Independent Environmental and Social Consultant Compliance Monitoring Report

Oyu Tolgoi Mine

May 2024

Report Date: July 1, 2024

TABLE OF CONTENTS

List of Tables

List of Figures

KEY ABBREVIATIONS AND ACRONYMS

AIFR	All-In Frequency Rate
AEMP	Atmospheric Emissions Management Plan
AESR	Annual Environmental & Social Report
AQMP	Air Quality Monitoring Plan
BAP	Biodiversity Action Plan
BMEP	Biodiversity Monitoring and Evaluation Plan
BMP	Biodiversity Management Plan
BRMP	Business Resilience Management Plan
CA	Cooperation Agreement
CAP	Priority Plant Corrective Action Plan
CAO	Compliance Advisor Ombudsman
CBM	Core Biodiversity Monitoring
CEMS	Continuous Emissions Monitoring System
CH	Cultural Heritage
CHMP	Cultural Heritage Management Plan
CHMS	Cultural Heritage Management System
CHP	Central Heating Plant
CHSSMP	Community Health, Safety & Security Management Plan
COS	Coarse Ore Stockpile
CSP	Communities and Social Performance
CSP MS	Communities and Social Performance Management System
DSF	Development Support Fund
EBRD	European Bank for Reconstruction and Development
ECAs	Export Credit Agencies
EDC	Export Development Canada

EFIC	Export Finance and Insurance Corporation
EPRP	Emergency Preparedness and Response Plan
ERP	Emergency Response Plan
ERPr	Emergency Response Procedure
ERT	Emergency Response Team
ESAP	Environment and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMEP	Ecosystem Services Monitoring and Evaluation Plan
ESMP	Environmental and Social Management Plan
PSFA - AA	Power Source Framework Agreement
GH	Gunii Hooloi
GHGs	Greenhouse Gas Emissions
GIIP	Good International Industry Practice
HCRA	Herder Complaints Resolution Agreements
HLIP	Household Livelihood Improvement Plan
HR	Human Resources
HSE	Health, Safety and Environment
HSEC	Health, Safety, Environment and Community
HSEC MS	Health, Safety, Environment and Community Management System
HSESC	Health, Safety, Environment, Security and Communities
IA	Investment Agreement
ICMM	International Council on Mining and Metals
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
IMP	In-migration Management Plan
IWRC	Interim Waste Recycling Center

IMPC	Inner Mongolian Power Corporation
KBWMC	Khanbogd Waste Management Center
KPI	Key Performance Indicator
LMP	Labor Management Plan
MET	Ministry of Environment and Tourism
MIGA	Multi-lateral Guarantee Agency
MLA	Mine License Area
MUST	Mongolian University of Science and Technology
MWMP	Mineral Waste Management Plan
NNL	No Net Loss
NoC	Notice of Change
NPI	Net Positive Impact
NPPC	Native Plant Propagation Centre
OEL	Occupational Exposure Limit
OESMP	Operations Environmental and Social Management Plans
OT	Oyu Tolgoi
OT-GS	Oyu Tolgoi – Gashuun-Sukhait
OT-KB	Oyu Tolgoi – Khanbogd
PAF	Potentially acid forming
PEM	Participatory Environmental Monitoring
PLIMP	Pastureland and Livelihoods Improvement Management Plan
PR	Performance Requirement
PS	Performance Standard
PSFA	Power Source Framework Agreement
RAP	Resettlement Action Plan
REC	Renewable Energy Certificate

RT	Rio Tinto
SCP	Sustainable Cashmere Project
SEP	Stakeholder Engagement Plan
SOPP	State-Owned Power Plant
STRENGTH GEC	Strength Geologic and Environmental Consulting, LLC
SLPs	Sustainable Livelihood Projects
TDS	Total Dissolved Solids
TPC	Tripartite Council
TPD	Tons per day
TSF	Tailings Storage Facility
UB	Ulaanbaatar
US EXIM	Export-Import Bank of the United States
WCS	Wildlife Conservation Society
WRMP	Water Resources Management Plan

1 Executive Summary

The scope of this desktop IESC Audit is to undertake a risk-based review of the environmental, social, health and safety performance of Oyu Tolgoi (OT) mine project operations. This includes providing an update on non-conformances identified in the last Independent Environmental and Social Consultant (IESC) Audit Report (*IESC Compliance Monitoring Report, September 2023*), as well as providing a current assessment as to whether agreed mitigation and monitoring measures are being implemented as required by commitments made in Operational-phase Environmental and Social Management Plans (OESMPs). The risk-based approach reflects the history of the IESC in auditing of the Project, a constructive working relationship with OT and Lenders established for over 12 years, and a limited number of identified non-conformances with the ESIA and underlying Environmental and Social Management Plan commitments. That said non-conformances are highlighted in this report. When identified an appropriate path forward is identified by the IESC to guide OT in its objective of conforming with all Lender requirements.

This report presents a review of the Project's status as of early May, 2024. The review was completed as a "desktop" exercise, meaning no site visit was performed. Following the COVID-19 pandemic the IESC has endeavored to visit the site once per year, typically in early fall when the majority of summer field data have been collected and tabulated. For this Desktop Audit the IESC has reviewed and incorporated the large amount of information contained in OT's 2023 Annual Environmental and Social Report (AESR). Additionally from May 6 – 10 a series of topic-specific virtual meetings were held between the IESC and OT, to gather other details not captured in the AESR, or to expand on the information contained in that report. There have also been iterative information requests from the IESC and corresponding responses to these requests from the OT Environment and Communities Teams.

The long history of the IESC in auditing the OT project, and general good performance relative to commitments, has allowed determination of key ongoing environmental, social, and health and safety risk areas. Updates are provided in this report to address key risk areas, including most recently the presence of likely seepage from the TSF into the adjacent Dugat/Khaliv ephemeral river channel, which is located immediately adjacent to TSF Cell#1. In general the quality of information provided by OT during this audit is very good, complimented by additional expertise within the broader Rio Tinto organization. Within this report in some instances references are provided to previous IESC Audit Reports for background on operational management plans and project history.

As of Q3 2023 there are three Level III, five Level II, and one Level I non-conformances identified with the ESIA and underlying management plans. No non-conformances from the prior Q3 2023 Audit have been closed. The following summarize key findings and recommendations from this review:

- OT maintains a well-staffed and competent Environment Team and Community Social Performance Team. The Project is subject to a number of domestic and international audits/inspections and in general performs well when evaluated against best practice environmental and social guidance.
- OT is currently implementing a concentrator conversion project with commissioning planned for the remainder of 2024 through the first quarter of 2025. A conveyor from the underground to the surface is also under construction and 88% complete in Q4 2023, with commissioning expected in Q2 2024. In Q3 2023 construction of a second primary crusher was initiated and this is scheduled is for completion by the end of 2025.
- As reported on prior Audit Reports, OT has anticipated expansion of the current Mine License Area (MLA) to accommodate expected subsidence associated with development of underground works. The current MLA encompasses a total of 8,489 hectares. The extent of the additional land required to accommodate a subsidence zone resulting from underground mine development totals 266

additional hectares to the north. In Q3 2023 a Notice of Change was submitted to the Lenders, along with a supporting "Supplementary ESIA", to correspond with the existing 2012 OT Mine ESIA. The Supplementary ESIA was then reviewed by the both the Lenders and IESC with a formal response provided to OT in Q4 2023. OT has worked with their third-party consultant to revise the Supplementary ESIA. This revised ESIA was just recently completed in Q2 of 2024, and will be reviewed by the Lenders and IESC immediately following issuance of this Audit Report.

- The current version of the Oyu Tolgoi Closure Plan was last updated in 2017. A revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2021. The updated Closure Plan has been a long time in development. An updated 2023 Feasibility Study is in late stages of finalization, and this will drive updated closure costs. In discussions during this Audit it was reported that current overall mine closure reserving costs at estimated at USD$1.8 billion as of 2024.Overall OT closure lability lies within Rio Tinto's over-arching closure provisioning.

  The current overall OT Closure Plan is outdated, although TSF Cell#1 is under progressive reclamation. This reclamation is being undertaken following a specific Oyu Tolgoi TSF Cell#1 Closure Plan, which is draft form. The IESC has reviewed this document and considers it fit for purpose, although some costing information is still pending. OT has represented that the TSF Cell#1 Closure Plan will be finalized by the next Audit in Q3 of 2024. The TSF Cell#1 Closure Plan covers a five year closure period beginning in 2024 and extending into 2029. This closure plan primarily relates to closure of the TSF Cell#1 embankments, with final closure of the top platform to occur when the cell is no longer needed for emergency capacity.

