



**Non-Technical Summary**  
of the Environmental and Social Impact  
Assessment of the Chvaletice\_Trnavka  
Tailings Reclamation Project

March 2024



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## Acronyms and Abbreviations

<b>Term</b>	<b>Definition</b>
CSR	corporate social responsibility
CZK	Czech Koruna
EBRD	European Bank for Reconstruction and Development
ESIA	Environmental and Social Impact Assessment
ESMS	Environment and Social Management System
EU	European Union
GHG	greenhouse gas
GRI	Global Reporting Initiative
km	kilometre
NTS	Non-Technical Summary
RSF	Residue Storage Facility
tCO <sub>2</sub> e	tonnes of carbon dioxide equivalent
UNGC	United Nations Global Compact
US\$	United States of America dollars
USD	United States of America dollars

## CHAPTER 1 INTRODUCTION

### 1.1 The Purpose of the Non-Technical Summary

This document presents a Non-Technical Summary of the Chvaletice\_Trnavka Tailings Reclamation (the Project). The purpose of this document is to provide interested stakeholders with information about the Project, expected environmental and socioeconomic benefits and potential adverse impacts, and MANGAN Chvaletice, s.r.o.'s commitments to managing and monitoring these opportunities and risks from construction through operation and closure.

The information provided in this Non-Technical Summary will allow stakeholders to understand the opportunities and impacts of interest to them and allow them to provide meaningful feedback on the Project, should they wish to do so. Comments and questions regarding the Project are welcome, and can be provided through the following contact information:

Online:	Email:	Telephone	In person:
<a href="http://www.manganchvaletice.cz/">www.manganchvaletice.cz/</a>	<p>Jan Votava, Managing Director <a href="mailto:jvotava@mn25.cz">jvotava@mn25.cz</a></p> <p>Marketa Sulova, Office and Communications Manager <a href="mailto:msulova@mn25.cz">msulova@mn25.cz</a></p> <p>Regular post:</p> <p>U Kulturniho domu 158, 533 12 Chvaletice, Czech Republic</p>	<p>00420 727 808 926 (Monday through Friday 09:00–17:00)</p>	<p>Project Information Centre in Chvaletice village</p> <p>U Kulturniho domu 158, 533 12 Chvaletice, Czech Republic</p>

### 1.2 What is the Chvaletice\_Trnavka Tailings Reclamation?

The Project refers collectively to the 26,644,344 tonnes of recoverable reserves of raw material (manganese tailings) located in a proposed mining area of 1.2 square kilometers within the municipalities of Chvaletice and Trnavka in the Czech Republic, around 90 kilometres (km) east of Prague (Figure 1). The Project is owned and operated by MANGAN Chvaletice, s.r.o. S.A (MANGAN Chvaletice, s.r.o.).

## **Chvaletice - Trnávka Tailings Reclamation Project**



*Figure 1: Location of the Project*

MANGAN Chvaletice, s.r.o. intends to undertake the following activities at the Project:

- Reclaim the 26.6 million tonnes tailings by excavation over a 25-year period.
- Complete construction a high-purity manganese processing plant for processing of approximately 1,070,000 tonnes of tailings per annum to produce approximately 50,000 tonnes of high-purity manganese products on a manganese metal basis.
- The production process is conducted in two stages. In the first stage, the high purity electrolytic manganese metal (EMM, purity higher than 99.9%) will be produced. In the second stage, a portion of the produced manganese metal undergoes processing to yield high-purity manganese sulphate monohydrate crystal (MSM, purity higher than 99.9%).
- Construction of a Residue Storage Facility (RSF) as part of the tailings recycling. As tailing material is gradually extracted and the useful component removed, it is neutralized and stabilised, and then will be returned to the remediated area (the same location of extracted tailings), which will be lined to meet modern environmental standards,
- At present the current tailings area is not lined. There is documented pollution within the area of interest, which spreads from the tailings area to the surrounding environment and the nearby flow of the Elbe. The intention is therefore not only to extract and obtain manganese, but also to stop the spread of contamination from the affected area to the surrounding environment and the Elbe River, thus remediating the area.
- Progressively rehabilitate the RSF area. There will be no influence on the surrounding landscape, only the section of tailings where earthworks will take place will be uncovered. The proposed method of biological reclamation will ensure rapid biological recovery of the area, fully rehabilitating the entire tailings in parallel with operation.



- Figure 2 shows the location of key features of the tailings, processing plant (to the south of the tailings); road routes; and key environmental and social features such as rivers/streams, villages/settlements/buildings, and industrial sites.

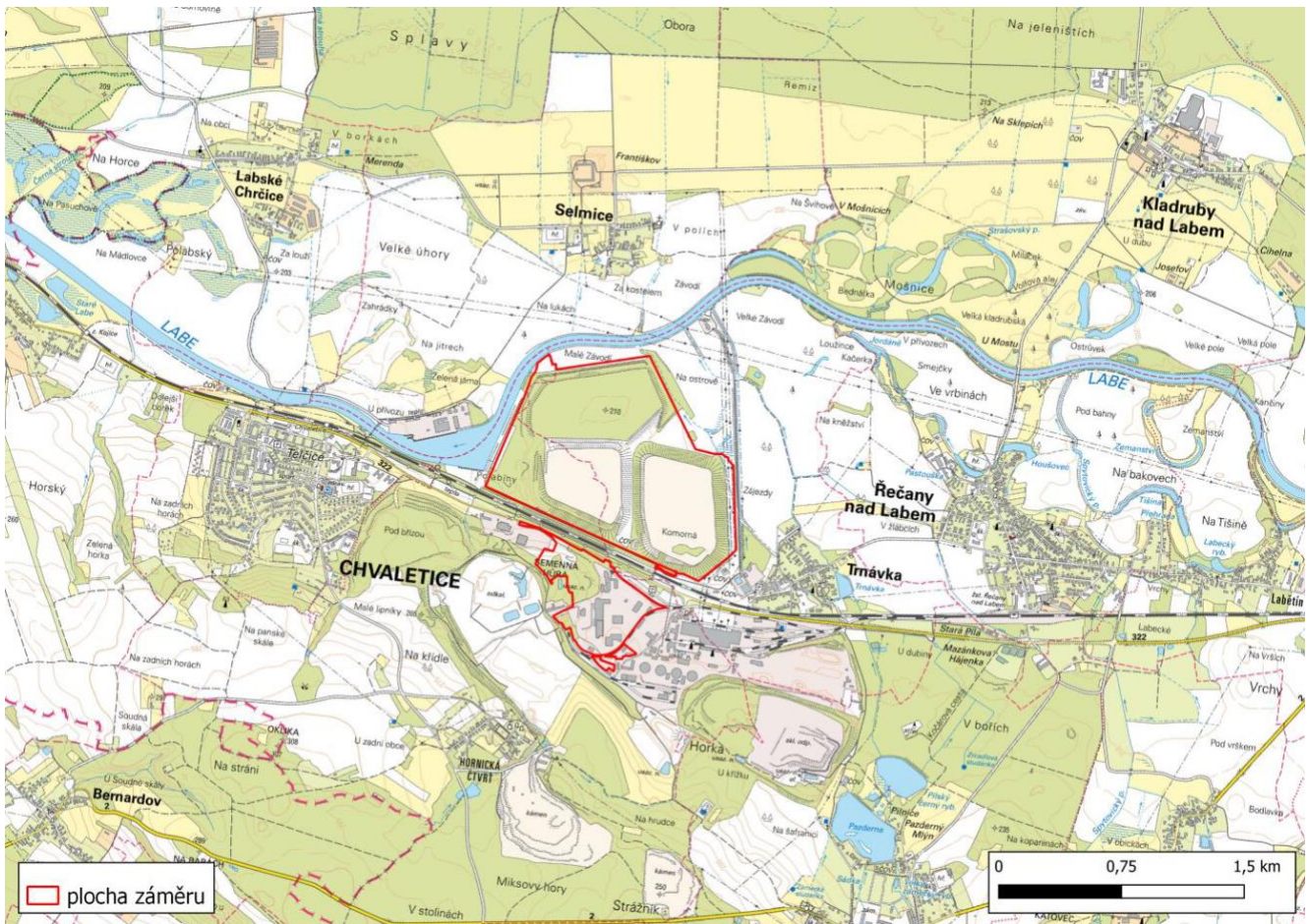


Figure 2: Regional Site Map Showing Regional Setting of the Project

### 1.3 Who is MANGAN Chvaletice, s.r.o.?

MANGAN Chvaletice, s.r.o. is headquartered in Chvaletice, Czech Republic. The company is a fully owned subsidiary of Euro Manganese Corporation, a Canadian head quartered battery materials company.

MANGAN Chvaletice, s.r.o. is dedicated to responsible operation, the highest safety and environmental standards, and working with stakeholders to enhance the communities where it operates.

