



# 2025 Tailings Progress Report

## Orano Mining

ICMM 2025 Orano mining  
Tailings progress Report

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## 1. Introduction

The current document is a progress report on application of the Global Industry Standard on Tailings Management (“GISTM”, “Standard”). The report is supplemented with the detailed self-assessment disclosures. The Standard contains 77 requirements integrating social, environmental, local economic and technical considerations in reaching the goal of zero harm to people and the environment. Orano Mining is committed to conform with the Standard and is disclosing transparently information on our tailing’s facilities. Orano Mining reaffirms its commitment to safe management of tailings facilities and meaningful collaboration with stakeholders.

For the facilities with classification ‘extreme’ or ‘very high’ potential consequences, Orano Mining has published its first self-assessment and detailed report in August 2023. The current document contains brief information with supplementary self-assessment disclosures on all tailing facilities managed by Orano Mining.

Orano Mining manages 11 tailing facilities in France, 1 facility in Canada and 1 in Gabon. The chapters of the present report are divided by countries as situation may vary from one country to the other.

	Location	Tailings Name	Consequences Classification	Mining stage	Disclosure
1	France	Bois Noirs Limouzat	Extreme	post-mining	progress
2	France	Bernardan	High	post-mining	initial
3	France	Brugeaud	High	post-mining	initial
4	France	Ecarpière	High	post-mining	initial
5	France	Lavaugrasse	Significant	post-mining	initial
6	France	Montmassacrot	Significant	post-mining	initial
7	France	Le Bosc (Lodève)	High	post-mining	initial
8	France	Bertholène	High	post-mining	initial
9	France	Gueugnon	Significant	post-mining	initial
10	France	Saint Pierre du Cantal	High	post-mining	initial
11	France	Fouilloux	High	post-mining	initial
12	Gabon	Mounana	High	post-mining	initial
13	Canada	JEB	Very high	production	progress

Orano used to report on the tailing’s storages of COMINAK and SOMAÏR in northern Niger. Following political events of July 2023 that occurred in Niger, Orano has no more physical access to the sites and declared the loss of operational control of those two sites on December 4<sup>th</sup>, 2024. Therefore those tailings are not included in the current disclosure.

## 2. Context

### 2.1. France

Orano Mining France Post Mining Department (AMF) is in charge of 11 tailings facilities in France that fall under the GISTM scope. Ten of them are previously uranium mine tailings facilities and one for gold mining (Digues Des Fouilloux). There is no current mining on those sites.

Bois Noirs Limouzat update: on the 5<sup>th</sup> of August 2023, Orano Mining published the result of disclosure for Bois Noirs Limouzat facility which is classified as “extreme” regarding the potential breach consequences. In 2022 the French administration requested to improve the site remediation considering long term climate change by replacing the water cover for a mineral cover. Orano mining has led for the last three years, several studies in order to deliver to the French administration by the 30<sup>th</sup> of June 2025 the Dossier de Déclaration d’Autorisation Environnementale (DDAE) (Environmental Authorisation Declaration Report). The report is under review with the French administration, independent experts and public by the end of the year leading to an Arrêté Prefectorial (administration act) which will cover the remediation working program, environmental monitoring during and after remediation.

This remediation program should decrease the consequences level as the potential main catastrophic event would be, with a very low probability, a breach in Bois Noirs dam leading to a tailings mud flow impacting population downward. The years following the remediation work program should allow a drying of the tailing facilities eliminating the risk of liquefaction of tailings and the resulting flow.

Orano mining has led this program taking into account all GISTM requirements regarding social communication and studies transparencies with public meetings, technical commissions presenting important remediation points as hydrogeological, geotechnical, radiological and environmental issues. This public cooperation and communication program is under the prefect authority. All technical and environmental aspects have been led with the French administration services in order to deep cover every aspect. Orano mining has involved his EOR and EOR team regarding all the facility itself regarding earthwork phases and post remediation long term stability studies.

As the authorisation declaration report has been delivered to the French administration, no update will be done by Orano during the instruction. In 2026, a specific disclosure will present the remediation project.

## 2.2. Gabon

Orano exploited uranium deposits in Gabon for 40 years. It then rehabilitated the sites, completing this work in 2006. Since then, the Orano subsidiary COMUF has performed the environmental monitoring at the sites, while also carrying out societal initiatives.