- Observed water level drawdowns in the Gunii Hooloi aquifer region generally conform with 2015 model predictions for "Base Storage Scenario". However at one location observed water levels are below model predictions for the low storage scenario. An aquitard is present at this site. OT is currently updating the 2015 model which will be used in the re-assessment of the Gunii Hooloi reserve.

- Seepage continues to be present in monitoring bores up to approximately 300 m east of Mine License Area. This seepage is likely emanating from TSF Cell#1 and bypassing a cutoff dam designed to prevent such seepage from entering into the environment. A Detailed Water Review was held in Q3 2023 prior with staff from OT, Rio Tinto, the Lenders and the IESC present. A Remedial Action Plan (RAP) was developed in Q4 2023 following the Detailed Water Review. Details are presented in this Audit Report. In general implementation of the RAP is at a satisfactory status.

- In Q3 of 2023 approximately 70 tons of hazardous waste were shipped from the site for incineration to the contractor Element LLC. This material included approximately 54 tons of concrete containing asbestos, and 16 tons of oily rags. The IESC comments that in the prior Audit Reports a recommendation was made to submit an NoC related to the off-site processing of hazardous waste prior to this activity taking place. The contractors used by OT are licensed within Mongolia, but have not been evaluated by Lenders or the IESC.

- As described in the prior Q3 2023 Audit Report OT has recently made significant revisions to its GHG accounting metrics for years 2018 – 2023. These revisions consider the Chinese national grid factor, which is considerably less than the grid emission factor previously adopted by OT. This has led to downward revisions of approximately 30 – 40 % in total GHG emissions for each calendar year. OT still maintains a goal of significant future reductions based on its revised 2018 baseline year GHG emission metrics. In 2023 OT purchased considerable Renewable Energy Certificates (RECs) which has lowered reported GHG emission totals. This is a new strategy employed by OT beginning in 2023 to meet GHG emission reduction targets.

- An option of using rail transport for export of concentrate has recently come under serious consideration. There is already an existing railway line from the nearby Tavan Tolgoi coal mine to a location near the Chinese border. Connection from the OT site to the existing rail line would require a 26 km spur rail line. OT is evaluating this option, including associated environmental/social assessment and mitigation requirements. A Prefeasibility Study (PFS) has been completed for the rail spur, with a full Feasibility Study scheduled for completion by Q4 2024. The IESC will continue to report on this potential concentrate transport option in future Audit Report.
- In the Q3 2022 Audit Report the IESC opened a Level III non-conformance and requested that OT develop a new rangeland offset. An early draft of an offset options analysis was presented during this audit. More work remains to finalize the analysis, but the early draft indicates that supporting protected area management may be a feasible alternative. This may assuage concern raised in the Biodiversity Workshop in Q1 2024 that rangeland offsetting in Mongolia may not be possible due to social and environmental factors. The IESC recommends that OT share the final options analysis with Lenders by Q3 2024. This remains a level III non-conformance.
- The IESC requested that a study design for evaluating rehabilitation methods be submitted for lender review by Q2 2024. OT has pushed out this date. The IESC requests that it be submitted by Q3 2024 to allow time for review and implementation this field season. It should detail the types of rehabilitation to be evaluated (including technical rehabilitation alone), statistical approach for evaluation, and the timeline for implementation. The IESC recommends that the study be completed before any major scaling up of current biological rehabilitation methods.
- OT agreed to submit to Lenders a method statement for elm conservation by the Q2 2024 IESC audit, with a Notice of Change then submitted to establish the revised protocol for protection of elm trees in the OT area of influence. This remains to be done. The IESC requests this be submitted by Q3 2024.
- The Priority Plant Corrective Action Plan commits to determining habitat requirements for priority plants, GIS mapping of transplanting areas for priority plants, determination of propagation methods for all priority plants, and research and determination of effective transplanting methods. OT has submitted an updated timeline for completion of these steps and implementation should adhere to this new timeline. A Notice of Change should be submitted. *This remains a level II non-conformance until tangible progress is made, in adherence with the timeline.*
- The IESC recommends OT update the BMEP and issue a Notice of Change by Q3 2024.
- OT has established a Town Transformation and Employee Accommodation Project Taskforce to look at worker accommodation within the context of a push to secure 50% residential worker accommodation in KB soum by 2035. The IESC finds that, while work has commenced, the non-conformance on the preparation of a long-term, Worker Accommodation Strategy remains open, also noting that pressure is increasing on the available on-site accommodation during 2024. If it is determined that off-site accommodation will be required, an ESIA will need to be prepared, in line with the ESAP.
- The non-conformance remains open on OT's commitment to conduct a Completion Audit of the 2011 economically displaced households. The consultant team has completed the field work and report; the report is being reviewed and finalized, expected imminently for Lender consideration prior to its disclosure.
- A three-day standdown at the OT underground project was resolved, and discussions are now underway with the existing OT Trade Union and a group of employees that are contemplating the

formation of a second trade union. Any changes to the OT Collective Agreement as a result of these discussions will firstly require the formalization and registration of the second trade union.

- In the year to date, OT is near to achieving its targets in local employment and local procurement, including through ongoing efforts to engage with working group partners and drive opportunites for Umnugobi residents and businesses. Alignment with external organisation and partnerships is a key objective of the forthcoming Regional Economic Development framework.

2 Project Background and Introduction

The Oyu Tolgoi copper/gold mining Project ("the Project" or "OT Project") is located in the *aimag* (province) of Ömnögovi, in the South Gobi region of Mongolia, approximately 600 km south of the capital city, Ulaanbaatar ("UB"), and 80 km north of the Mongolia-China border. OT currently operates open pit mining at the Southern Oyu deposit and production from block cave underground mining operations in the higher-grade Hugo North deposit. Year-over-year copper concentrate production continues to increase at OT with the March 2023 commencement of mining from the higher-grade underground deposit. This is reflected in a 26% increase in mined coper from Q4 of 2022 to Q4 of 2023. Total ore delivered to the mill in Q1 of 2024 was 9.0 Mt from the open pit (average grade of 0.39%) and 1.3 Mt from the underground operation (average grade of 1.67%). The later metric is an approximate increase of 40% from the Q2 2023 mined tonnage of 0.9 Mt underground operations, demonstrating the rapid increase in underground input.

Construction of the underground mine involves eventual development more than 200 kilometers of underground tunnels at a depth of up to 1.3 kilometers. Underground tunneling is progressing consistently and the underground operation is expected to be fully ramped up by 2027. At that point in time the Oyu Tolgoi Project is expected to produce more than 500,000 tons of copper concentrate a year. Rio Tinto now has a 66.66% direct interest in Oyu Tolgoi, following the successful December 2022 acquisition of Turquoise Hill Resources Ltd. The balance of 33.33% ownership is with the Government of Mongolia.

2.1 Independent Environmental and Social Consultant Review

The IESC's role is to support the Lenders[1] by providing an external/independent Health, Safety and Environment and Communities (HSEC) monitoring evaluation of on-going operations of the OT Project. The Operational Phase of the Project began in 2013. The IESC periodically reports to the Lender group on conformance with environmental and social planning and commitments contained within the Environment and Social Impact Assessment (ESIA) and underlying Operational Phase Environmental and Social Management Plans (OESMPs). Commitments and Key Performance Indicators (KPIs) in in these and other relevant documents define how OT will implement the mitigation strategies set out in the 2012 Environmental and Social Impact Assessment (ESIA). Commitments are also contained in an Environment and Social Action Plan (ESAP) which contains time-bound future commitments developed at the time of finalization of the ESIA. These documents, along with internal Rio Tinto and OT procedures, represent the reference documents used by the IESC to monitor Project environment, social, health and safety performance.

This report presents a review of the Project's status as of May 2024. From 2020 through 2022 COVID-19 travel restrictions had prevented travel to the site and IESC audits were performed using available written information, remote interviews with site personnel, and numerous 'virtual tours" and video conferences intended to make the remote audits as similar to a site-based audit as possible. The next site-based audit will take place in September 2024 and will capture information from the summer field season.

To consolidate this report in some instances references are provided to previous IESC Audit Reports for background on operational management plans and project history. The reader is referred to those prior Audit Reports for a full history of Project development, details of the 2023 Detailed Water Review, non-conformances, and implemented corrective actions.