MANGAN Chvaletice, s.r.o. has invested over \$40 million USD into the Czech Republic to date and has generated millions of CZK in payments to Czech suppliers and local salaries. MANGAN Chvaletice, s.r.o. is committed to local employment, including suppliers and contractor management; as such, MANGAN Chvaletice, s.r.o. shall be a significant employer throughout the Municipality of Chvaletice. And surrounding region. Eighty-five percent of MANGAN Chvaletice, s.r.o. direct workers are local residents. MANGAN Chvaletice, s.r.o. is anticipated to eventually employ approximately 400 people.

## **CHAPTER 2 MEETING STATUTORY REQUIREMENTS**

### **2.1 Overview of Project Requirements**

The Project must meet requirements set out by the Czech State as part of the legislated regulatory system and permit obligations. The Project is also committed to meeting international standards as set out in the Performance Requirements of the European Bank for Reconstruction and Development (EBRD) as part of its financing agreements and commitment to continuous improvement.

### **2.2 How has the Project met Czech Regulatory Requirements?**

Based on the Czech requirements for environmental permitting, MANGAN Chvaletice, s.r.o. completed an Environmental and Social Impact Assessment (ESIA) study for the proposed Project submitted this to the Department of Environmental Permitting (Ministry of Environment) in 2023 for review and approval.

The plan was discussed in a comprehensive form with state administration bodies, concerned and surrounding municipalities and other organizations (Ministry of the Environment, Department of Environmental Impact Assessment, Department of Environmental Risks and Environmental Damage, Regional Hygiene Station in Pardubice, Regional Authority of Pardubice Department of Nature and Landscape Protection and others).

Czech environmental legislation is aligned with the European legislation on EIAs and describes the process of review, consultation, and approval of the regulatory EIA for the Project.

In March 2024, MANGAN Chvaletice, s.r.o.'s mining and processing plant activities at the Chvaletice\_Trnavka Tailings Reclamation Project were granted the Environmental & Social Binding Statement, in effect the environmental permit with the conditions set by the Department of Environment by which the Project needs to comply.

### **2.3 How has the Project met Finance Requirements?**

In addition to meeting stringent requirements under the Czech regulatory process, MANGAN Chvaletice, s.r.o. has committed to meet the Performance Requirements of the EBRD as part of prospective financing and good international industry practice.

The EBRD requirements for environmental and social impact assessments (ESIA) align with those of the Czech regulatory ESIA process.



**Table 2-1: Supplemental ESIA Studies and Approach**

Biodiversity Assessment	<p>Building on MANGAN Chvaletice, s.r.o.'s biodiversity baseline data collected since 2015, additional data were collected to provide information on conflicts and potential impacts.</p> <p>The results were then screened to identify Critical Habitat and Priority Biodiversity Features and, where these were present, the importance of the landscape for their conservation. The impact assessment and mitigation planning were then focused on addressing all potential impacts on these important biodiversity values.</p> <p>In addition to the mitigation measures presented in the EIA to minimize the impact on the biodiversity, species and their habitats, offset measures have been proposed in the ESIA to satisfy EBRD's requirement for an overall no-net loss of Priority Biodiversity Features and a net gain in Critical Habitat values.</p>
Climate Change Risk Assessment	<p>Future climatic hazards, such as increased extreme weather conditions and/or frequencies, were assessed to determine whether additional engineering design measures are needed to prevent risks to the Project. In addition, the study assessed the degree to which Euro Manganese Corporation, as parent company of MANGAN Chvaletice, s.r.o., viewed climate risks within its overall enterprise risk management processes.</p>
Greenhouse Gas (GHG) Assessment	<p>Baseline GHG emissions were estimated for future operation. Emission reduction approaches are being considered during engineering and also with our suppliers.</p>
Socioeconomic Impact Assessment	<p>A detailed socioeconomic baseline was prepared using information from the regulatory ESIA as well as publicly available data sources. Additional information, focusing on the local communities around the Project, was gathered through interviews with key representatives.</p> <p>Anticipated socioeconomic impacts and opportunities associated with the Project were assessed with a human rights lens.</p>
Health Impact Assessment	<p>A separate study has been prepared to assess the impact on public health, and the author holds a certificate of competence for public health impact assessment (HIA) under the Ministry of Health.</p> <p>The Project under consideration is assessed as insignificant in terms of the potential impact on public health due to the spread of the assessed air pollutants and noise effects, if the proposed compensatory measures are implemented, and will not worsen the burden on the affected population compared to the current situation.</p>
Surface and Groundwater Impact Assessment	<p>The impact on groundwater and surface water is assessed in a separate study. The assessment is based on further specialist studies based on drilling, hydrogeological monitoring, groundwater and surface water quality surveys and groundwater flow modelling from 2015 - 2023.</p> <p>In relation to the quality of surface water in the Elbe River and the quality of bottom sediments, the implementation of the Project will have a clear beneficial effect according to the assessment.</p> <p>In terms of water planning (EU Directive 2000/60/EC), the Project will not cause deterioration or failure to achieve good chemical status and ecological potential of the surface water body and will not lead to a negative change in the quantitative and qualitative status of the surface water body concerned or hinder the achievement of the objectives of the Water Framework Directive.</p>
Noise Impact Assessment	<p>The Project is located in an acoustically problematic area with many establishments that are stationary noise sources and also with linear noise sources, i.e. railways and roads. For this reason, the assessment was comprehensive and all existing relevant noise sources were considered and mapped in great detail. The acoustic study has taken into account the stricter requirements for acoustic protection in the area and the noise impacts from the operation of the Project, from rail and road traffic with implementation of the compensation measures have been assessed as insignificant.</p>
Air Impact Assessment	<p>Based on the assessment, the impact on air quality is assessed to be insignificant, both during the construction and operation phases, and with respect to the exposure to odorous substances.</p>

EBRD Performance Requirement 1 (PR 1) requires that the findings of the impact assessment process and stakeholder engagement are captured within a series of formal actions or commitments to address environmental and social impacts of the Project. The following management plans and framework plans have been developed or are in progress and will be disclosed with the ESIA and

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next stages of permitting processes:

- Environmental and Social Management System Framework
- Water Resources Management Framework
- Biodiversity Management Plan
- Biodiversity Offset Strategy
- Traffic and Transport Management Framework
- Community Development Management Framework
- Community Health, and Safety Management Framework
- Labour Management Framework
- Conceptual Closure Management Framework
- Non-Mineral Waste Management Framework
- Air Emissions Management Framework
- Noise and Vibration Management Framework
- Cultural Heritage Management Framework
- Emergency Response Plan<sup>1</sup>
- Security Management Framework<sup>2</sup>
- Hazardous Materials Standard Operating Procedures (SOP)

<sup>1</sup> As necessary to maintain Project security and manage confidential information, some sections of the Emergency Response Plan have been redacted from public disclosure.

<sup>2</sup> As necessary to maintain Project security and manage confidential information, some sections of the Security Management Framework have been redacted from public disclosure.

## 2.4 Where Can I Find the ESIA?

To provide potentially affected stakeholders with appropriate information about the Project, potential impacts and opportunities, and proposed management measures, the results of the regulatory the ESIA study will be disclosed. This Non-Technical Summary provides a high-level summary of the regulatory ESIA study. The full study is available for public review through a number of access points.

Electronic copies of the full ESIA study may be reviewed and downloaded from the following sites:

- Czech version - MANGAN Chvaletice, s.r.o. website: <https://http://www.manganchvaletice.cz/> and Ministry of Environment website: [https://portal.cenia.cz/eiasea/detail/EIA\\_MZP499?lang=cs](https://portal.cenia.cz/eiasea/detail/EIA_MZP499?lang=cs)
- English version - Euro Manganese website: <https://www.mn25.ca/>
- English version - EBRD website: <http://www.ebrd.com/esia.html>

## CHAPTER 3 PROJECT DESCRIPTION

### 3.1 Project History

The presence of manganese and iron minerals was first recorded near the present-day village of Chvaletice in the 1800s, and sporadic, localized mining of the Chvaletice ore body took place during the early 1900s. Starting in the 1930s, ore was processed for the recovery of manganese and shipped by rail to steel mills in Czechoslovakia and Germany. Between 1951 and 1975, the focus turned to the extraction of pyrite, which was used to produce sulfuric acid for various industrial clients. The waste from these operations created the three existing tailings piles that form the Chvaletice deposit. The piles were rehabilitated with a layer of topsoil and trees planted between 1975 and 1983.