## 2.3. Canada

Orano Canada Inc. is the operator of the McClean Lake uranium production facility in Northern Saskatchewan, Canada. Tailings from the production process report to the JEB Tailings Management Facility. The JEB Tailings Management Facility is a former open pit mine and in 1999 was converted to permanently store tailings. The JEB Tailings Management Facility has recently undergone expansion to permanently store tailings above natural ground (above the open pit rim). This involved extensive engineering, regulatory approval and construction of the embankment. The production of Uranium in Orano Canada’s operation results in tailings. Orano Canada has a single facility that accepts tailings, nestled within the McClean Lake operation in Northern Saskatchewan. Orano Canada has advanced the JEB TMF expansion into construction and operation. This was done through years of regulatory applications and scrutiny. Currently Orano Canada is managing its tailings through the process to start neutralization of tailings in the mill to the safe containment of the tailings in the facility. The GISTM along with public knowledge sharing of tailings facilities and internationally available technologies have advanced tailings management within the mining industry.

### 3. Application of the Standard

#### 3.1. France

The last mining activity in France ended with the closure of Bernardan mine in 2001. All facilities have been remediated and have been monitored since.

These facilities are regulated under the 1735 section of the Installations Classified for Environment Protection (ICPE). They are legally permitted by Prefectural Act with specific environment requirements. French regulation set a high level of requirements, but GISTM brought re-enforcement regarding facilities monitoring. Orano Post Mining department carried out in 2024 a review of all monitoring programs and added some visual inspection reference points, enhanced frequency monitoring, and proceeded to maintenance works such as surficial water collection and piezometers airlifts.

In addition, Emergency response plans have been revised incorporating results from the breach consequences analyses.

GISTM led Orano to set a formal convention with his long-term expert engineering consultant for Engineer of Record. The ITRB convention has been set as well and allowed Orano to have a second level of control in order to enhance confidence of its facilities monitoring.

These conventions integrated within Orano organisations allowed Post Mining Department to set a governance which is presented in the following Figure 1.