1 The Senior Lenders group includes: the International Finance Corporation (IFC), the European Bank for Reconstruction and Development (EBRD), Export Development Canada (EDC), Export-Import Bank of the United States (US EXIM), Export Finance and Insurance Corporation (EFIC), the Multi-lateral Guarantee Agency (MIGA), Standard Chartered Bank (SC) and BNP-Paribas.

Specific activities conducted for this Q2 2024 Desktop Audit include the following:

- Review of the 2023 Oyu Tolgoi Annual Environmental and Social Report;
- Review of written information and data provided by OT in response to thematic Information Requests submitted by the IESC;
- Virtual meetings held with OT during the week of May 6th – 10th, 2024. These meetings included presentations from OT, virtual tours and video conferences with select stakeholders. In addition to a kick-off presentation thematic meetings were held in the following areas of interest:
    - Atmospheric Emissions Management Plan;
    - Noise and Vibration Management Plan;
    - Management of the Remedial Action Plan associated with seepage from TSF Cell#1;
    - Water Resources Management and Monitoring Plans;
    - Mine Zone Expansion Planning include the Dugat River Diversion;
    - Biodiversity (monitoring, rehabilitation and offset programs);
    - Progressive Closure at TSF Cell#1;
    - Non-mineral Waste Management Plan;
    - Hazardous Material Management Plan;
    - Mineral Waste Management Plan;
    - Labour relations updates/presentations;
    - Communities team discussion/presentations;
    - Resettlement Action Plan (RAP) herder Completion Audit;
    - Interviews with a sample of OT LLC workers and contractors; and
    - Employee accommodations
- Evaluation on implementation of key commitments/KPIs contained within the Operational Phase ESMPs and the ESAP;
- Recommendation for potential HSEC improvements based on Good International Industry Practice (GIIP); and
- Follow-up of findings and observations from the IESC September 2023 Desktop Audit Report[2].

The information, observations, and opinions presented in this report are those of Strength GEC, LLC and are independent of those of the Project and/or the Senior Lenders. Where topics are not referred to no risks to the Project have been identified.

[2] Strength GEC LLC, IESC Compliance Monitoring Report, Virtual/Desktop Audit, September 2023

2.2 Oyu Tolgoi Operating Status

OT currently operates open pit mining at the Southern Oyu deposit and supplemental underground production, using block cave mining techniques, from the higher-grade Hugo North deposit. The open pit mine is a conventional truck and shovel operation. Underground production began in March 2023 following many years of development. Ore from the underground is currently delivered to the surface via the production hoist in Shaft 2 and then via conveyor to surface. Shafts 3 and 4 will provide additional mine access haulage and ventilation, respectively. As of the end of Q1 2024 both shaft are near completion, with Shaft #3 at 1,076 m total depth and Shaft 4 at 1,150 m total depth (with final planned depths of 1,130 and 1,176 m, respectively). These infrastructure components are both scheduled for commissioning in the second half of 2024. Both the open pit and underground mines operate 24 hours per day based on two 12-hour working shifts.

Construction of the underground mine involves developing more than 200 kilometres of underground tunnels. In 2023 lateral development tunnels were expanded by almost 15.7 km. Oyu Tolgoi plans to annually produce more than 500,000 tons of copper concentrate when the underground operation is fully ramped up, at the earliest in Year 2028. Filtered concentrate is bagged for transport and currently trucked to the Chinese border. There are studies considering rail transport of concentrate from the OT site, as discussed later in this report. The IESC will report on this option in future reporting as the concept becomes further developed. Planning is currently at the pre-feasibility level.

The concentrator design is based on processing ore at a rate of 35 million tons per year (nominally 100,000 tpd). The process design is based on concentration by conventional milling and flotation/technology using proven equipment. In Q3 of 2022 OT submitted a Notice of Change related to conversion of the concentrator circuit, while maintaining the overall existing processing capacity, to allow for the processing of ore obtained from underground block cave mining (NoC 2022 – 004).

Key components of the NoC include:

- The addition of a fifth ball mill to achieve a finer primary grind;
- Additional rougher flotation capacity to provide higher recovery through increased flotation retention time;
- Additional column flotation capacity to enable recovery of the higher level of concentrate produced when processing the higher-grade Hugo North ore; and
- Additional concentrate dewatering and bagging capacity.

OT is currently implementing the concentrator conversion with commissioning planned for the remainer of 2024 through the first quarter of 2025. A conveyor from the underground to the surface is also under construction and 88% complete as of Q4 2023. In Q3 2023 construction of a second primary crusher was initiated and this is scheduled is for completion by the end of 2025.

From the concentrator waste sludge (tailings) are filtered in two thickeners to approximately 60%, allowing the recycling of water back into the process circuit. Non-recycled sludge (i.e., tailings) is pumped to the Tailings Storage Facility (TSF) for final disposal. Water from the tailings thickeners and TSF are recycled back to the concentrator, with 85.7% of water recycled in annual 2023 metrics.

Final copper concentrate is thickened and filtered before storage in sealed bags for ultimate transport, generally via trucks to the Gashuun Sukhait/Ganqimaodao (GSK/GMD) border crossing with China. In

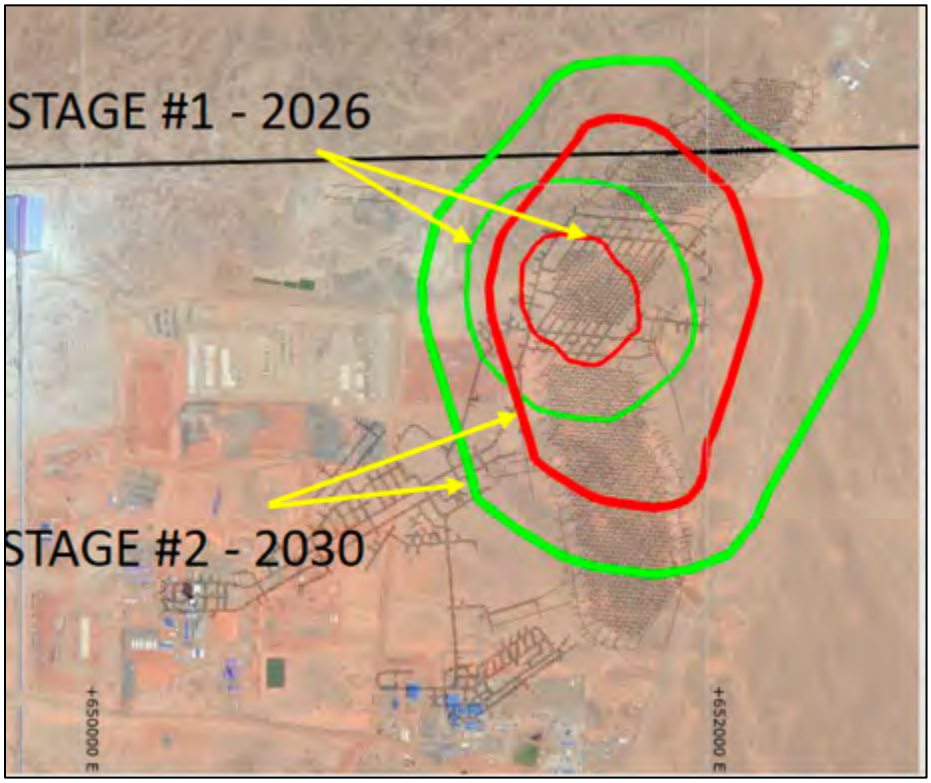
calendar year 2023 a total of 859,905 tons of copper concentrate were shipped to China, an increase of over 22% from the 704,250 tons or copper concentrate shipped in 2021.

OT LLC has long-evaluated alternative routes for concentrate export other than truck transport through the GSK/GMD border crossing. An option of convoy truck surface transportation first to Ulaanbaatar, then rail transport from UB to the border crossing at Erlian, was first used in 2021 (the "OT-UB-EN Route"). In 2021 OT exported approximately 20,000 tons of concentrate accumulated at the site during the COVID-19 pandemic using this option. This activity was reviewed by the IESC and Lenders and approved in Notice of Change 2021–004.

In Q1 of 2022 OT utilized a third concentrate export option, this time using surface roads to truck to the trans-Mongolian Zuunbayan Railway Station #5, from where the concentrate then crosses the border at Erlian (the "OT-ZB-EN Route"). In March 2022 a trial shipment of 6,400 tons of copper concentrate (10 lots) was exported on this route using five convoys of 16 single-trailer trucks. This included 286 km of surface truck transport to the railway handling station, of which 175 km is unpaved dirt road and the remaining 111 km is paved.