In the late 1980s, Bateria Slany - a Czechoslovakian state-owned battery producer - undertook extensive studies of the tailings to determine the feasibility of producing manganese dioxide for the production of dry cell batteries. Although Bateria Slany confirmed the presence of a significant and economically attractive manganese carbonate resource, it halted development following the political regime change that was initiated in 1989, which brought about the end of communism in Czechoslovakia and the establishment of an independent Czech Republic. The deposit lay dormant until its mineral rights were granted in September 2014 to a Czech group of companies. The rights to the Project were then consolidated to form a jointly-owned holding company, Mangan Chvaletice s.r.o. In May 2016, Euro Manganese Inc. acquired 100% of Mangan Chvaletice s.r.o..

Early investigation work conducted during 2015 and 2016 was focused on:

- confirming the results of earlier exploration, metallurgical and engineering studies conducted by a Czechoslovakian State-owned company in the 1980s
- determining the manganese content and mineralogy of the Chvaletice tailings
- conducting legal and environmental due diligence investigations
- conducting exploratory beneficiation, leaching and purification tests on the tailings samples
- developing a conceptual process flowsheet to produce high purity electrolytic manganese metal
- initiating environmental and hydrogeological baseline studies
- market investigations

Since the acquisition of the Project, Mangan Chvaletice s.r.o., under Euro Manganese Inc. ownership, set out to achieve several key objectives to advance the Project. These included completion of:

- environmental baseline studies
- an extensive drilling assaying to updating the Mineral Resource Estimate and resource estimation program
- a comprehensive beneficiation and hydrometallurgical test work program
- an extraction and reclamation plan development
- advanced process flowsheet development
- community engagement and consultation on an ongoing basis
- a preliminary economic evaluation (PEA) published in June 2019
- market studies to feed into the feasibility study

- a Feasibility Study (FS) published in July 2022
- a Life Cycle Assessment published in August 2022
- Construction of a demonstration plant on-site at Chvaletice
- Acquisition of EP Chvaletice, that owns an industrial area adjacent to the tailings and was the location of the former pyrite processing operation for the production of sulfuric acid

### 3.2 Project Components

The Project consists of two area, these are:

- Chvaletice – Trnavka Tailings area, known as the Protected Deposit Area.
- The processing plant area of EP Chvaletice, shall be in an existing industrial area, which may be described as brownfield, and situated to the south of the Protected Deposit Area.
- The two areas are separated by road no. 322 and the 010 Prague – Česká Trebová railway corridor. For this reason, and in order to minimize the traffic burden on local roads, the transport of tailings to the processing plant will use a belt conveyor located on a closed technological bridge (cross-section of about 2x2 m), which crosses the road and the railway corridor and connects both area of the Project.

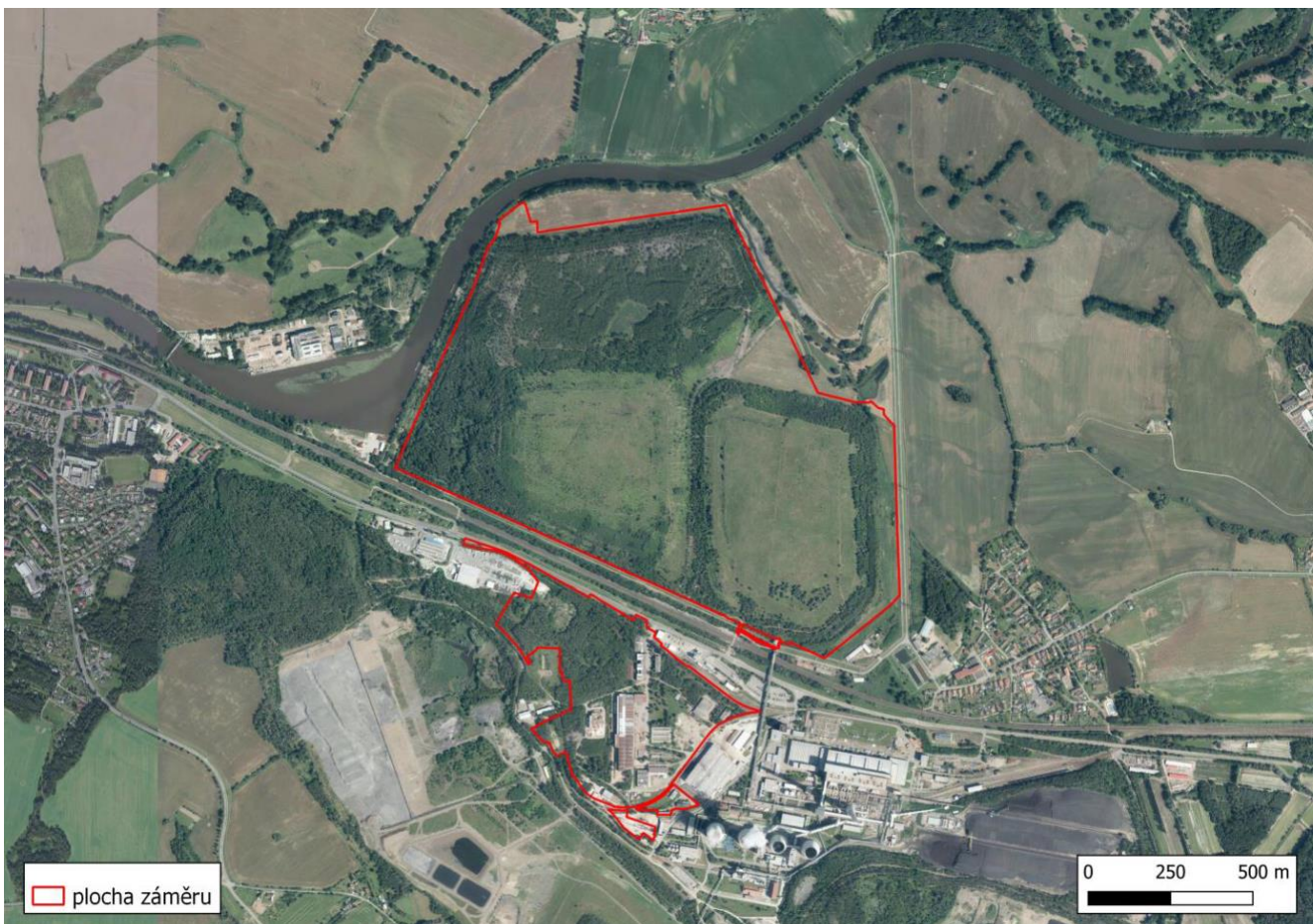


Figure 3: Location of the Protected Deposit Areas to the North and Processing Plant Area to the South





*Figure 4: Visualization of the Processing Plant Area*

### **3.3 What Activities Are Proposed?**

The main activities proposed for the Project are listed below and divided into the mining area and the processing plant area.

The following activities will take place in the mining area:

#### **Overburden Work**

- Overburden work will be carried out well in advance of mining operations. Woody plants will be removed before overburden removal is carried out. Topsoil overburden with humus will be carried out separately.
- Topsoil from the overburden will be transported directly to the site for remediation and reclamation of the area to sustain the planted vegetation, i.e. the top soil overburden in the mining area will be used to remediate the Residue Storage Facility ("RSF:) containing the material after ore treatment (mining waste) by covering the RSF once the top lining has been put in place.
- If, in a given period, the amount of topsoil overburden exceeds the need for material for the remediation and reclamation area to be worked on, the material will be stored in intermediate landfills.

#### **Mining Work**

- All mining and processing activities will take place within MANGAN Chvaletice, s.r.o.'s granted mining leases. The mining area is divided into three separate units. On the north side it is the tailings cell No. 3, on the southwest side it is the tailings cell No. 1 and on the southeast side it is the tailings cell No. 2.
- The main mining method was chosen is using excavators on a tracked chassis working together with haulage trucks. Mining operations will be carried out in individual layers with gradual drainage of the base through a system of canals and sumps.
- As the tailings have already been through a historical process for recovery of pyrite, no blasting, crushing or grinding is required.



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- The tailings raw material has an average moisture content of about 21%, the deposited mining waste about 18 - 20%. Extraction and storage of material takes place 5 days a week, which does not allow the material to dry in the area of mining and storage. The handling of the material with this natural moisture content will be practically dust-free. Significant dust levels can therefore only be considered during prolonged drought periods with windy weather. In this instance sprinkling will be carried out, mainly on roads where the surface dries quickly and the movement of the vehicles may cause swirling dust.

### **Preparatory Work for the Disposal of Mining Waste**

- After mining, the base for the RSF for disposal of mining waste will be levelled and the base layers and protective lining insulation material will be installed. The RSF for the disposal of mining waste will be prepared on a continuous basis, immediately after the end of mining in the given area.

### **Mining Waste Disposal**

- Mining waste will be deposited in layers (deposited by haulage trucks, spread by a bulldozer, and compacted by a roller).