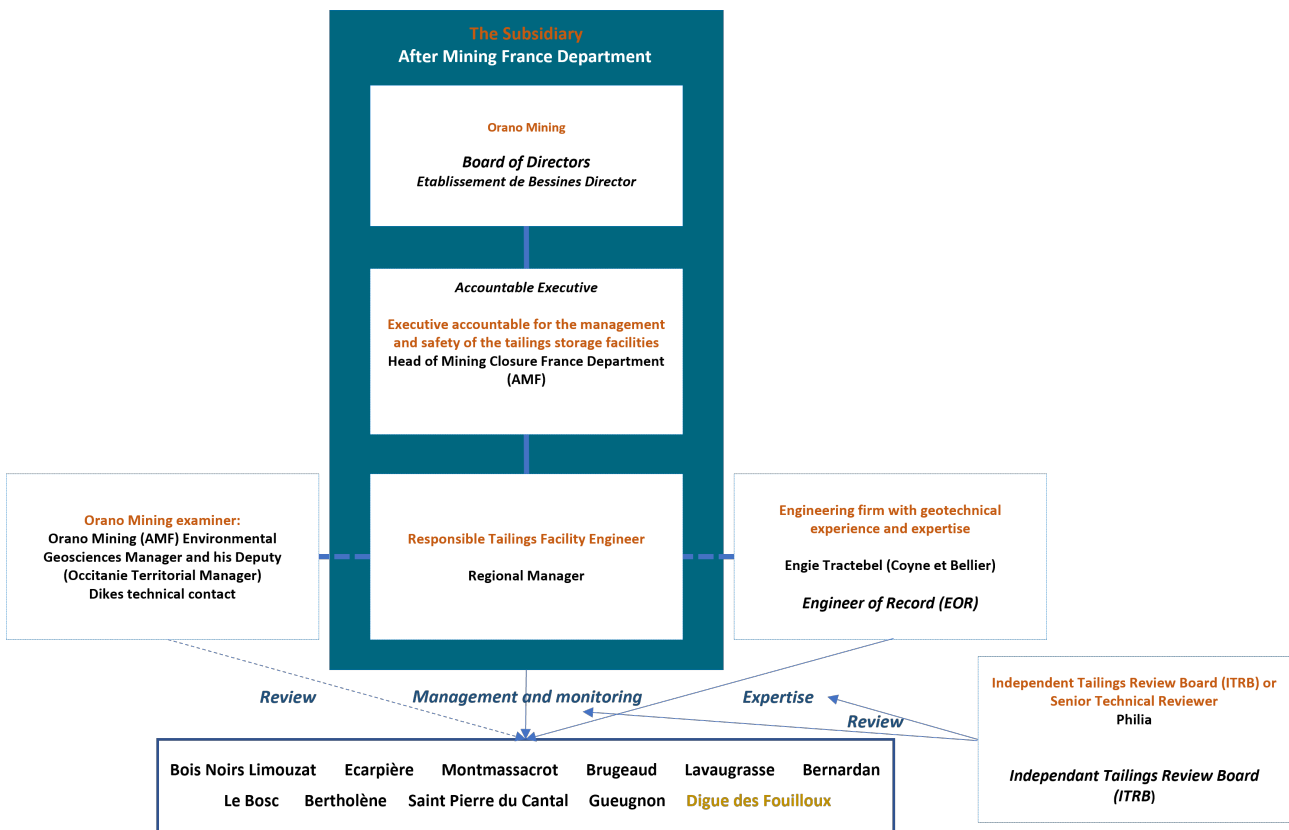


Figure 1: Orano After Mining France department governance.

French regulatory system already set a high level of transparency regarding monitoring results disclosure which should be presented each year during Site Council. An annual monitoring report must be addressed to the local Prefecture and Administration Départements are responsible for public disclosure which is not always the case. GISTM allowed us, through yearly disclosure, to improve our disclosure process.

### 3.2. Gabon

Orano Mining and its subsidiary COMUF has set high standards in Mounana maintenance and monitoring. GISTM brought another point of view allowing to focus on potential impact and consequences in case of a breach. Stability study, hydraulic study and consequences analysis were led in 2022. It has comforted Orano in pursuing its maintenance and monitoring even if the potential of a breach is very low.