As reported on prior Audit Reports, OT has anticipated expansion of the current Mine License Area (MLA) to accommodate expected subsidence associated with development of underground works. The current MLA encompasses a total of 8,489 hectares. Predicted fracture limits by the end of mining at Hugo North Life #1 are expected to create some visible surface subsidence that extends beyond the current northern boundary of the MLA. Figure 2-1 shows the expansion of this subsidence zone over those time periods.

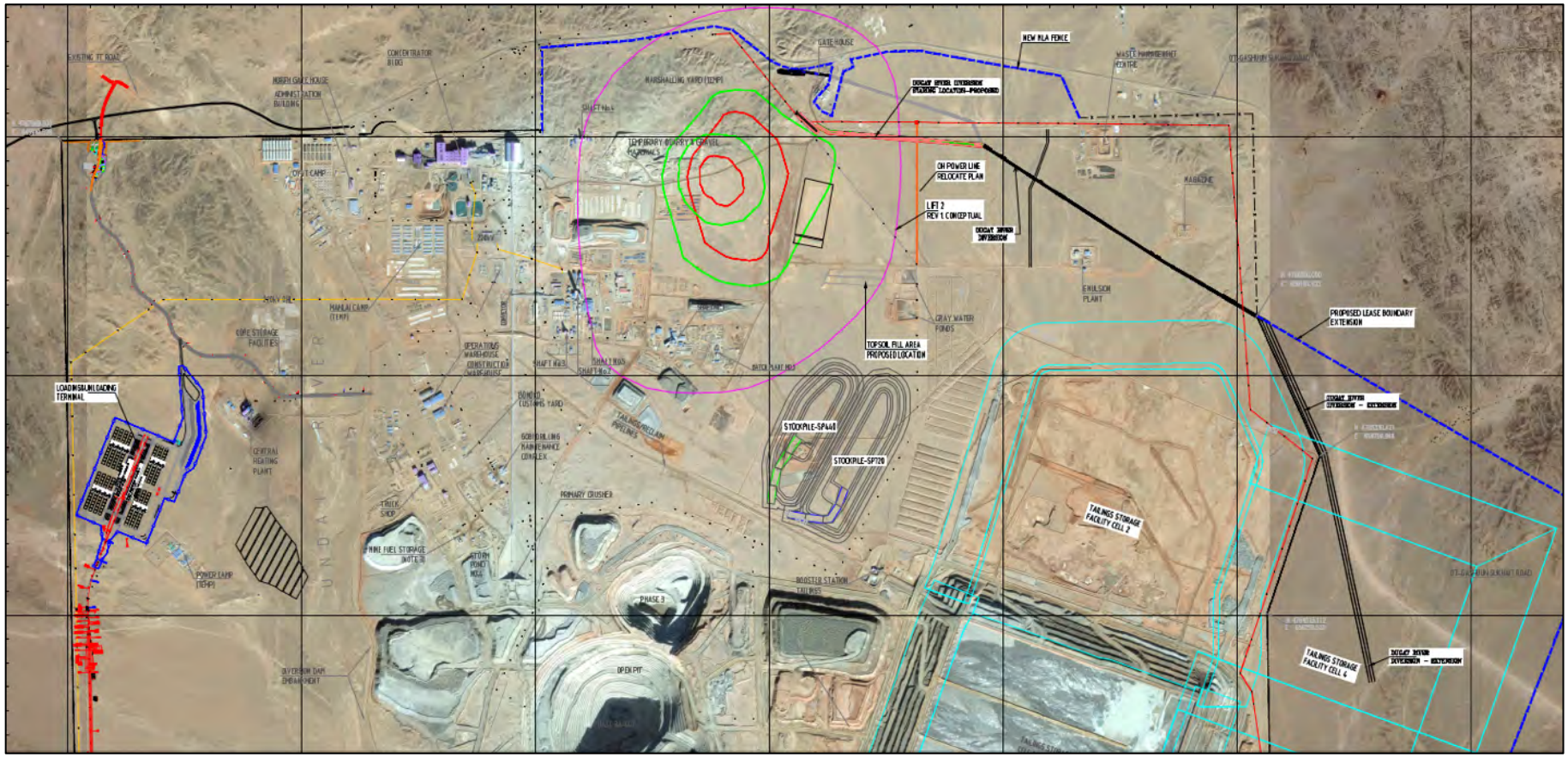
Figure 2-1 Subsidence Zone by 2026 and 2030 Relative to Northern Boundary of MLA



This created approximate 3 km^2 subsidence zone will require relocation of the current Dugat ephemeral alluvial channel via a Surface Water Diversion infrastructure feature, which will reroute surface flow of the Dugat River around the TSF for eventual discharge into the Khaliv and downgradient Budaa River systems. The extent of the additional land required to accommodate this subsidence zone totals 266 hectares, or an approximate 3.1% increase in area of the MLA. A more detailed map of the planned expansion of the MLA to the north is shown in Figure 2–2. To the north a 2-m high fence has already been constructed, as shown in blue.

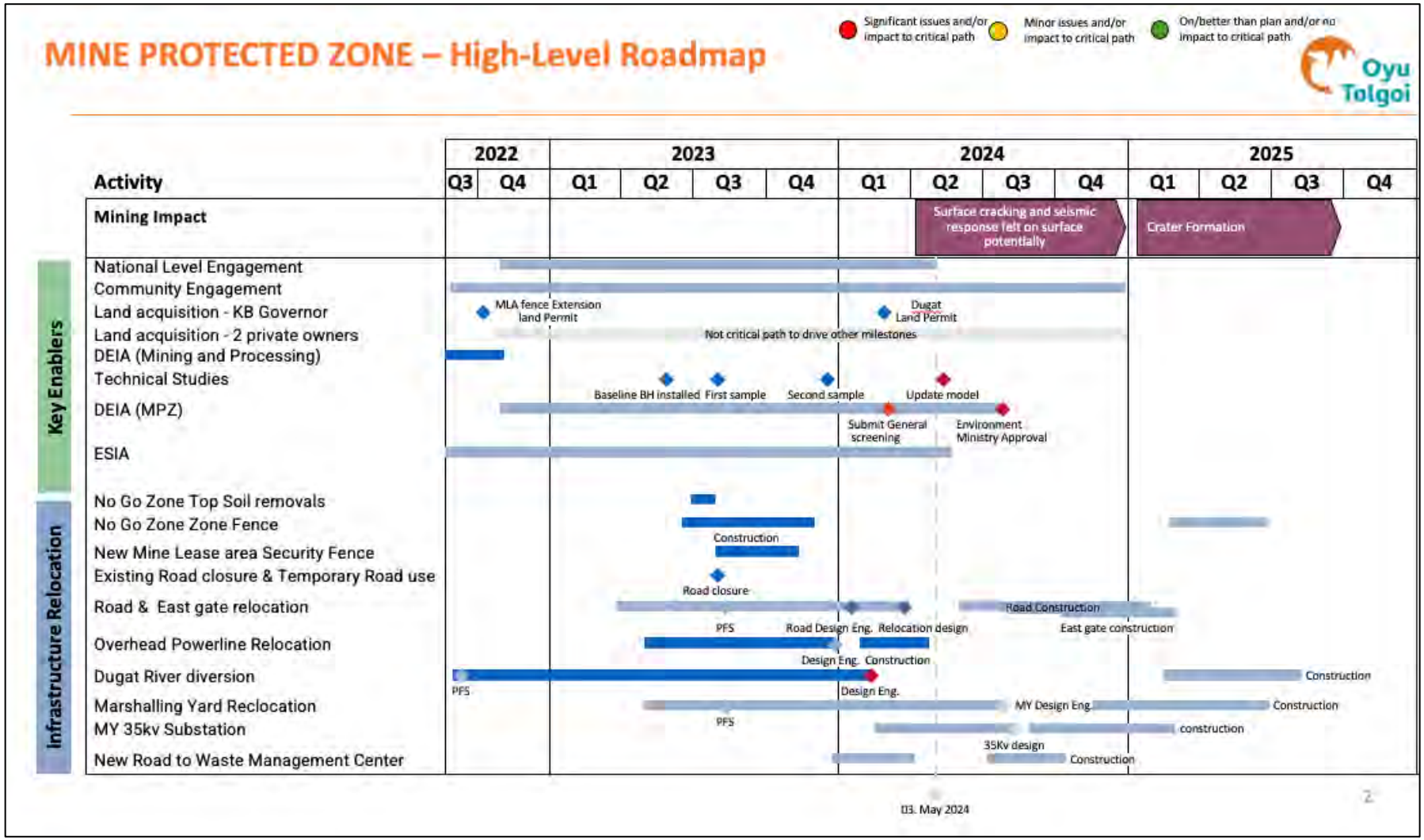
During prior Q3 2023 Audit it was observed that fencing had already been installed for the expanded area of the MLA. This was documented in the Q3 2023 Audit Report as technically a non-conformance with the approved 2012 ESIA as the Project Description had been modified without prior Lender or IESC evaluation of potential environmental and social impacts, and associated planned mitigations, of the expansion.