### **Physical Reclamation of the Area**

- The gradual disposal of mining waste will result in a final shape of the RSF, which will be in keeping with the original topography of the area. The surface shape will allow drainage into a natural micro-catchment area in the central part of the reclaimed area.

### **Biological Reclamation of the Area**

- Biological reclamation will allow the biological revival of the remediated areas so they can be handed back to the landowners for subsequent use. A combination of natural and recreational functions is assumed.

The actual production process will take place on the premises of the processing plant, consisting of the following phases:

#### **Tailings Transport**

- The recovered tailings will be pulped in a pulping facility and the resulting slurry will be pumped through a pipeline placed on a technological bridge that will run over road No. 322 and the railway line, connecting the mining area with the processing plant.

#### **Magnetic Separation**

- Under the influence of an intense magnetic field, manganese compounds are concentrated.
- The recovered concentrate and non-magnetic tailings will be dewatered using thickeners and filters. Non-magnetic tailings and solid residues from leaching will be deposited back into the RSF at the mining area in the form of dry stacked tailings.
- Deployment of dry stack tailings minimizes the impact on the environment by recycling more water, which results in reduced water requirements, the risk of groundwater contamination, and the overall tailings footprint. It also provides significant safety improvements by reducing the geotechnical risks of the disposed tailings.

#### **Leaching & Purification**

- The concentrate from the magnetic separation will be leached in dilute sulfuric acid. The

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extracted liquor, containing dissolved manganese in a sulphate form, will be purified to remove undesirable impurities.

### Electrowinning

- Manganese metal will be obtained from the manganese sulphate solution by electrowinning, which further purifies the manganese, which will then either be packed in barrels and shipped to customers or used in the second stage for the preparation of manganese sulphate monohydrate.

### Production of Manganese Sulphate Monohydrate

- The manganese metal obtained in the first stage of production will be dissolved in dilute sulfuric acid, resulting in a solution of manganese sulphate. Subsequently, it will be further purified to remove impurities introduced by the sulfuric acid, then evaporated, crystallized, and dried to form the final product, manganese sulphate monohydrate.
- The products will be placed in large bags then be shipped by road or rail to end customers in sealed shipping containers.

## 3.4 How Will Water Be Managed by the Project?

Water is an important consideration in mining; water will be used for drinking, hygienic and technological purposes. The Project will utilize several water sources

### Drinking water sources

- Public water mains
- Drinking water will be used for hygienic, sanitary, and other needs of employees.

### Industrial water sources

Industrial (process) water will be taken from several sources listed below:

- Captured mine water from the area of mining and reclamation, will be used to mix with the raw material.
- Captured rainwater from the area of extraction and reclamation. Clean rainwater will be generated in the areas of the repository where reclamation has been completed. This water will not be used in the process, it will be collected in a retention tank in the center of the repository and from there it will be discharged in a controlled manner into the Elbe.
- Collected rainwater from paved areas in the technical area of the Protected Deposit Area, can potentially be contaminated, and will be collected in a water storage tank. In the technological process, this water will be used in four ways i) mixed with raw material for its transport to the processing plant, ii) for the leaching of raw material, iii) for washing mobile mechanisms and iv) for anti-dust/sprinkling measures.
- Collected rainwater from paved and handling areas in the processing plant (roads, handling areas and other paved surfaces) can potentially be contaminated. This water will be collected separately from clean rainwater in a retention tank and will be used as industrial water. In case of emergencies, this water will be drained to a wastewater treatment plant and after its treatment it will be subsequently discharged into the Elbe.

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- Collected clean rainwater from the area of the processing plant (roofs, green areas, etc.) is also a potential source of industrial water.
  - Water from the Chvaletice Power Plant. Bleeding water from the Chvaletice power plant cooling towers will be the main source of process water. The cooling tower bleeding water is currently being discharged into the Elbe. The planned amount of bleeding water for process purposes is significantly lower than the amount produced by the Chvaletice power plant.
  - Water from the Chvaletice power plant – feed water, shall be used to feed steam boilers and subsequently for steam production.

#### **Fire water sources/hydrant circuit**

- The source of fire water of the Project will be a connection to the fire water circuit of the Chvaletice power plant and KASI FOUNDRY a.s. (this connection already exists at present; the existing system will be modified).

### **3.5 How Will Air Emissions Be Managed by the Project?**

Dust emissions will be controlled by:

- Applying engineering controls on significant emission sources such as using scrubbers, filters, closed tube conveyers and other technical measures; and
- Using water systems to reduce the dustiness of cleared areas (e.g., during construction), ore stockpiles, and road surfaces.

Filters shall be installed in the exhaust stacks of the processing plants. The filters improve the quality of emissions exiting the exhaust stacks.

Air emissions at key emission points will be monitored by MANGAN Chvaletice, s.r.o. for compliance against the criteria of the Environmental Permit.

## CHAPTER 4 STAKEHOLDER ENGAGEMENT

### 4.1 How Has the Project Engaged with Stakeholders?

The ESIA process in The Czech Republic reflects European Legislation for ESIA disclosure and engagement requirements; this includes consultation with authorities and organization of public meetings by regional councils in which citizens can participate and express their opinion.

In addition to Czech regulatory requirements, the Project has adopted EBRD principles of information disclosure and stakeholder engagement over the life of the Project. This includes:

- Identification of people, groups, communities, and vulnerable people that are, or could be, affected by the Project, as well as other interested parties;
- Appropriate engagement with these stakeholders on environmental and social issues that could potentially affect them through a process of information disclosure and meaningful consultation; and
- Facilitation of constructive relationships with stakeholders through ongoing and meaningful engagement during Project implementation.

MANGAN Chvaletice, s.r.o. organized stakeholder engagement through numerous Project presentations and discussions with municipal representatives and the public to facilitate open conversation and information sharing.

The purpose of the engagement meetings was to:

- Share relevant information about the Project and forthcoming ESIA process;
- Understand concerns, grievances, and questions that stakeholders may have about the Project;
- Receive feedback from stakeholders about Project plans; and
- Share plans for disclosure of the regulatory ESIA.

As part of its stakeholder engagement work, the Project has hosted ten major public presentations for seven local villages, conducted numerous site tours of the Project site for local civic leaders and residents, and presented the Project to many small groups and individuals, including regional and civic permitting authorities, mayors, municipal boards and local schools. Based on the outcomes of these intensive community consultations and the initial Ministry of the Environment screening procedure, the Project has been well-accepted by stakeholders, with no critical concerns.

At the very beginning of the Project we set up an information centre in the local community centre, which is open to the public. This facility is accessible to members of the public and is in the centre of the Chvaletice Community, allowing stakeholders to visit at their convenience. As well as the information centre in the Cultural Palace, several specific stakeholder engagement events have been organised within the vicinity of the Project.

These events include:

- Discussions with citizens about the Project where they can ask questions.
- Excursions to the tailings - citizens had the opportunity to visit a guided tour of the tailings, which has otherwise been inaccessible to the public for decades. They were able to see the condition of the site and ask questions.
- Discussions with school children about career choices - pupils from the final year of a local primary school visited us and had the opportunity to learn about a Project that could one day provide them with job opportunities.
- We also held competitions in local schools where young people had the opportunity to express how they would imagine the use of the current inaccessible tailings after the end of the Project.
- At Easter and Christmas, we organized informal meetings with local people, who together with our employees had the opportunity to talk about the Project while knitting Christmas wreaths or Easter pom poms.

To keep all local citizens informed, not only those who attend our events, we publish a magazine and send out a Christmas letter summarizing the news of the Project. With the same aim we have also created a local Project website aimed at citizens and journalists. We have based their content mostly on Q&A.

Daily monitoring of the press and other media is also an important part of communication. We keep a regular record of all mentions of our Project in the media. We are in regular contact with the journalists who cover our Project and provide them with up-to-date information, and they can also visit us at the Project site where we organize tours for them.

We also keep detailed records of all important meetings with stakeholders. This helps us to trace back topics and conclusions from previous meetings.

MANGAN Chvaletice, s.r.o. has committed to develop and implement a zero-tolerance policy for retaliation against workers and external stakeholders, such as third parties / Project-affected people, and civil society organizations (CSOs), and will engage with stakeholders on this commitment.

The established Grievance Management Framework provides a means through which stakeholders can raise concerns at no cost and without risk of retribution or retaliation. The privacy of participants (including human rights defenders, CSOs, and others) is protected during the engagement process, including when using online tools. One way to ensure this is to provide the possibility of submitting feedback through online untraceable forms. People raising grievances throughout the lifetime of the Project will have the possibility to remain anonymous if they choose.

Throughout the life of the Project, MANGAN Chvaletice, s.r.o. will raise staff awareness and build capacity on reprisal risk to help facilitate an open feedback culture and support efforts to prevent reprisals, through communicating the company's policies and position on retaliation to workforce and stakeholders.