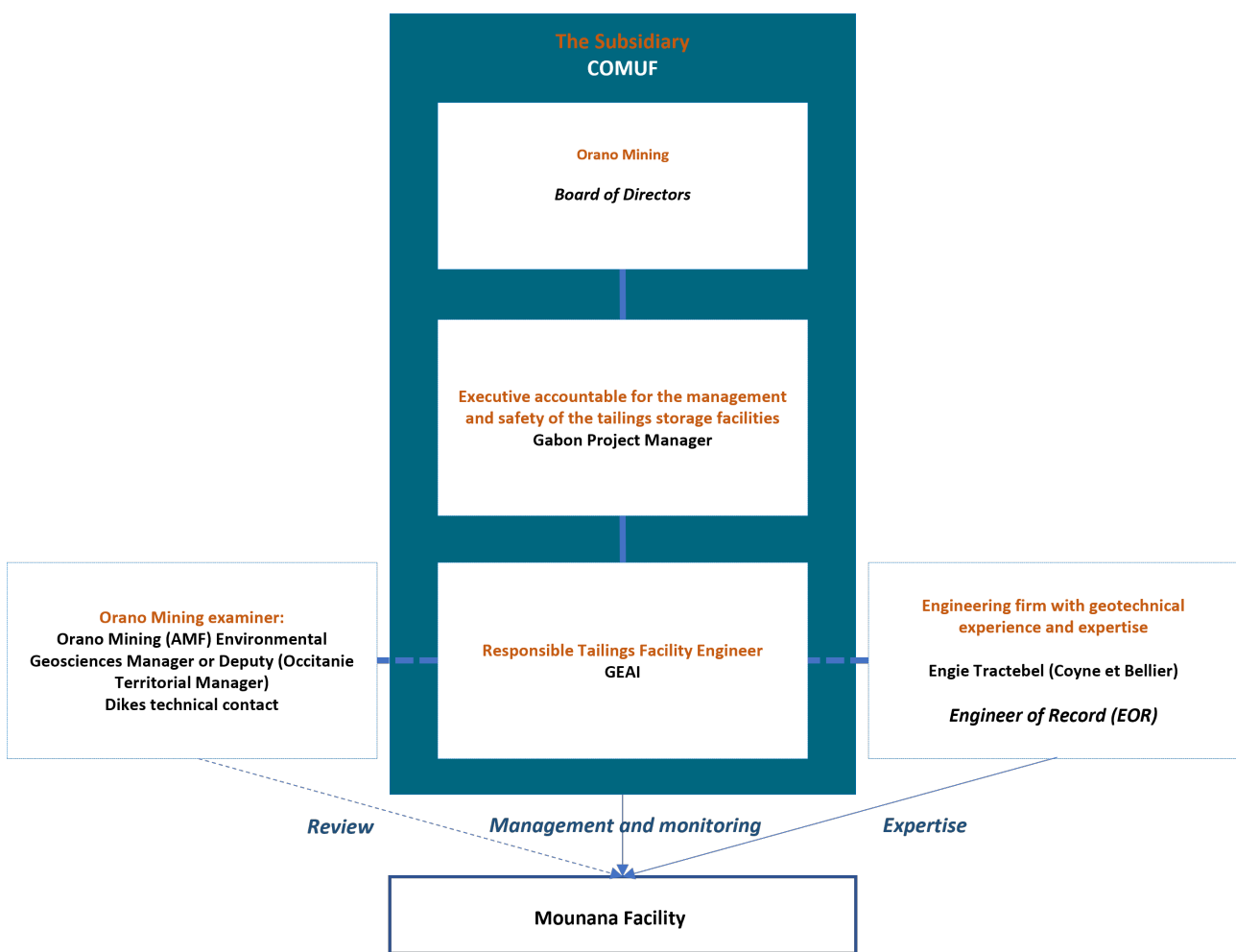


Figure 2: Comuf governance

### 3.3. Canada

The GISTM brought governance to Orano Canada tailings management. Since the single tailings facility in Orano Canada's operations was expanded to an "above ground" from "in-pit" facility the operational

requirements significantly increased. The GISTM was published around the same time as this expansion, so the benefit of safe tailings management was realized through governance, operations and surveillance.

## 4. Location

### 4.1. France

Five facilities are located in Haute Vienne department (87):

- Two facilities are located on the Bessines Industrial Site resulting from the former uranium ore treatment plant SIMO. These are Brugeaud and Lavaugrassse facilities.
- One other facility is located on Bessines sur Gartempe city as well, Montmassacrot.
- One facility is located North of the department, associated with the former uranium mine and processing plant of le Bernardan.
- One called Digue des Fouilloux is located South of the department next to the Bourneix former gold mine in Saint Yrieix la Perche.

One facility, Ecarpière, is located in the West of France in Gétigné about 40 kilometres South-East of Nantes in the Loire-Atlantique department (44).

One facility is located in Saint Pierre in the Cantal department (15), centre of Massif Central called Saint Pierre du Cantal.

As mentioned previously, Bois Noirs Limouzat is located in the Loire department (42) in Saint Priest La Prugne, which is so far the last one presenting a water cover.

One facility is located in Gueugnon city, Saone et Loire department (71).

Two facilities are located in Occitanie region, one in Aveyron (12) called Bertholène, the other located in Hérault department (34) called Le Bosc (or Lodève).

