workers should no longer be allowed to visit local townships or community facilities.
- ✓ Consider introducing a personal shopper service in camp accommodations.
- ✓ Consider providing support and input to industry and government bodies to assist regional health services in accessing appropriate.



FUNDING ON TESTING CENTRES

“BHP has announced it will allocate \$7.6 million from its recently created Vital Resources Fund to support the establishment of COVID19 testing centres in Moranbah and Proserpine, in a move that will ease the strain on local health facilities and increase the separation between suspected cases and the local community” [10].

FUNDING ON RESEARCH

The Western Australian resources sector will provide half a million dollars to fund a COVID-19 population study which will undertake wide-scale asymptomatic testing [11].

*BHP, Chevron Australia, Mineral Resources, Rio Tinto and Woodside Energy will also contribute substantially to the project through established screening and research mechanisms

PRESCOUTER EXPERT NOTES:



“Testing and screening can help reduce disease across all industries, which would keep people safe and revive the economy.”

- Ziya Erdem PhD, PreScouter Project Architect



“Regulation bodies and both national and international organizations provide guideline documents that are of great importance to rely upon, when making decisions regarding measures to implement to restart operations in a proper and safe manner.”

- Christian Salles, PreScouter Technical Director

Critical Infrastructure needs to be maintained with limited personnel due to COVID-19 and some practices have been taken, some examples are:

Remote work

The Chamber of Minerals and Energy of Western Australia (CME) suggested a online transition for mining applications [12]

Disinfection equipment

- Equipment for large areas: V12So Disinfection Cannon from [Tecpro Australia](#)
- Flame-Resistant Face Coverings: [DuPont](#) Personal Protection in response to the protection needs of COVID-19, announced that face coverings made with Nomex® may be used along with flame-resistant garments [13].