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## 4.2 What Have Stakeholders Said about the Project?

Stakeholder feedback from the engagement meetings is summarized below:

Initially, concerns were evident among stakeholders about the design of our Project. Most often they feared a deterioration in environmental quality, particularly noise impact and potential air emissions. As engagement with stakeholders increased their concerns diminished. On the contrary, it is evident that people have started to realize the positive benefits that our Project can bring. Here, progress in communicating is still visible and we have gained trust not only by the frequency of the events we organized, but also by meaningful and prompt responses to their questions.

Most stakeholders requested increased transparency and engagement in the form of regular public consultations to provide opportunities to address questions and misconceptions and build a relationship of trust.

Stakeholders had expectations for the Project to bring new job opportunities at the local level and economic growth in the area. Clear information and messaging around employment opportunities was highlighted as a priority. Enquiries, phone calls, emails asking about job opportunities are very common. Our current employees are mostly recruited from among local residents who are obviously satisfied with their work and give feedback to their fellow citizens.

## 4.3 How Can Stakeholders Have a Say in the Project?

The Project is committed to ongoing, facilitated engagement with stakeholders. This includes the following:

- **Disclosure:** MANGAN Chvaletice, s.r.o. will provide stakeholders and interested parties with an opportunity to learn more about the Project and provide feedback on Project activities, impacts and opportunities, and proposed mitigation and enhancement measures. Opportunities to provide feedback are described the Project Stakeholder Engagement Plan.
- **Grievance Mechanism:** Stakeholders can communicate any concern, comment, question, or suggestion related to the Project via online submissions, email, telephone, or in person. Anonymous concerns/complaints will be accepted. Communications will be reviewed, considered, and addressed without risk of discrimination or retaliation in line with MANGAN Chvaletice, s.r.o.'s Human Rights policy.
- **Ongoing Engagement:** MANGAN Chvaletice, s.r.o. is committed to continued engagement with affected stakeholders and communities on an ongoing basis to disclose Project information, understand concerns and priorities, and incorporate feedback into Project operation where possible. Engagement will be carried out through meetings, newsletters, Project website, and social media.

## CHAPTER 5 WHAT ARE THE BENEFITS AND OPPORTUNITIES OF THE PROJECT?

MANGAN Chvaletice, s.r.o. has committed to three main pillars as part of the Project: employment, financial benefits for Czech Republic, and environmental protection.

### 5.1 Social and Economic Investments

A maximum of 800-1000 direct jobs will be created during the construction period of 3 years. The maximum number of people at any one-time during completion will be approximately 500. During peak operation, the Project will employ 380 - 400 direct staff. Mandatory social security and health insurance contributions can be expected depending on the size of statutory contributions in the year of commencement of operation. When advertising for and hiring employees, MANGAN Chvaletice, s.r.o. will give preference to people living in the local region of the Project. In addition to skills development through on the job experience, MANGAN Chvaletice, s.r.o. will offer training opportunities for employees to improve and advance their skills.

Potential additional (secondary) jobs will be created in the field of transport, logistics, as well as outsourced services necessary for the normal operation of the plant. A theoretical impact can also be expected for potential suppliers of selected raw materials.

MANGAN Chvaletice, s.r.o.'s planned investment is expected to be around US\$1 billion over the Project's lifetime.

The Czech State will receive CZK 2,308 per tonne of manganese (CZK 115.4 million per annum) in terms royalties, 38% of which flows down to the local municipalities. The Municipality of Chvaletice also receives annual rent as part of a Land Access Agreement. The funds to the municipalities of Chvaletice and Trnavka will represent a significant increase in regular income and will contribute in the long term to an increase in the investment activity of both municipalities and indirectly will be reflected in an increase in the quality of life (depending on the nature of the investments).

In addition, it is estimated that the Czech State will receive more than US\$2.8 billion in terms of taxes collected and social benefit programmes, benefiting both the local and national economy.

Additionally, we must acknowledge the potential to reshape the image of the Czech Republic as a distinctive hub for high-purity manganese product manufacturing. With this Project, the Czech Republic could position itself as the leading manganese producer in Europe. Furthermore, there is the potential to forge connections with regional vocational schools through internships, student part-time employment, or one-time company presentations, establishing a pathway for graduates to become potential job candidates.

The social and economic effects can be assessed as long-term and favourable.

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## 5.2 Environmental Improvements

The Project aims to improve the current state of the environment, with initiatives focused on the following key improvements:

- Rehabilitation of the Chvaletice\_Trnavka Tailings will reduce the identified contamination of groundwater and surface water in the tailings and its vicinity, where the source of the pollution is demonstrably deposited material. The excavation of the tailings can be considered a positive intervention. As mining progresses, the surface of the tailings will be drained, and rainwater captured on the surface of the bodies will be drained away from the mined area. This will significantly reduce the volume of surface water infiltrated into the stored material and thus reduce the leaching of pollutants from the tailings into the groundwater.
- At the end of operation, an increase in biodiversity will exist at the site compared with existing conditions as a result of rehabilitation works.
- In line with global advancements in tailings management, waste material produced at the processing plants will be filtered to remove most of their water content. This will provide multiple environmental benefits including reduced water consumption (by increasing water recycling), a smaller waste disposal footprint, increased geotechnical stability, and a reduced risk of contaminants seeping out from the RSF.
- The existing water treatment infrastructure will be upgraded to further reduce the Project's impact on the water environment. In addition, the water management system aim at the maximization of the water recycling rates and the improvement of environmental quality in the wider area of Chvaletice\_Trnavka Tailings Reclamation.

## **CHAPTER 6 PROJECT IMPACTS AND MITIGATION**

While the Project will result in significant benefits and opportunities for The Czech Republic, and the Municipality of Chvaletice and Trnavka, mining carries potential environmental and socioeconomic impacts, if carefully designed embedded controls are not implemented. These have been carefully assessed through the ESIA studies to identify potential concerns and manage them through application of best available techniques and good international industry practice over all the Project elements.

### **6.1 How Were Impacts Assessed?**

The assessment first analyzed the existing (baseline) conditions found within the Project area. The potential impacts of construction, operation, and closure were then identified.

The significance of impacts was assessed for the Project as a whole. Potential cumulative impacts of the Project with impacts from other (non-MANGAN Chvaletice, s.r.o.) developments or activities in the surrounding area were also considered.

Where potentially significant impacts were identified, mitigation measures were proposed. Mitigation measures were applied in the following order of preference: avoid, minimize, and rehabilitate.

## CHAPTER 7 WHAT ARE THE RESULTS OF THE IMPACTS ASSESSMENT?

### 7.1 Environmental Impacts

The following presents a summary of key environmental impacts considered for the Project. Complete analysis is presented in the regulatory ESIA, section 3 Output Data.

#### 7.1.1 Water Resources

The Project is situated in part of the main Elbe River Basin. This river extends into the site through its floodplain, however only the edge of the tailings is in direct contact with the floodplain. The tailings areas themselves are not at risk of flooding due to their morphology. In the case of one in 20-year flows, the tailings are partially protected by an earth embankment at the northern, north-east and northwest edges. Thanks to this dam and the influence of geomorphology, the bodies of tailings ponds 1 and 3 are protected against flooding during flood flows. During flood flows, the water level extends only to the eastern edge of the tailings pond 2. This embankment shall be raised as part of the Project to increase against flood flows.

The chemistry of groundwater in the tailings and in its vicinity, as well as in the wider surroundings, is significantly influenced by anthropogenic activities. The source of groundwater and surface water pollution in the territory is the original mining activity at the site, tailings depot and tailings bodies, as well as the coal and fly ash inter-depots of the power plant and the MSW (municipal solid waste) landfill. Regular monitoring has been taking place in the wider area of interest since 2016 in boreholes in the area of the tailings or in its immediate vicinity, older boreholes and wells in the area of Řečany nad Labem and Trávkvy.

Groundwater samples from the area of the tailings and its immediate surroundings show a significant increase in the concentrations of some parameters, especially manganese, sulphates, iron, aluminium, ammonium ions and in some cases also in chromium, lead, zinc

Surface water samples taken in the eastern foreground of tailings show similar pollution as groundwater from tailings and their immediate surroundings. Increased concentrations of manganese, sulphates and iron are recorded.

It is assumed that the monitoring will continue throughout the preparation and implementation of the plan and even after the termination of the activity.

The ESIA assessed potential impacts on surface and groundwater resources. Regarding the identified contamination of groundwater and surface water in the tailings and its vicinity, where the source of the pollution is demonstrably deposited material, the excavation of the tailings can be considered a positive intervention. As mining progresses, the surface of the tailings will be drained, and rainwater captured on the surface of the bodies will be drained away from the mined area and consumed in the processing plant. This procedure will significantly reduce the total volume of surface water infiltrated into the stored material and thus reduce the leaching of pollutants from the tailings into the groundwater of the collector of the Quaternary Elbe terraces and subsequently into surface water.