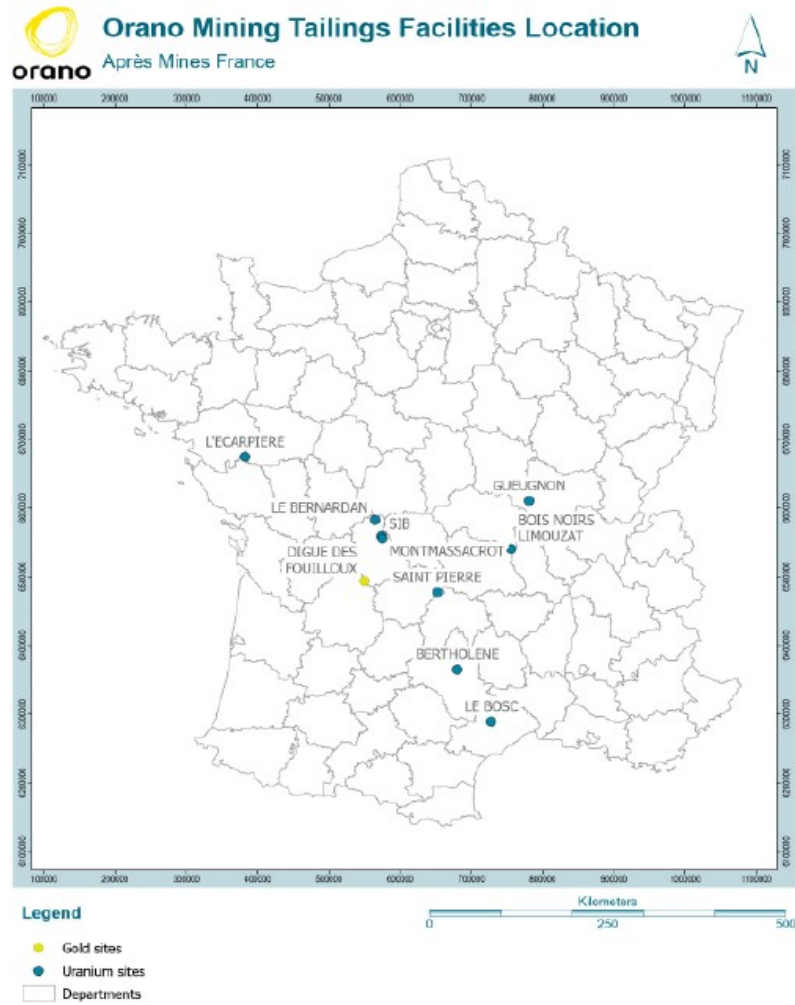


Figure 3: French Tailings Facilities location.

## 4.2. Gabon

The Mounana Tailings Facility is located in the Haut-Ogooué region, in the eastern part of Gabon.



Figure 4 : Mounana TFM Location

### 4.3. Canada

JEB TMF is located on McClean Lake site in northern Saskatchewan, Canada.

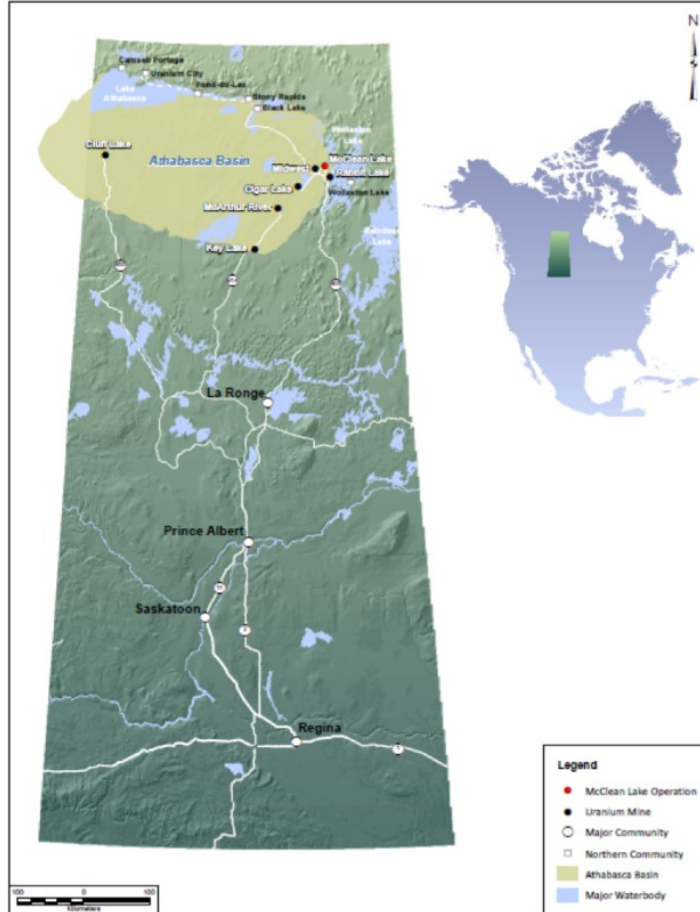


Figure 5 : JEB TMF Location (McClean Lake site)

## 5. Tailings Facilities specifications

### 5.1. France

The 11 French facilities present different shapes and conceptions according to the initial geographic, topographic and hydrological context. Some of them were setup through river valley. Rivers were deflected from their initial course which is the case of Bois Noirs Limouzat, Digue des Fouilloux and Bertholène for example. Some other were set overground with favourable topography which allowed water collection with drainage system set at the facility base. This is the case of Bernardan, Lavaugrasse, Saint Pierre and Ecarpière. Tailings were also disposed within existing open pits, if the capacity was not sufficient to accommodate with tailings creation, with upper ground extension such as Brugeaud, Montmassacrot and Le Bosc.

Bois Nois Limouzat disclosure and self-assessment are available [on-line](#).