Figure 2-2 Location of New MLA Fence to the North, in Blue



OT has obtained approvals for the expansion of the MLA from regional Khanbogd soum regulators. It was described in the prior Q3 2023 IESC Audit Report that a corresponding domestic Detailed Environmental Impact Assessment (DEIA) had already been approved by the Mongolian Ministry of Environment and Tourism (MET). However per the current update environmental the formal approval is still pending (Figure 2-3). The project modification required incorporation into the KB Land Management Plan of 2022, as well as a formal KB Governor resolution. Stakeholder consultation regarding the mine expansion has been in progress under the existing Stakeholder Engagement Plan.

Figure 2-3 Expansion of Mine License Area Schedule as of Q2 2024



In Q3 2023 a Notice of Change was submitted to the Lenders, along with a supporting "Supplementary ESIA", to correspond with the existing 2012 OT Mine ESIA. The Supplemental ESIA was submitted to the Lenders as Notice of Change 2023-008. The prepared Supplemental ESIA does not scope an entirely separate project, such as a stand-alone power plant or industrial estate. The potential OT mine project environmental and social impacts and associated mitigations were addressed in the original 2012 ESIA, and the proposed activity is a slight expansion of the existing mining operation. As such the Supplemental ESIA was submitted for review under the established Management of Change process, as described in the ESMP.

The objective of the Supplemental ESIA to assess the direct, indirect and cumulative (where applicable) environmental and social impacts associated with the predicted mine subsidence zone. The subsidence is not expected to create dramatic cliff features; rather a gradual bowl-shaped depression will form at the surface, so access is restricted (Figure 2-4). The Supplemental ESIA seeks to identifies potential impacts for expansion of the MLA, as well as mitigation and compensation measures that are necessary for Oyu Tolgoi to continue to meet its environmental and social commitments, including national legislation and requirements of Project Lenders. The NoC provides an environmental and social impact assessment following an established methodology, resulting in identification of potential environmental and social impacts of high, moderate or low significance.

Figure 2-4 Interior Fence Restricting Access to the Planned Subsidence Zone

The Supplementary ESIA was then reviewed by the both the Lenders and IESC with a formal response to the NoC provided to OT in Q4 2023. In summary the IESC recommended objection to the submitted NoC. This stemmed from some disagreement regarding eventual determination in the ESIA of "minor" residual significance to certain environmental and social receptors. For example more information was required to adequately ensure preservation of surface water flow, and potentially groundwater flow, associated with any rerouting of the Dugat ephemeral river system around the MLA. Additional detail was requested

regarding impact to the historic Dugat herding well, as well as potential loss of access to a culturally significant archeologic site (an “ovoo”).

This feedback was accepted by OT, who then worked with their third-party consultant to revise the Supplementary ESIA. This revised ESIA was just recently completed in Q2 of 2024, and will be reviewed by the Lenders and IESC immediately following issuance of this Audit Report. During the Audit a discussion was held regarding planning for the Dugat River Diversion. As shown on Figure 2-3 actual construction of the diversion is scheduled for 2025, following establishment of the design in Year 2024. However at the time of writing the final design of the diversion is still in development and will require coordination with possible future expansion of TSF storage capacity to the east of the mine site.

In June 2020 the Government of Mongolia and OT formalized an Amended Agreement to the Power Source Framework Agreement (PSFA – AA). This PFSA-AA prioritized the construction of a state-owned power plant (SOPP) that would provide electricity to the OT site under a Power Purchase Agreement. In February 2021 the Ministry of Energy determined that a SOPP alone cannot reliably supply power to OT LLC and that the power supply should be sourced from the Mongolian national grid. The assessment also highlighted supplementary generation and transmission capacity are required before the Mongolian national grid can reliably supply power to OT.

In January 2022 OT formalized an Electricity Supply Agreement (ESA) with the MoE that is valid through 2030. In a follow-on April 2022 letter to the MoE it is acknowledged that tie-in with the Mongolian power grid will be the long-term power sources for OT to align with the PSFA – AA. The actual achievement of a local power supply to OT depends on the Government of Mongolia’s implementation of the Tavan Tolgoi power plant along with other generation and transmission projects. Until that occurs OT will be supplied by imported power from China.

2.3 Report Organization

Subsequent sections of this report are organized as follows:

- Section 3 – Health, Safety, Environment and Social Performance Management Systems
- Section 4 – Environment
- Section 5 – Social
- Section 6 – Worker Health and Safety and COVID-19 Response
- Section 7 – Cultural Heritage
- Section 8 – Non-Conformance Table

The findings of this IESC review are presented in the form of observations, comments and recommendations. Two types of findings are included:

- non-conformances, included in the Non-Conformances Table (Section 8), which refer to issues related to Project commitments included in the ESIA or Operational Management Plans; and
- recommendations, included at the end of each section (3 – 7) which are based on the collective experience of GIIP and expertise of the IESC team members.

The IESC’s recommendations are not considered mandatory and therefore their implementation is not required. However the IESC encourages the Project to consider the usefulness of all these

recommendations and incorporate them, as appropriate and if technically/economically feasible, into new management activities.

3 Environmental and Social Management System and Planning

Environmental and social management for the OT Project is defined through a series of interlinked documents. The first tier of these is the framework document – Environmental and Social Management Plan[3] (ESMP). Underlying this ESMP are other OESMPs and procedures including the Biodiversity Management Plan (BMP). These and other supporting documents have been described in previous IESC reports. The ESMP was last updated in 2021, and is scheduled for updating in Q3 of 2024, which is slightly behind the regular biannual update schedule. The Health, Safety, Environment and Community Management System (HSEC MS) framework for the OT Project is governed by the Rio Tinto HSEC MS, which is a mature system aligned with ISO 9001, ISO 14001, and OSHAS 18001 requirement and which is applied across the Rio Tinto group.

Overall the HSEC MS is intended to manage the Project in compliance with Rio Tinto, Mongolian and Lender requirements of performance. Within the HSEC MS there are the OT Environment Team and the Communities and Social Performance (CSP) Team. The OT Project is subject to a variety of internal Rio Tinto and other external audits and reviews. Calendar Year 2023 internal and external ESHS audits are shown in Table 3-1.

Table 3-1 2023 External ESHS Audits

Origin	Description
Government	Environmental Audit to verify national compliance
Government	DZ Environmental protection agency inspection Environmental management plan 2023
Government	Mongolian Ministry of Environment and Tourism inspection
Government	Ministry of Construction and Urban Development state inspection of mine facilities
Government	OT Feasibility Study 2023 inspection government experts
Government	Prevention Fire and Disaster Management
Rio Tinto	Safety maturity model
Rio Tinto	OT Water Management
Rio Tinto	Copper Mark Certification
Rio Tinto	Business Conformance Audit (BCA)
Rio Tinto	Contractor Management Excellence Assessment
Rio Tinto	Tailings and Water Storage internal Standard Review
SGS Aviation	Audit on Khanbumbat airport

[3] Environmental and Social Management Plan – Doc. No. OT-10-PLN-0003 updated 2021

3.1 Status of Operational Environmental and Social Management Plans

The current ESMP reflects the identification and assessment of impacts and risks detailed in the integrated OT ESIA, and is described in previous IESC reports along with the OESMPs and supporting procedures/other implementation documents. The ESMP goes through a formal review cycle every two years. In 2021 the ESMP was updated via a formal Notice of Change (*NoC 2021- 002: Update and Revisions to the OT Environmental and Social Management Plan OT-10-PLN-0003)*. This updated ESMP was reviewed by the IESC and includes changes such as the updating of management plans and procedures, revised organizational structure, as well as operational and business updates. The ESMP has recently been updated to meet Rio Tinto requirements, and will be submitted to Lenders for review in Q3 2024. The ESMP is generally well-functioning and recent updates are likely to be relatively minor.