### 7.1.2 Biodiversity

The aim of remediation and reclamation is to create a near-natural area with high biodiversity and stability, which will be able to be used for recreational and sports activities.

To increase the biodiversity and overall diversity of the environment after changes in the shape of the relief related to the transfer of matter within the deposit, it is necessary to create such conditions that will lead to the creation or strengthening of ecological, aesthetic, water management and landscaping functions in the area of interest.

From the point of view of nature conservation and the above-mentioned functions, the Remediation and Reclamation proposal worked with the following basic points:

- the creation of terrain depressions as a living aquatic ecosystem;
- to ensure the greatest possible water subsidy, shape the hopper area as one micro-basin (most areas with a minimum slope with runoff in the direction of the water features);
- a more detailed morphology of the terrain is suitable for more rugged area;
- For the proper thriving of planted tree species, a minimum layer of fertilizable soils of 1.5 – 2 m is necessary and then the top humus layer.

At the same time, the objectives of remediation and reclamation were chosen to respect the document "Biodiversity Protection Strategy of the Czech Republic for the period 2016–2025 (Ministry of the Environment, 2016)", which defines priorities in the field of protection and sustainable use of biodiversity in the Czech Republic. These include, for example:

- maintain or increase the extent of natural habitats;
- improve landscape structure;
- improve the permeability of the landscape to biota;
- reduce pollution and improve physico-chemical water quality;
- increase the retention capacity of the landscape;
- increase the share of reclamation of areas after mining by spontaneous succession.

### 7.1.3 Biological reclamation

The proposed remediation and reclamation, facilitated by modelling of the terrain as one micro-basin will ensure the accumulation of rainwater in shallow terrain depressions and thus allow the formation of wetland communities. Simultaneously, the varied topography of the terrain, with its rugged features, will enhance the diversification of site conditions. In combination with subsequent biological reclamation (forest-free areas, forest, scattered greenery), this strategy will contribute to higher biodiversity in the area. The proposal respects the proposed measures to minimise impacts on fauna, flora and ecosystems.

The following types of biological reclamation are proposed in the area of interest:

- A – areas of grass-herb communities (65.34 ha)
  - B – continuous planting of trees (35.71 ha)
  - C – shrubs and loose planting (22.61 ha)
  - D – dry polder
  - E – succession areas without humic substrate (3.62 ha)
-

- F – forest park (1.38 ha)
- G – terrain depression – periodically flooded waters (0.31 ha)



Figure 5 Visualization of the Rehabilitated Area at Project Closure

#### 7.1.4 Ecosystem Services

The submitted proposal for the Project is consistent with the effort to create a biologically diverse area with the potential for the gradual creation of natural habitats. This will guarantee a higher ruggedness of the area with more natural landforms and the creation of a micro-basin with a central water surface and wetland communities.

The implementation of the plan represents the destruction of current habitats, which can be evaluated positively in terms of biodiversity. The occupation for mining activities will be gradual and temporary, and after remediation and reclamation, biotopes will be created that are at least as valuable in terms of biodiversity as they are at present.

In view of the above, the impact on ecosystems, biotopes and biodiversity is generally assessed as unfavourable for the duration of mining and reclamation, i.e. long-term, but very well compensated by protective measures. The influence is reversible. After the completion of remediation and reclamation, the impact is evaluated as insignificant and potentially even favourable.

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### 7.1.5 Land and Soils

According to the National Heritage Institute, no World Heritage Sites, national cultural monuments, or cultural monuments administered by the National Heritage Institute are registered within the Project area.

The nearest UNESCO World Heritage Site is the Landscape for Breeding and Training of Ceremonial Carriage Horses in Kladruby nad Labem, located about 200 m north of the Project area, on the other side of the Labe River. The stud farm is the oldest continuously existing stud farm in the world, which was founded in 1579, still serves its original purpose today. It represents an area that connects a unique national cultural monument, which documents the centuries-old breeding and training of the unique breed of Kladruby horse and its broader context in related. Details of the landscape conservation area and the protective zone of the Stud Farm National Park in Kladruby nad Labem are given in Chapter B.1.8. of the ESIA.

To mitigate any impact on landscape character the overall height of the RSF will not be increased compared to the present topography, thereby an assessment of the landscape character shows an insignificant impact.

Practically the entire area of the area of interest is covered by soil formed or created from man-made substrates obtained during mining and construction activities, because it is a body of anthropogenic origin and an area of brownfield character. Therefore, the vast majority of the area of interest does not contain agricultural land resources. Only at the northern edge and in the eastern part does the proposed Project marginally extend into land of average and below-average production (less than 5% of the Project area).

Measures to minimize these impacts include the following:

- Sensitive clearance, handling, and storage of topsoil, including careful storing of soils for future rehabilitation works;
- Implementation of appropriate soil erosion and sediment controls; and
- Progressive rehabilitation of disturbed land to allow future, non-mining land uses to continue after the cession of operation.

### 7.1.6 Greenhouse Gases

As an industrial activity, the Project will unavoidably generate greenhouse gas (GHG) emissions. The key sources of GHG emissions from the Project are:

- Fuel consumption
- Decomposition of carbonate minerals
- Electricity consumption

The total GHG emissions have been estimated by forecasting the amount of fuel, and electricity to be consumed throughout the life of the Project as well as the decomposition of carbonate minerals.

The forecast total GHG emissions related to diesel fuel for the Project is 2,700 tonnes of carbon dioxide equivalent per year (tCO<sub>2</sub>e; an index used to compare the global warming potential of various GHGs

in terms of the equivalent amount of carbon dioxide). Although most of the thermal energy will be taken from the power plant, additional superheated water is required for some applications that will require steam to be generated by burning natural gas. Emissions from this combustion were estimated at approximately 33,000 – 52,000 tonnes per year.

During the process of leaching the concentrate with sulphuric acid, carbonate minerals are decomposed to form CO<sub>2</sub>. To reduce the environmental impact of the Project, waste CO<sub>2</sub> is used for carbonate precipitation of process by-products, which leads to an overall reduction in CO<sub>2</sub> emissions. The total amount of CO<sub>2</sub> emissions produced and released into the atmosphere from the raw material processing process per year is about 59,000 tonnes.

Electricity will be consumed, the main point of consumption being the electrowinning manganese metal. The total electricity consumption will be 680 GWh/year. In the Czech Republic (according to data from the Ministry of Industry and Trade for 2021), this means the production of 268,000 thousand tonnes of CO<sub>2</sub>. However, it should be noted that the company intends to purchase only electricity produced from renewable sources.

A corporate energy and carbon management system is being implemented to manage and mitigate GHG emissions, including the procurement of low carbon energy supplies. Potential emission reduction strategies are part of the processing plant engineering plans.

### 7.1.7 Climate Change Risk

The Project design considers future climatic conditions and whether these will present new and perhaps unforeseen hazards and risks to the Chvaletice-Trnavka Tailings Reclamation. It is assumed that in the period between 2010 and 2039 the average air temperature will increase by 1.1 °C, while in summer and winter we can expect only a slightly smaller increase than in spring and autumn. The Czech Republic begins to be dominated by a decrease in precipitation.

In terms of the anticipated consequences of climate change, it is not a significantly vulnerable territory. The threat of drought here is not very likely due to the location and location near the Elbe.

Continual review and monitoring of future climate risks will enhance the resilience of the Project to climate change.

### 7.1.8 Air Quality

A dispersion study was prepared to calculate the production of emissions into the air and to evaluate the level of air pollution in the vicinity of the Project.

The operation of the Project will create new sources of air pollution. In the dispersion study, individual emission sources are discussed in detail and emission flows are calculated. A brief summary of the sources of emissions for the mining part and part of the processing plant is given below.

The following sources of air pollution will be generated in the mining part of the plant during the operation of the Project:

- 
- particle emissions (particle matter) from bulk material handling,
  - resuspension of dust particles from surfaces due to weather conditions,
  - resuspension of dust particles from surfaces due to automobile traffic, emissions from freight transport,
  - emissions from mining vehicle engines,

The following sources of air pollution will be generated in the processing plant:

- technological stationary sources of emissions,
- diesel generator,
- gas boiler room,
- lime oxide silos,
- generated rail transport,
- generated car traffic on public roads,
- Intra-area transport.

Techniques and procedures that will be used to minimize or avoid the impacts on air quality in the mining area include, but are not limited to, revegetate the surface of RSF as soon as possible, move overburden outside of dry and windy periods, maintain a dust-free surface of quarry roads (e.g. unpaved quarry roads will be sprinkled in the event of prolonged drought), in case of excessive drying, sprinkle the mining workplace and other temporarily exposed areas or landfills, regularly clean all machinery and means of transport, use trucks that meet at least the EURO V emission standard, and limit the speed of traffic in the area on the roads in order to prevent excessive dust from the movement of trucks and machinery.