**Table 1: After Mining Department facilities specifications.**

<i>Site</i>	<i>Location</i>	<i>Mining activity</i>	<i>Design</i>
<b>Bois Noirs Limouzat</b>	<i>Saint-Priest-la Prugne (Loire), France</i>	<b>1957-1980</b>	<b>Talweg+dam</b>
<b>L'Ecarpière</b>	<i>Gétigné (Loire-Atlantique), France</i>	<b>1958-1991</b>	<b>Overground belt shape</b>
<b>Le Bernardan</b>	<i>Jouac (Haute-Vienne), France</i>	<b>1978-2001</b>	<b>Overground belt shape</b>
<b>Lavaugrasse</b>	<i>Bessines (Haute-Vienne), France</i>	<b>1955-1978</b>	<b>Overground belt shape</b>
<b>Le Brugeaud</b>	<i>Bessines-sur-Gartempe (Haute-Vienne), France</i>	<b>Mining: 1955-1972 Tailings storage: 1978-1987</b>	<b>Filled open pit + overground raising facility</b>
<b>Montmassacrot</b>	<i>Bessines-sur-Gartempe (Haute-Vienne), France</i>	<b>Mining: 1976-1981 Tailings storage: 1986-1989</b>	<b>Filled open pit + overground raising facility</b>
<b>Saint-Pierre</b>	<i>Saint- Pierre-du-Cantal (Cantal), France</i>	<b>1958-1985</b>	<b>Cross-talweg facility</b>
<b>Bertholène</b>	<i>Bertholène (Aveyron), France</i>	<b>1981-1994</b>	<b>Cross-talweg facility</b>
<b>Le Bosc</b>	<i>Lodève (Hérault), France</i>	<b>1975-1997</b>	<b>Filled open pits + overground raising facility</b>
<b>Gueugnon</b>	<i>Gueugnon (Saône-et-Loire), France</i>	<b>1955-1980</b>	<b>Overground belt shape</b>
<b>Digue des Fouilloux</b>	<i>Chalard, (Haute-Vienne), France</i>	<b>1982-2001</b>	<b>Cross-valley facility</b>

## 5.2. Gabon

The Mounana tailings facility was established in the bed of the Ngamaboungou river. The current containment structure for the tailings is a dam built in 1997 downstream of an earlier, lower dam constructed in 1990."

<i>Site</i>	<i>Location</i>	<i>Mining activity</i>	<i>Design</i>
<b>Mounana</b>	<b>Mounana, Gabon</b>	<b>1961 – 1999</b>	<b>Talweg+dam</b>

### 5.3. Canada

Full disclosure report and self-assessment is available [on-line](#).

## 6. Consequences Classification

In order to reach it's the Standard commitment, Orano Mining led in 2023 a self-assessment in order to classify each facility regarding to consequences in case of a breach. This first analyse has been improved based on expertise of EOR in 2024 and 2025 regarding each and every consequence items. Some facilities consequences classifications have been upgraded to high as the impact of a breach on water treatment could led to punctual acid flux within the environment.

The following Table 2 shows the up-to-date consequences classification validated by EOR.

**Table 2: Consequences classifications for Orano's tailing facilities**

Country	Tailings Name	Dimensions (m) Max height/length	Stored tonnage (Mt)	Break up Consequences
France	Bois Noirs Limouzat	42/508	1,3	Extreme
France	Bernardan	60/1 100	11,5	High
France	Brugeaud	22/500	7,3	High
France	Ecarpière	36/1 400	7,5	High
France	Lavaugrassse	20/200	0,7	Significant
France	Montmassacrot	22/1 700	1,9	Significant
France	Le Bosc (Lodève)	45/400	4,1	High
France	Bertholène	50/110	0,5	High
France	Gueugnon	15/140	0,6	Significant
France	Saint Pierre du Cantal	5/600	0,16	High
France	Fouilloux	45/220	2,1	High
Gabon	Mounana	13/200	0,7	High
Canada	JEB	38 (above ground)/600	3	Very high

## 7. Conformance level

The conformance level is calculated based on 219 sub-requirements of the 77 requirements classified under the 15 principles of the Standard. Those requirements that are not applicable are not considered in the calculation.

The following table is showing level of conformance for each facility.