A summary of current OT Operational Management Plans and underlying Key Implementation Documents is provided in Table 3–2. These plans remained mostly consistent in Year 2023 as with the year prior. Overall the IESC has not noted any requirement for significant modification to environmental and social planning of the overall OT project with incorporation of the underground development. Key management practices remain consistent, such as ongoing monitoring of air and water quality, as well as the management of mineral waste (tailings and waste rock).

Table 3-2 Current 2023 Operational Management Plans and Key Implementation Documents

Operational Management Plan	Document Reference	Key Implementation Documents
Atmospheric Emissions Management Plan	OT-10-E12-PLN-0001	• Air Quality Monitoring Plan (OT-10-E12-PLN-0002) • Rio Tinto Air Quality Protection Standard (E12)
Biodiversity Action Plan	OT-10-E16-PLN-0001	
Biodiversity Management Plan	OT-10-E16-PLN-0002	• Illegal Wildlife, Wildlife Products, and Plant Procedure (OT-10-E14-PRC-0005) • Dead animal and nest inspection procedure along roads and power lines (OT-10-E14-PRC-0004) • OT Site Wide Traffic Management Plan (OT-10-C3-PRC-0005) • OT-GSK Road Mitigation Strategy
Biodiversity Offset Management Plan	OT-10-E14-PLN-0007	
Biodiversity Monitoring and Evaluation Plan	OT-10-E16-PLN-004	
Community Health, Safety and Security Management Plan	OT-10-PLN-0001	• Community Outrage Plan (OT-12-PLN-0016-M)
Contractor Management Framework	OT-07-PLN-0001	• OT General Conditions for Goods and Services • OT Procurement Principles (PR-00) • Supplier Qualification Policy (PR-02) • International Strategic Supplier Collaboration Policy (PR-05) • South Gobi Supplier Development Policy (PR-06)

Operational Management Plan	Document Reference	Key Implementation Documents
		• National Supplier Development Policy (PR-07) • OT Procurement Personnel Code of Conduct (PR-08) • Contractor Engagement Handbook for Designated Managers (OT-07-GDL-9007) • Contractor Engagement Handbook for Suppliers (OT-07-GDL-9006)
Cultural Heritage Management Plan	OT-10-PLN-0002	• Land Disturbance Permit Procedure (OT-10-E14-PRC-0003) • Cultural Heritage Management System Procedures • Cultural heritage chance find procedure
Ecosystem Service Monitoring and Evaluation Plan		
Emergency Preparedness and Response Plan	OT-12-PLN-0011	• Spill Response Procedure (OT-10-E15-PRC-0002) • Incident Management Flow Chart (OT-14-MAP-0002) • OT Emergency Response Plan (ERP) • Hazard Identification and Risk Management Procedure (OT-03-PRC-0001)
Hazardous Materials and Non-Mineral Waste Management Plan	OT-10-E15-PLN-0001	• Hazardous Material Management Procedure (OT-10-E15-PRC-0001) • How to use ChemAlert Guideline (OT-10-E15-GDL-0001) • Incident Management Procedure (OT-14-PRC-0009) • Spill Response Procedure (OT-10-E15-PRC-0002) • Non-Mineral Waste Classification Procedure (OT-10-E15-PRC-0004) • Non-Mineral Waste Collection and Transfer Procedure (OT-10-E15-PRC-0006)
In-migration Management Plan	OT-10-PLN-0004	None

Operational Management Plan	Document Reference	Key Implementation Documents
Labor Management Plan	OT-10-PLN-0005	• HR-A1: Employment Policy • HR-A2.1: Recruitment and Selection Procedure • HR-B-044: Alcohol, Narcotic Drugs and Psychotropic Substance Management Procedure • HR-C3: Language Training Procedure • HR-C4: Trades Training Procedure • HR-D5.1: Service Recognition Procedure • HR-D3: Working Conditions Procedure • HR-D1.1 Allowance Procedure • HR-G2: Equal Employment Opportunity Policy • HR-G6.1: Hours of Work Procedure • HR-G1.1: Human Rights Guidance • HR-G1: Human Rights Policy • HR-G5.2: State Awards and Nomination Procedure • HR-H4: Expatriate Code of Conduct • HR-H7.1: Camp Standard and Code of Behaviour • HR-ST-02: Drug and Alcohol Management Standard • HR-H4: Expatriate Code of Conduct • HR-H2.1: Grievance and Fair Treatment Procedure • HR-H.3.1: Leave Procedure • Human Rights Policy
Land Disturbance Control and Rehabilitation Management Plan	OT-10-E14-PLN-0005	• Topsoil Handling Procedure (OT-10-E14-PRC-0001) • Technical Rehabilitation Procedure (OT-10-E14-PRC-0002)

Operational Management Plan	Document Reference	Key Implementation Documents
		• Land Disturbance Permit Procedure (OT-10-E14-PRC-0003) • Priority Plant Protection Procedure (OT-10-E14-PRC-0007) • Biological Rehabilitation Procedure (OT-10-E14-PRC-0010)
Mine Closure Plan	None	• Mine Closure Plan
Mineral Waste Management Plan	OT-10-E13-PLN-0001	• Integrated Mineral Waste, Acid Rock Drainage and Dump Management Plan OT-10-E13-PLN-0002 • Oyu Tolgoi Material Segregation Procedure (OT-10-E13-PRC-0001-E) • Rio Tinto Chemically Reactive Mineral Waste Control Standard (OT-10-E13-STD-0001) • Rio Tinto Chemically Reactive Mineral Waste Control Standard (OT-10-E13-STD- 0001)
Noise and Vibration Management Plan	OT-10-E00-PLN-0001	• Noise Monitoring and Control Procedure (OT-00-PRC-0001) • Blasting Standard Work Procedures
Pastureland and Livelihood Improvement Management Plan	OT-10-PLN-0013	• Local Agribusiness Support Strategy
Resettlement Action Plan	OT-10-PLN-0006	• Grievance and Fair Treatment Procedure (HR-10) • Pastureland Management Strategy
Stakeholder Engagement Plan	OT-05-PLN-0001	
Transport Management Plan	OT-10-C3-PLN-0001	• Road Construction and Maintenance Procedure (OT-10-C3-PRC-0001) • Heavy Vehicle Operating Procedure (OT-10-C3-PRC-0002) • Light Vehicle Operating Procedure (OT-10-C3-PRC-0003) • Tire and Rim Procedure (OT-10-C3-PRC-0004) • OT Site Wide Traffic Management Plan (OT-10-C3-PRC-0005)

Operational Management Plan	Document Reference	Key Implementation Documents
Water Resources Management Plan	OT-10-E11-PLN-0001	• Water Monitoring Procedure (OT-10-E11-PLN-0002) • Water Quality Assurance and Quality Control Plan (OT-10-E11-PLN-0003) • Rio Tinto Water Quality Protection Standard (E11)

3.2 Notice of Changes to Operational Environmental and Social Management Plans

A Management of Change process is described in the ESMP, and is intended to allow evolution of the Project over time either due to Project modifications or updated environmental and social procedures. The implementation of the formal NoC process is described in previous IESC reports. In summary there are three categories of NoCs with Category 1 being significant changes to the Project Description or Project Standards and Category 3 being temporary modifications within the Mine License area that have no or limited environmental or social impact.

There have been no Category 1 NOC's submitted for the OT project. There have been a number of Category 2 or 3 Notice of Change requests submitted to Lenders. A rolling list of Category 2 NoC's from the last three years is listed in Table 3-3, including their formal titles, date of submission, and approval status as of Q2 2024.