Techniques and procedures that will be used to minimize or avoid the impacts on air quality in the processing plant include organizational and technical measures such as best practices in storage and handling of raw materials and products to minimize air emissions (e.g. closed containers, silos, sealed packaging for products transportation) and installation of scrubbers and filters to clean the exhaust air before discharged into atmosphere.

The results of the calculations from the dispersion study and the evaluation of the impact on air quality are given in in the ESIA Chapter D.I.2. Overall, from the point of view of air impacts, it can be stated that the Project "Recycling of the Chvaletice – Trnávka tailings", even in cumulation with increased unrelated car traffic and the operation of the neighbouring plants, will not cause the applicable pollution limits of all emitted pollutants to be exceeded in the construction and operation phases. The intention "Recycling of the Chvaletice – Trnávka tailings" can be described as acceptable in terms of its impact on the atmosphere.

### **7.1.9 Noise and Vibration**

The current hygienic noise limits are exceeded in the Project area. The reason is the existing industrial areas in the vicinity of the Project, especially the operation of the Chvaletice Power Plant, as a result of which the hygienic noise limits are exhausted and exceeded. Therefore, the conditions for the implementation of the Project were formulated and designed in such a way that the Project would not increase this burden in any way.



An acoustic study was prepared to identify the sources of noise and to calculate the noise burden of the Project at 56 locations in the vicinity of the Project. The noise study includes the current noise pollution in the area from traffic and from existing stationary sources. Details of the acoustic situation were determined by our own measurements, calculations, and data on existing noise sources.

Noise emissions assessed by MANGAN Chvaletice, s.r.o. include:

- Construction noise
- Noise from the mining area
- Noise from the operation of the processing plant
- Traffic noise (road and rail)

The noise mitigation actions for the Project include, but are not limited to, the following:

- Material of construction of the buildings
- Method of ventilation of the buildings
- Selection of equipment based on low acoustic emissions
- Installation of the dampers at the outlet of fans
- Additional acoustic damping of point of high noise (e.g. equipment covers)
- Construction of an acoustic screen at the II/322 road, which will reduce the acoustic pollution of traffic noise in the Chvaletice built-up area.
- Train movement in the area of the Project will only occur during the day.
- All traffic on roads in the area of the Project will be out of operation at night. Employees of the plant and mining will use publicly accessible car parks to arrive on shifts.
- Mining activities are carried out only during daytime hours.

After the revision of the acoustic study and the tightening of the requirements for acoustic protection, it can be stated that the impact of noise from the operation of the Project, from railway and road transport, as well as the impact of noise from construction can be evaluated as insignificant.

MANGAN Chvaletice, s.r.o. will undertake monitoring to confirm the occurrence and extent of actual noise impacts.

#### **7.1.10 Wastes (Non-mineral)**

In addition to the mineral wastes, non-mineral wastes will be generated by Project construction and operation. These wastes include general waste and regulated waste; examples of regulated waste include disposed engine oils and lubricants, paper, oil/water separator sludges, plastic or metal packages that may contain hazardous substances, disposed electric equipment, and old tires.

Because regulated wastes are considered to be more hazardous, relative to general wastes, they are subject to a higher level of management controls; regulated wastes will be separated and stored safely within bunded areas until they are recovered or disposed outside the facility by authorised third-party companies.

Waste will be managed according to the waste hierarchy (i.e., reduce, recycle, re-use) before disposal.

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## 7.2 Socioeconomic Impacts

A socioeconomic impact assessment was completed, which considered local and regional communities that could potentially be affected by the Project.

For this Project, human rights risks have been incorporated within the assessment of socioeconomic impacts, which follows the requirements of EBRD Performance Requirements.

The following section presents information on the socioeconomic impacts assessed within the ESIA study, with more details provided for those considered to be of highest interest for stakeholders.

### 7.2.1 National Economy

At the national level, the total impact of MANGAN Chvaletice, s.r.o.'s activities on gross domestic product production across the country starts at US\$230 million in 2028, increases to US\$750 by 2031 and then averages US\$1 billion throughout the remaining period until 2053.

When the Project is fully developed, it will lead to:

- US\$1 billion investments in Czech economy;
- US\$2.8 billion state tax revenues;
- Over US\$173 million revenues from mining royalties;
- US\$24.1 billion exports; and
- US\$7 billion payments for goods and services to Czech and EU suppliers.

### 7.2.2 Employment and Income

The Project will result in employment opportunities at the construction and operation stages for highly skilled, semi-skilled, and unskilled workers. The Project will need 500 people during peak construction. During peak operation, the Project will employ 380 - 400 staff.

MANGAN Chvaletice, s.r.o. will prioritize employment locally as long as required skills are available in local communities. MANGAN Chvaletice, s.r.o. will be implementing a skills development program to build up the capacity of the local workers during construction and operation. During operation, approximately 95 percent of the direct workforce for the Project is estimated to be local.

In addition to direct employment opportunities, indirect employment opportunities will be created during construction and operation in supplier industries throughout the supply chain, resulting from the Project's spending. Induced job creation during both Project phases in industries such as retail, wholesale, manufacturing, transportation, real estate, and similar industries will create economic benefits, as direct and indirect workers spend their earned income.

### 7.2.3 Education and Training

The Project will have positive impacts on education and training through on-the-job training. Training received while working for the Project will enable employees to develop skills, expand their experience and expertise, and facilitate career advancement and/or future employment.

MANGAN Chvaletice, s.r.o. will offer internships for technical universities and technological educational institutes, as well as summer placements for university students. Project development will stimulate opportunities through local educational facilities – in particular, apprenticeship schools.

To maximize potential economic benefits, MANGAN Chvaletice, s.r.o. will provide local training and capacity building to help local workers and businesses access Project opportunities. This will include focused efforts to help improve gender representation within the Project workforce.

#### **7.2.4 Land Acquisition**

No forced land acquisition or resettlement is required for the Project. MANGAN Chvaletice, s.r.o. has acquired the processing plant site through the acquisition of the site owner, EP Chvaletice. The tailings area classified as Protected Deposit Area is designated for mining use. MANGAN Chvaletice, s.r.o. has concluded four out of five land access agreements covering 85% of the resource within the tailings, with the remaining land access agreement under negotiation.

#### **7.2.5 Infrastructure and Services**

##### **7.2.5.1 Transport Infrastructure**

The implementation of the assessed Project does not require the construction of new transport infrastructure. The mining area will be connected to the II/322 road by means of the existing turn-off at the level of the tailings pond No. 2 (at approx. km 18.35 of the II/322 road). It is a turnoff to the local service road used to get to the village of Trnávka. After about 300 m from the turning from the II/322 road, the road leads directly to the area of the planned quarry facilities. The processing plant will be connected from the same road via an existing branch.

The actual transport of the extracted raw material to the processing plant and the return transport of mining waste does not require road or rail transport, it will be carried out over a technological bridge in the form of a pipeline (there) and a belt conveyor (back).

The import of commodities (lime, sulphuric acid) will be carried out by rail, as will the majority of finished products from the factory. Other transport will be carried out by road. In total, the Project will generate approximately 206 passenger car trips, 15 light truck trips and 42 heavy truck trips per day. Freight traffic will be generated only during the daytime.

The conclusion of a traffic study states that all assessed states of the intersection will pass without any problems. This is primarily due to the low intensities on the II/322 road, but also to the relatively low number of vehicles generated by the production plant itself.

The impacts associated with the change in transport services are evaluated as insignificant in the implementation of the measure consisting of exclusion of road freight transport at night. This assessment can also be applied to construction.

### 7.2.5.2 Energy Infrastructure

Electricity will be supplied to the processing area by an underground cable from the 400 kV above-ground grid. The connection to the grid will be made in the Chvaletice power plant, about 500 m east of the border of the processing plant. The approximate location of the connection point at the site boundary is shown in Figure 5. The exact position of the 400 kV cable will be defined in the Project documentation so that there is no conflict with existing networks.



Figure 6: Approximate position of 400kV cable input to the processing plant area

Thermal energy for the process and heating of the buildings will be supplied in the form of superheated water (130o C, 10 bar) from the Chvaletice power plant. This energy will be used in the process for low-temperature applications (heating up to about 95o C), heating/tempering of buildings and for the preparation of domestic hot water. Superheated water will be supplied to the processing plant area from the eastern part of the site through a pipeline running in an existing pipe bridge on the side of the Chvaletice power plant, shown in Figure 6. After cooling, the primary heating water will be returned to the Chvaletice power plant along the same route.