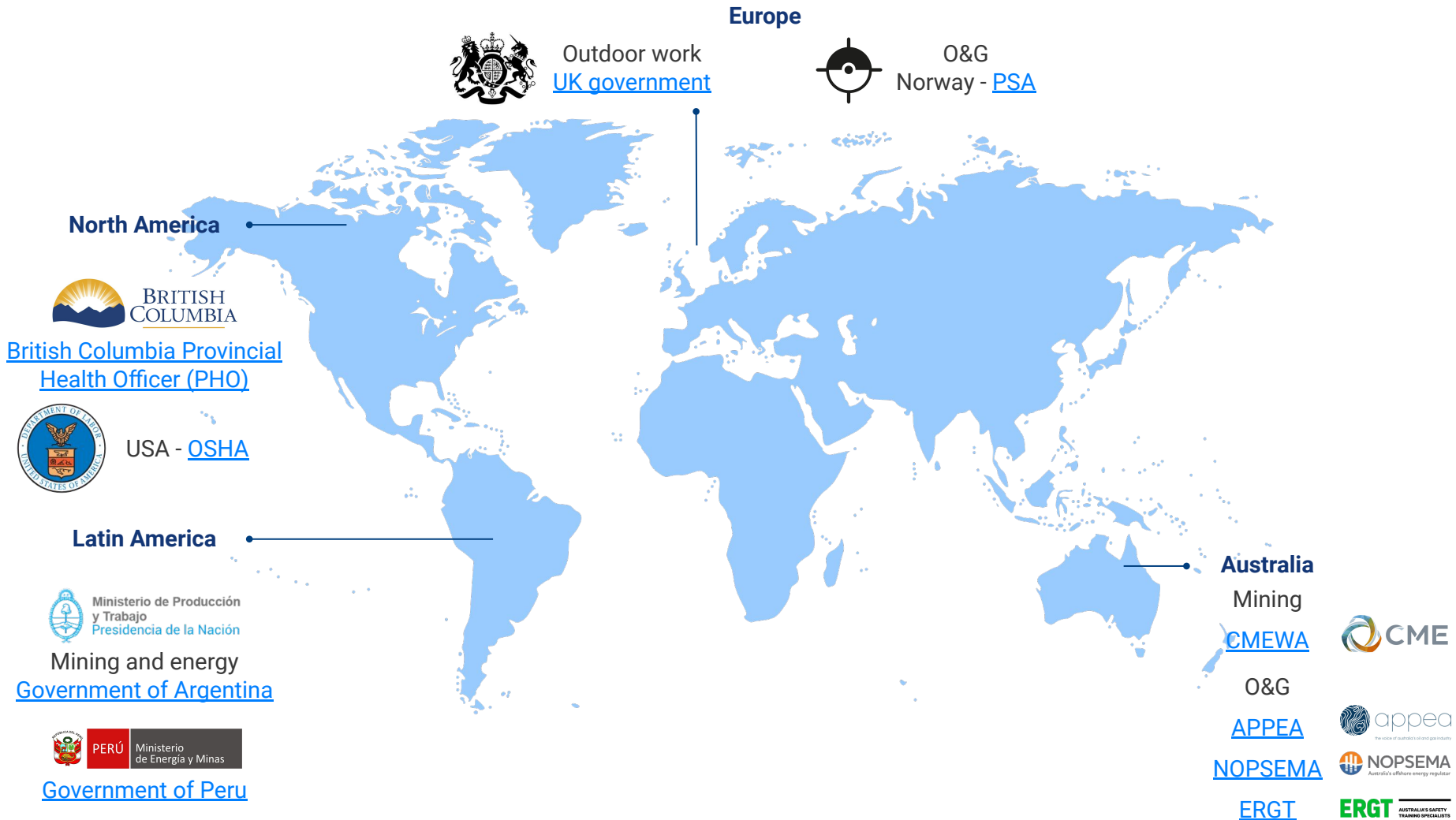
Software

Artificial Intelligence (AI) can enable work remotely with improved asset insights. AI Predictive Analytics provides advance notifications for maintenance, assisting in keeping critical infrastructure operational [14,15].





Some government and organization action plans for natural resources sectors or outdoor work



AUTHORS



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Christian is one of PreScouter's Project Architects. He specializes in Materials, Manufacturing and Testing. Christian has years of experience in the energy industry in aging management and failure analysis, as well as a technical consultant for special alloys manufacturing.



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Sofiane leads the high-tech, aerospace and defense, finance and natural resources practices at PreScouter. Sofiane earned his B.S. in Materials Science and Engineering from The University of Illinois at Urbana-Champaign, and his Ph.D. in Materials Science and Engineering from the Georgia Institute of Technology, where his research focused on nanotechnology and energy storage. Since graduating from Georgia Tech, he has worked as an emerging technology and business strategy consultant at several firms and for his own clients.

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Ziya is a Project Architect working within the PreScouter Natural Resources group. He earned his Ph.D. in Environmental Engineering from the University of Akron where his research focused on bioremediation. Ziya has years of experience working as process engineer, quality assurance manager and auditor. Since graduation he has worked in market research and consultancy.



Yutzil Castán, PhD

Research Analyst

I am an independent environmental consultant. I have participated in national and international research projects related to ecology, management, and sustainability in different institutions. Particularly, my involvement has included general assistantship, database organization and analysis, inspect government documents about natural resources management, reporting, and design of tools for the development and delivering of workshops.

ABOUT PRESCOUTER

PRESCOUTER PROVIDES EXPERTISE ON DEMAND, INCLUDING EPIDEMIOLOGISTS AND OTHER COVID-19 EXPERTS

During COVID-19, PreScouter is leveraging its network of experts to help clients respond to this pandemic appropriately. Our epidemiologists, infectious disease scientists, and biostatisticians combine advanced technical training with years of consulting experience to distill virology into strategies that make sense for a variety of businesses.

CLIENTS RELY ON PRESCOUTER FOR:



Reopening Planning: Experts can review and help craft reopening plans, examples of which include:

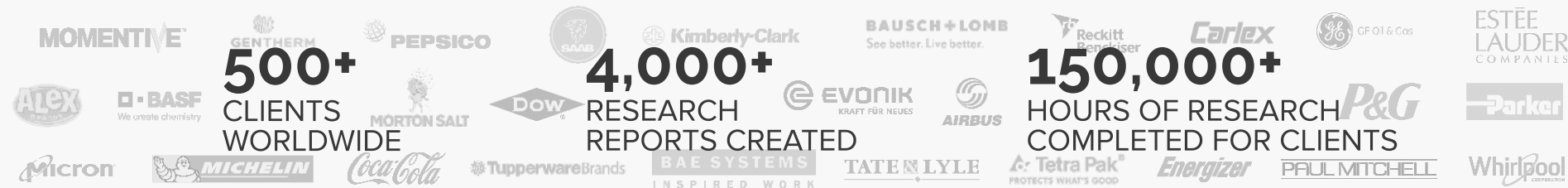
- Employee testing programs
- Workspace reconfiguration options
- PPE / sanitation / HVAC protocols



Supply Chain Disruption: When traditional resources or raw materials are not available during a pandemic, PreScouter helps clients find alternative solutions - uncovering connections around the world.



Customized Insights: Everything is customized to a particular business challenge. Clients don't pay for prepackaged reports - each project we do is bespoke and tailor made for each of our clients.



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