Table 3-3 Category 2 Notice of Changes for Year 2021 – 2024

Notice of Change Number	Notice of Change Title	Date of Submission to Lenders	Status
2021-01	Update and Revisions to the OT Cultural Heritage Management Plan	April 2021	Approved
2021-02	Environmental and Social Management Plan Update	September 2021	Approved
2021-03	Continuous Emission Monitoring System Data	September 2021	Approved
2021-04	Copper Concentrate Shipment through OT-UB-Erlain	October 2021	Approved
2022-01	Copper Concentrate Shipment Through OT-TT-ZB	March 2022	Approved
2022-02	Revisions to the OT Community, Health, Safety and Security Management Plan	April 2022	Approved
2022-03	Update and Revisions to the Pastureland and Livelihood Improvement Management Plan	June 2022	Approved
2022-04	OT Concentrator Conversion Project	July 2022	Approved
2022-05	Copper Concentrate Shipment through OT-TT-ZB Railway Erlain	November 2022	Conditionally approved for pilot shipment
2022-06	Revisions to Contractor Management Framework	December 2022	Approved
2023-01	Changes to Mineral Waste Management Plan	January 2023	Approved
2023-02	Changes to Oyu Tolgoi Material Segregation Procedure	January 2023	Approved
2023-03	Changes to -Biodiversity Management Plan	January 2023	Approved
2023-04	Changes to OT-10-E16-PLN-0004-E-Biodiversity Monitoring and Evaluation Plan	January 2023	Approved
2023-05	Changes to HR-10- PLN-0001-E- Labour Management Plan	January 2023	Approved
2023-06	Revision to the Water resource management plan and updates in relevant documents on E11 Water Quality Protection Standard	February 2023	Approved
2023-07	To accommodate FIFO employees in KHB Soum rental apartment	March 2023	Approved
2023-08	Mine Subsidence Zone Environmental and Social Impact Assessment	September 2023	Pending. Revised Supplemental ESIA provided Q2 2024

3.3 Environmental and Social Action Plan

Table 3-4 contains a summary of the Project Environmental and Social Action Plan (ESAP), as well as a current Q4 2024 implementation status. The ESAP was developed at the time of ESIA finalization and Lender financing commitment (2012). This ESAP is disclosed at the following link:

https://disclosures.ifc.org/project-detail/ESRS/29007/oyu-tolgoi-llc

Table 3-4 Environmental and Social Action Plan

ESAP Item	Action Plan Item	Implementation Status
1	Power Plant Environmental and Social Impact Assessment (ESIA)	An ESIA for a potential power plant at Tavan Tolgoi, to be owned and operated by OT, was reviewed by the IESC in Q4 of 2018. The Government of Mongolia then announced that any power plant will be state-owned, but that it may take some time for this project to develop. As such in 2022 an Electricity Supply Agreement (ESA) was established between OT and the Government of Mongolia. The ESA describes that power to the project will continue to be provided by the Inner Mongolian Power Corporation until a domestic state-owned source becomes available.
2	Biodiversity Action Plan (BAP)	Implemented and generally in progress as planned. However there is one key Level III non-conformance identified in this report regarding offset to rangeland impacts. As discussed in Section 4.9 in Q1 of 2024 a Biodiversity Workshop was held between OT, the Lenders, and the IESC, with a path forward identified.
3	Operational Phase Environmental and Social Management	Completed as detailed in Table 3–2 of this report
4	Mine Closure Plan	The current version of the Oyu Tolgoi Closure Plan was last updated in 2017 (AMEC). A revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2015 and 2021. OT has previously prepared a Gap Assessment of the current Closure Plan with these requirements. OT has previously represented that the updated Closure Plan would become available in Q4 of 2022. From the Q3 2022 Audit Report the tendering of bids to update the Closure Plan was described as “in progress”. In Q2 2023 OT reported that procurement has been delayed but that an external consultant had eventually been retained to update OT’s Closure Plan referencing overall OT closure requirements as detailed above. From the prior Q3 2023 Audit it was reported that an updated draft Closure Plan would become available for review by Q4 2023; however at the time of writing this over-arching Closure Plan was still in development. An updated 2023 Feasibility Study is in late stages of finalization, and this will drive updated closure costs. In discussions during this Audit it was reported that current overall mine closure reserving costs at estimated at USD$1.8 billion as of 2024. Overall OT closure lability lies within Rio Tinto’s over-arching closure provisioning. The current overall OT Closure Plan is outdated, although TSF Cell#1 is under progressive reclamation. This reclamation is being undertaken following a specific Oyu Tolgoi TSF Cell#1 Closure Plan, which is draft form. The IESC has reviewed this document and considers it fit for purpose, although some costing information is still pending. OT has represented that the TSF Cell#1 Closure Plan will be finalized by the next Audit in Q3 of 2024. The TSF Cell#1 Closure Plan covers a five year closure period beginning in 2024 and extending into 2029. A 10 m NAF cover layer has already been emplaced as part of progressive reclamation. Rock mulch and other

		revegetation trials are in progress and will be observed during the Q3 2024 site visit.
5	Worker Housing Development	OT is considering plans to develop new infrastructure for worker housing, which may include both on-and off-site accommodation. The use of off-site accommodation (rental apartments in Khanbogd) was the subject to recent NOCs (NOCs 2023-005 and 2023-007), which have been approved. While the management of the specific rental apartments demonstrated adequate E&S controls, existing accommodation stock does not meet demand and a broader Worker Housing strategy and plan has not yet been developed. The ESAP item notes that construction and/or use of offsite worker housing requires review and approval by Lenders.
6	Industrial Estate	OT currently has no plans to develop an industrial estate outside of the site, however is a key stakeholder in the development and implementation of the Khanbogd Masterplan, which includes an industrial zone.
7	Pastureland Livelihood and Improvement Management Plan	The PLIMP was revised in 2022 and current performance is described in this report.
8	Concentrator Expansion Reports	A concentrator conversion project is in construction to accommodate the processing of higher-grade underground ore (Approved NoC 2022—04). There is no expansion of throughput through the concentrator.
9	Independent E&S Monitoring Program	Ongoing with role of IESC
10	Environmental and Social Reports	Most recent 2023 Annual Environmental and Social Report provided by OT in Q2 of 2024
11	Transmission Line from OT to Khanbogd soum	Completed
12	OT – GSK Road Diversion	Completed
13	Update of Resettlement Action Plan	Completed

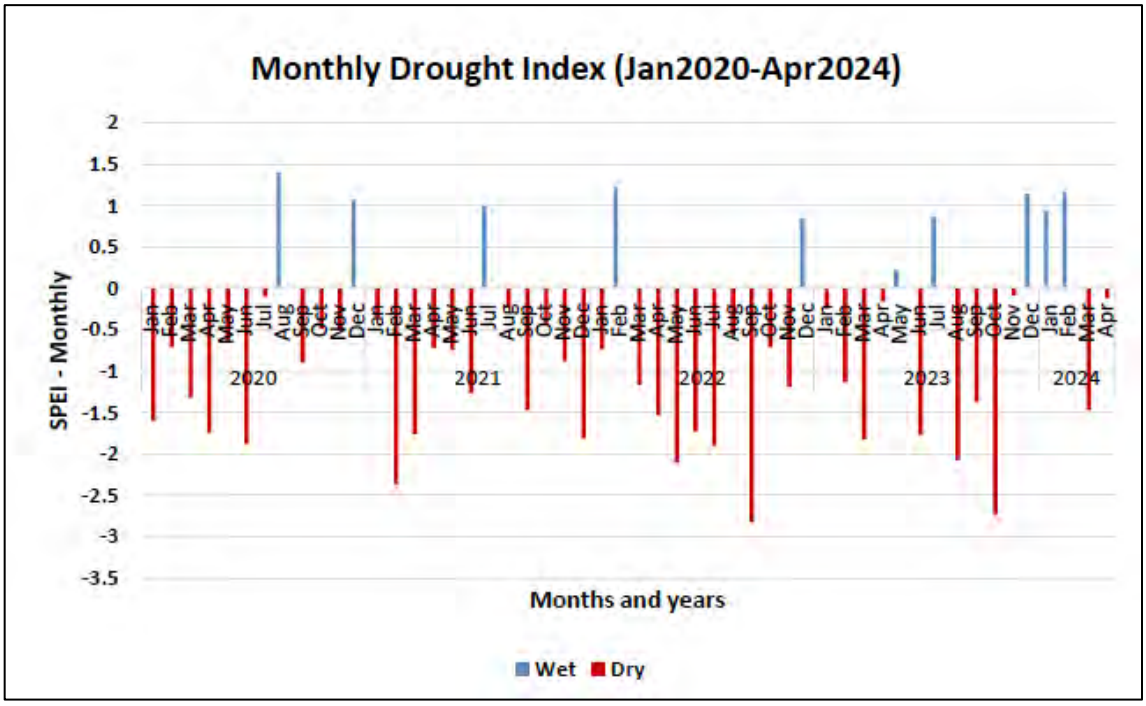
4 Environmental Performance

4.1 Water Management

Calendar year 2023 precipitation totaled 67.6 mm at the OT weather station. This represents continuation of a dry trend with years 2021 and 2022 precipitation values of 95.3 mm and 53.3 mm, respectively. All of these values are well under the mean value for the site of 100.1mm/year [4]. The prolonged very dry conditions were apparent during the Q3 2022 and Q3 2023 site visits, with limited forage (i.e., green vegetation) apparent. Precipitation patterns at the site have varied greatly over the last several years, leading to direct impacts on pasture quality. Although in sum total limited rainfall has fallen on the OT site in 2023 there was an exceptional precipitation event on July 28 in which 28 mm of precipitation fell in just 20 minutes. This led to a substantial flood event, as discussed in the prior Q3 2023 Audit Report.