Figure 7: Connection point for superheated water from the Chvaletice Power Plant

The process will require higher temperatures (e.g., manganese sulphate drying) or direct steam heating (e.g., ammonia recovery process) for some applications. It will not be possible to use superheated water for these applications and it will therefore be necessary to generate steam by burning natural gas. There are 2 connection possibilities for natural gas supply, i) supply through a reconstructed existing connection leading from the reduction station on the eastern edge of Chvaletice, ii) inlet through a new connection from a gas pipeline running parallel to road 322.



Figure 8: Proposed connection points for natural gas supply

## CHAPTER 8 MANAGEMENT OF ENVIRONMENTAL AND SOCIAL PERFORMANCE

### 8.1 How Will MANGAN Chvaletice, s.r.o. Manage its Environmental and Socioeconomic Impacts?

Euro Manganese and its subsidiary MANGAN Chvaletice, s.r.o. are committed to responsible operation, the highest safety and environmental standards, and working with stakeholders to enhance the communities where it operates.

Key selected environmental and social policies that are in place or in progress and applicable to the Project are summarised in Table 8-1.

**Table 8-1: MANGAN Chvaletice, s.r.o. Policies**

Policy	Details
<b>Policies</b>	
<a href="#">Code of Business Conduct and Ethics</a>	A tool to guide decision-making consistent with the company's core values of honesty and integrity and to summarize the expectations we have for all persons working for, or with, the company.
<a href="#">Human Rights Policy</a>	The company and its subsidiaries are committed to supporting the protection of international human rights through best practises in all business activities. The company recognizes its responsibility to respect human rights at all of its operation. The Policy is not intended to supersede local laws, but rather to support host governments in the protection of human rights and the prevention of human rights abuses.
<a href="#">Anti-Bribery and Anti-Corruption Policy</a>	The Anti-Bribery and Corruption Policy is designed to educate and provide knowledge and guidance to personnel and agents on the giving or receiving of bribes.
<a href="#">Environmental and Energy Policy</a> <sup>12</sup>	The protection of the environment and the well-being of society constitute a structural element of the company's philosophy, for the construction and operation of the mining and metallurgical facilities of Chvaletice_Trnavka Tailings Reclamation. The intention is to minimise the impact on the environment at every stage of business, from research, extraction, production, and distribution of products to their restoration and permanent cessation.
<a href="#">Contractor Environmental Management Handbook</a> <sup>13</sup>	The primary objective is to ensure compliance with legislative and other requirements, and compliance with the requirements of the company's Environmental Management System, Environmental Policy, and Energy Efficiency Management Policy.
<a href="#">Health and Safety Policy</a> <sup>14</sup>	The health and safety of employees and local stakeholders is a core value of MANGAN Chvaletice, s.r.o. S.A. Providing safe and healthy working conditions for the prevention and elimination of work-related injuries and ill health is essential to all the operations.
<a href="#">HSE Manual</a>	The purpose of this document is to set out the employer's and employee's obligations in the area of occupational health and safety. This manual applies throughout the Company and applies to all employees of the Company. Employees of the Company are required to comply with it even if they perform work tasks outside the Company's workplace. Employees of other employers are also required to comply with these policies and rules when working on the Company's premises, facilities and equipment, to the extent that they have been made aware of the regulations.
<a href="#">Provision of Personal Protective Equipment</a>	This organizational directive specifies the scope and type of personal protective equipment (hereinafter referred to as PPE) to be provided based on an assessment of the occupational hazards to which employees are exposed in the performance of their work. The Directive sets out the scope for the provision and management of PPE to employees free of charge.
<a href="#">Determination of the Organization of Fire Protection Security</a>	The purpose of this document is to define the individual elements in the area of fire protection organization in the company Mangan Chvaletice, s.r.o.
<a href="#">Contractor Safety Regulation</a> <sup>15</sup>	The primary objective of this regulation is to ensure that the contractor carries out its work safely and to prevent accidents involving its staff, the company's staff, or third parties, and to avoid damage or harm to the contractor's or company's facilities and/or their equipment or third-party assets.

<a href="#">Procedure for Alcohol and Drugs Control</a> <sup>16</sup>	<p>Every employee, contractor employee, and visitor is entitled to a safe work environment. For this reason, the distribution, possession, consumption, manufacture, preparation, presence, or use of illicit drugs or alcohol on any worksite is forbidden. Everyone must contribute towards a safe working environment.</p>
<a href="#">Mangan Chvaletice Company Policy</a>	<p>The purpose of this document is to familiarize the employees of MANGAN Chvaletice, s.r.o. with the main policies issued by the parent company Euro Manganese Inc. in separate documents called "Policies".</p>
<a href="#">Work Rules</a>	<p>The Work Rules further elaborate the provisions of the Labour Code, according to the specific conditions of the employer. These working rules are binding on the employer and all employees of MANGAN Chvaletice, s.r.o. in the employment relationship. For employees of MANGAN Chvaletice, s.r.o. performing work for the employer on the basis of agreements on work performed outside the employment relationship, the working regulations are binding to the extent provided for by the Labour Code and to the extent provided for by the relevant agreement on work performed outside the employment relationship.</p>

Based on the findings of the regulatory ESIA studies, framework management plans (which will be updated with detailed management plans) for the Chvaletice\_Trnavka Tailings Reclamation Environment and Social Management System (ESMS) shall be developed. These define the management practices and plans that will be applied across all Project functions (including contractors) and all stages of the Project life cycle to manage environmental and social risks and meet related corporate and Project commitments.

All impacts will be managed systematically through established site-based teams to oversee, implement, and manage operation in accordance with statutory permits and Company policies and programs.

The ESMS shall undergo regular formal reviews and is updated over the life of the Chvaletice\_Trnavka Tailings Reclamation Project as appropriate to the risks and impacts of each stage of the mining cycle (i.e., construction and commissioning, operation care and maintenance/cessation of mining, rehabilitation, and closure).

## **8.2 How Will MANGAN Chvaletice, s.r.o. Monitor its Environmental and Social Impacts?**

The Project shall have an extensive environmental monitoring programme in place. This monitoring programme aligns with applicable Czech and international standards and ESIA Binding Statement conditions.

In accordance with the Environmental Permit and ISO Standards, an independent environmental compliance monitoring will be executed to monitor environmental and health and safety impacts.

Monitoring requirements for Project impacts are described in the ESIA, ESMS Framework, and the framework management plans. These framework plans will be developed and consolidated into a detailed monitoring plan for the Project.

The Environmental and Social Monitoring Plan will consolidate key monitoring activities, including a commitment tracker that will be owned by the MANGAN Chvaletice, s.r.o. General Manager.

Performance against environmental and socioeconomic commitments will be reviewed internally and by independent audit teams from the Project's financial partners.



The Project will report on its environmental and social performance as well as on stakeholder engagement and grievance management on a regular basis through annual reports to be published on the website: <https://www.manganchvaletice.cz> .

## CHAPTER 9 FURTHER INFORMATION

### 9.1 How Can I Get More Information or Provide Feedback?

Planned activities will allow stakeholders to provide feedback on the Project under the form of questions, comments, concerns, complaints, and proposed amendments or suggestions. During the above activities, information about the Project will be provided on a regular basis. Stakeholders can provide feedback in the following ways:

- In person at the MANGAN Chvaletice, s.r.o. Chvaletice Cultural House office.
- By mail at the following address: By mail to Mangan at: U Kulturniho domu 158, 533 12 Chvaletice, Czech Republic.
- By email: Marketa Sulova, Office and Communications Manager to msulova@mn25.cz; and
- By phone to 00420 727 808 926 (Monday through Friday 09:00–17:00).

Feedback received during disclosure will be captured and recorded in a database. Feedback may be provided anonymously; where personal data is provided, it will be kept only as long as it is necessary to investigate the complaint, implement a resolution, and monitor situation at post closure stage. Personal data will then be either deleted or modified and transferred to an archive for a reasonable period.

Engagement with stakeholders and the opportunity to provide feedback about the Project will not be limited to the disclosure phase. MANGAN Chvaletice, s.r.o. will continue to engage stakeholders and collect feedback through the established grievance mechanism processes, on an ongoing basis throughout the life of the Project.

### 9.2 How Will MANGAN Chvaletice, s.r.o. Continue to Share Information about the Project?

Ongoing consultations and information disclosure over the life of the Project will continue, and will include:

- Open houses or community information sessions, which will be hosted in key communities prior to and during the construction and operation phases.
- Targeted and individual meetings with representatives of affected communities.
- Information provided through traditional media (e.g., print, radio) and social media (e.g., Facebook, Twitter).
- A Project newsletter. Internal company newsletters will be developed to provide updates on the Project and to disseminate key information. The newsletter will be distributed to internal stakeholders monthly.
- Sustainability Report to be published on the website.