**Table 3: Level of GISTM requirements conformance.**

Country	Site	Percentage of Conformance		
		Totally Met	Partially Met	Not met
France	Bois Noirs Limouzat	94,7%	1,7%	3,6%
France	Bernardan	94,7%	4,4%	1,0%
France	Brugeaud	94,7%	4,3%	1,0%
France	Ecarpière	94,7%	4,3%	1,0%
France	Lavaugrasse	94,7%	4,3%	1,0%
France	Montmassacrot	94,7%	4,3%	1,0%
France	Le Bosc (Lodève)	93,4%	5,3%	1,4%
France	Bertholène	87,9%	11,8%	0,9%
France	Gueugnon	86,3%	13,4%	0,9%
France	Saint Pierre du Cantal	81,0%	15,5%	3,4%
France	Fouilloux	82,3%	4,6%	13,1%
Gabon	Mounana	86,5%	2,3%	11,2%
Canada	JEB	100%	0%	0%

\* Bois Noirs Limouzat remediation project has mobilized both Orano Post Mining and engineering external support such as EOR for the last 3 years. Such a time-consuming project involving particularly EOR and RTFE impacted GISTM application for every one of the tailings facilities. Delays exist for some studies such as long-term stability studies, and hydrological analyses which lead to lower level of conformance for some facilities. Nevertheless, Orano mining set up an action plan for the end of 2025 in order to finalise all these studies and be able to present higher level of conformance across the 11 tailings facilities. For facilities such as Le Bosc, Bertholène, Gueugnon, Saint Pierre and les Fouilloux some requirements are not reached yet. Updated Long term stability studies and hydrological studies are ongoing and should be finalised by the end of 2025.

\*\* For Mounana facility, the conformance results are influenced by the local organizational context. Capability and availability of external emergency service can't be guaranteed, therefore, it is difficult to conduct emergency simulations with the participation of public authorities. A site-specific tailings facility Emergency Preparedness and Response Plan to be drafted considering the context and the associated challenges. The implementation is planned by September 2026.

\*\*\* JEB facility in Canada reached full conformance in October 2024.

## 8. Challenges and Mitigation plan to achieve full conformance.

### 8.1. France

The main challenges are complying with all requirements of principles 10, 13 and 15.

For principle 10, requirement 10.1 is not fully reached as we are not reviewing our risk evaluation as the facilities are remediated without any possibility to do more major modification. In case of important works

such as remediation project on Bois Noirs Limouzat or water treatment plan upgrade, we lead a risk assessment of the modification which is duly communicated to the local authorities.

For principle 13 the main challenge is testing the Emergency Response Plan. From a legal point of view, in case of an emergency, Orano will have to call the emergency Prefectorial department which will organise the Emergency Plan. Orano will be fully involved, and all employees will be dedicated to the Response plan. So far, the only test performed on regular basis is testing the on-call duty prefectorial department which is regularly testing for Bois Noirs facility as regulated by water dam requirements.

For principle 15, annual committees with stakeholders would not cover or overview all facility monitoring aspects such as piezometers, topographic monitoring and so. Some committees gather several facilities and mines sites which does not allow to present a complete review. A pre-meeting is hold prior to the formal Committee and stakeholders to set the agenda which is usually focused on water and air monitoring.

## **8.2. Gabon**

For principle 13, the main challenge is drafting a realistic Emergency Response Plan, considering the context and the associated challenges. Public sector agencies service can't be guaranteed.

In case of a tailing facility failure, Orano Mining will inform immediately the local authorities to launch the Crisis Unit which will coordinate and supervise actions in order to save lives and supply aid.

For principle 14, public sector agencies and other organisations that would participate in planning and delivery of any post-failure response strategies are identified. As well as local companies to support in case of Mounana tailing facility failure.

## **8.3. Canada**

The biggest challenge came from the significant amount of change and effort required in tailings management. There were new requirements for inspections, instrumentation monitoring and creation of new documents with many contributors. Many of the principles such as design and communities, compliance was already achieved from the many years of the development of the JEB TMF expansion to an "above ground" facility.

# **9. GISTM Implementation and innovation effort**

GISTM implementation brought a high level of monitoring challenges for France Post Mining Department of Orano Mining. The monitoring frequency requirement, disclosure clarity have pushed the team to think together from environment technician to database managers under the leadership of RTFE and his team. A complete review of all monitoring program was conducted and programs upgraded in order to reach the higher standards. Work is ongoing with database manager in order to proceed monitoring on mobile devices using pre-set forms for each monitoring aspect (water table level, visual inspection, drainage measurements). These forms will be directly linked with the central database allowing RTFE to follow monitoring with no time and launch actions with facility Responsible, such as measurement device maintenance or rainwater system maintenance. Theses application should be effective by the end of 2025.



OPIO : DIFFUSION NORMALE / UNRESTRICTED