In 2021 Oyu Tolgoi issued a paper examining long-term climate trends in the South Gobi region (*Observed Climate Change at Local Scale – Southeastern Gobi in Mongolia, 2021).* This paper was co-authored by OT Environment Team staff and climate professionals at the National University of Mongolia. In the study climate data from 1976 – 2019, and collected from four different soums in the southeastern Gobi region, were critically evaluated to determine long-term trends. This was the first study of its kind for the region. In summary the climate has become hotter and drier over the studied time period. Figure 4–1 summarizes the resultant drought index trends determined in the study, with data through Year 2024 added. As can be seen the drought index has become increasingly severe over the last several years.

Figure 4-1 Yearly Drought Index in Southeastern Gobi Region 2020 - 2024



[4] Oyu Tolgoi Mine Site General Condition Report. 2020. Document Number: OT-10-E12-COM-0001-D-Communication.

What quantity has fallen has increasingly occurred short intensive torrential rain events. These events do not evenly distribute moisture over the range in the summer season, leading to a higher drought index. Higher temperatures in the region have exacerbated the drought index, as what precipitation does fall quickly evaporates. This has also limited forage growth and caused water stress to livestock and herders in the region. The limited number of favorable "wet" months over the last five years is shown in Figure 4-1.

It should also be noted that the winter of 2023 – 2024 brought about a severe "dzud" across most of the country. A dzud is a regional event in which freezing temperatures and heavy snow prevent access of livestock to forage, resulting in mass starvation of these livestock and corresponding severe social impacts. The heavy snow events can be seen in the precipitation data of Figure 4 -1 for Q4 2023 and Q1 2024. Although not detailed in this section the context of a dzud is very important in the region.

4.1.1 Water Use Efficiency

The OT Project is permitted to withdraw groundwater from 28 production wells installed in the regional Gunii Hooloi (GH) aquifer, which contains brackish and non-potable water also not suitable for livestock watering, at a rate of 918 L/s (approximately 79,315 m^3/day). Permitting for this water abstraction is contained in a Long-Term Water Contract with the Government of Mongolia, issued in 2016. The Long-Term Water Contract is valid through Year 2040.

In calendar year 2023 a total of 16.74 million m^3 of water was withdrawn from the GH aquifer. This is an increase from year 2022 quantities of 15.81 million m^3 of water withdrawn. This is equivalent to approximately 501.3 L/s. Recycling rates were lower in Q4 of 2023 with the transition from use of TSF Cell # 2 from Cell # 1. This resulted in increased raw water demand. The overall 2023 water usage was just over 57.8% of the permitted amount approved by the Ministry of Environment and Tourism (MET) under the Long-Term Water Contract. Year to date 2024 metrics for water abstraction from the GH aquifer are a total of 4.29 million m^3 through the end of April, or approximately 394.4 L/s.

In 2023 approximately 90% of the water sourced from the GH basin was from Clusters 1, 2 and 3, located in the northeast of the aquifer basin, with Clusters 4 and 5 to the southwest making up the additional 10% of supply. Maximum drawdowns in the GH aquifer are located at the centers of the NE and SW bore fields. Drawdowns in water levels are monitored at two key deep aquifer piezometers: Site A1 and A2 (Figure 4-2). Results from monitoring are currently compared with 2015 modeling predictions. Water levels in the GH are responsive to pumping cycles, and as a result water levels can fluctuate between 3 – 8 meters due to variation in the chosen abstraction regime. Generally, water levels are significantly above authorized drawdown limits.

At Site A1 (GHMB11-02) observed water level drawdowns generally conform with the 2015 model predictions for a "Base Storage Scenario" (Figure 4-3). However, at site A2 the observed water levels are below model predictions for even the low storage scenario (Figure 4-4). An aquitard is present at site A2 which extends the cone of depression from pumping farther (i.e., a wider "cone of depression"). The short-term drop in recent water level at A2 is associated with increased demand in pumping with the transition in use to TSF Cell # 2 from the retired Cell # 1. OT is currently performing an update to the 2015 model which will be used in the re-assessment of the GH reserve. This updated modeling is required by the Mongolia Water Authority with the field program to be completed by Q3 2024.

Figure 4-2 Map of Gunii Hooloi Aquifer Production Bores (Blue) and Monitoring Bores (Red)

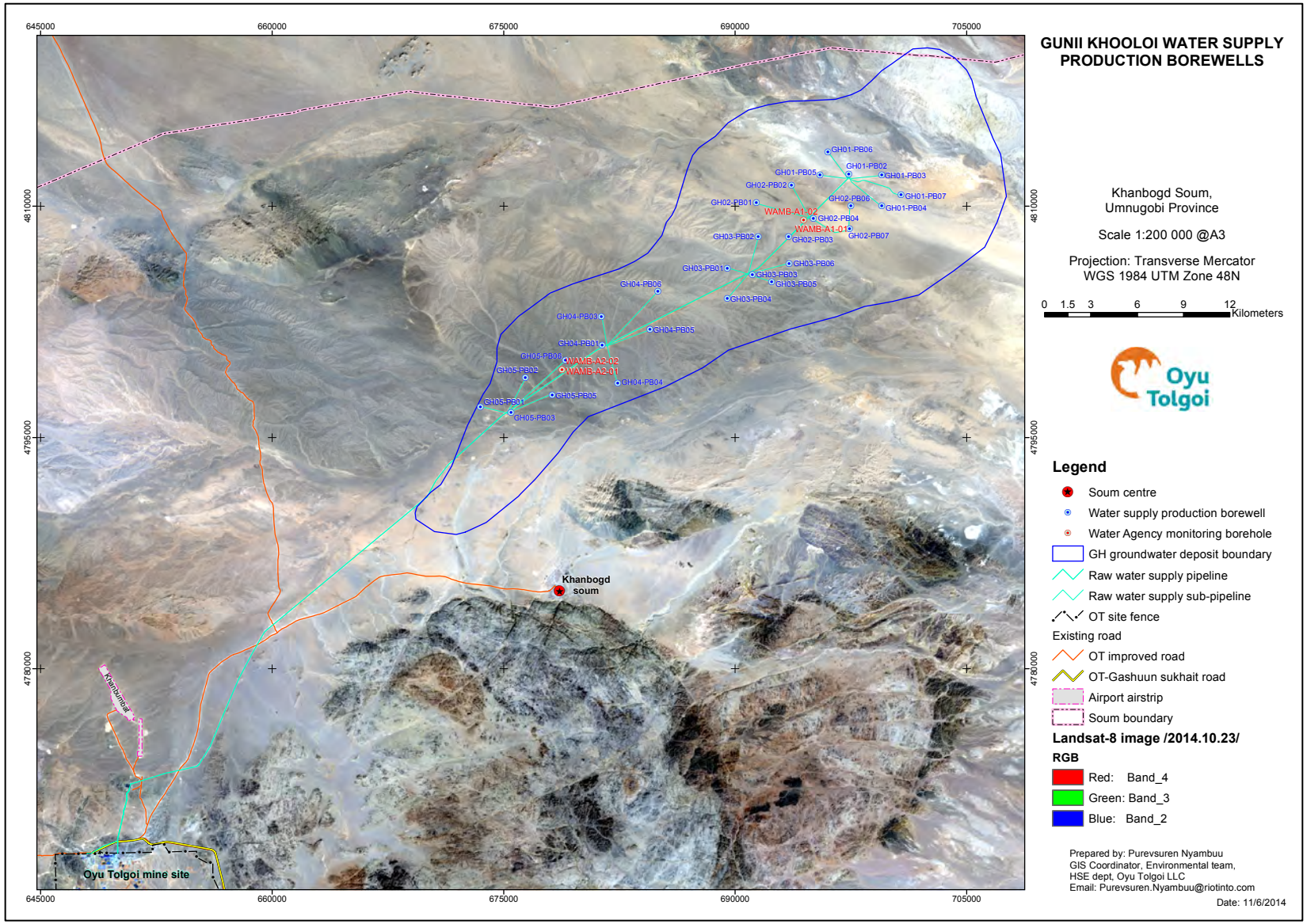


Figure 4-3 Observed Gunii Hooloi Aquifer Drawdown at Site A1 Relative to 2015 Model Predictions

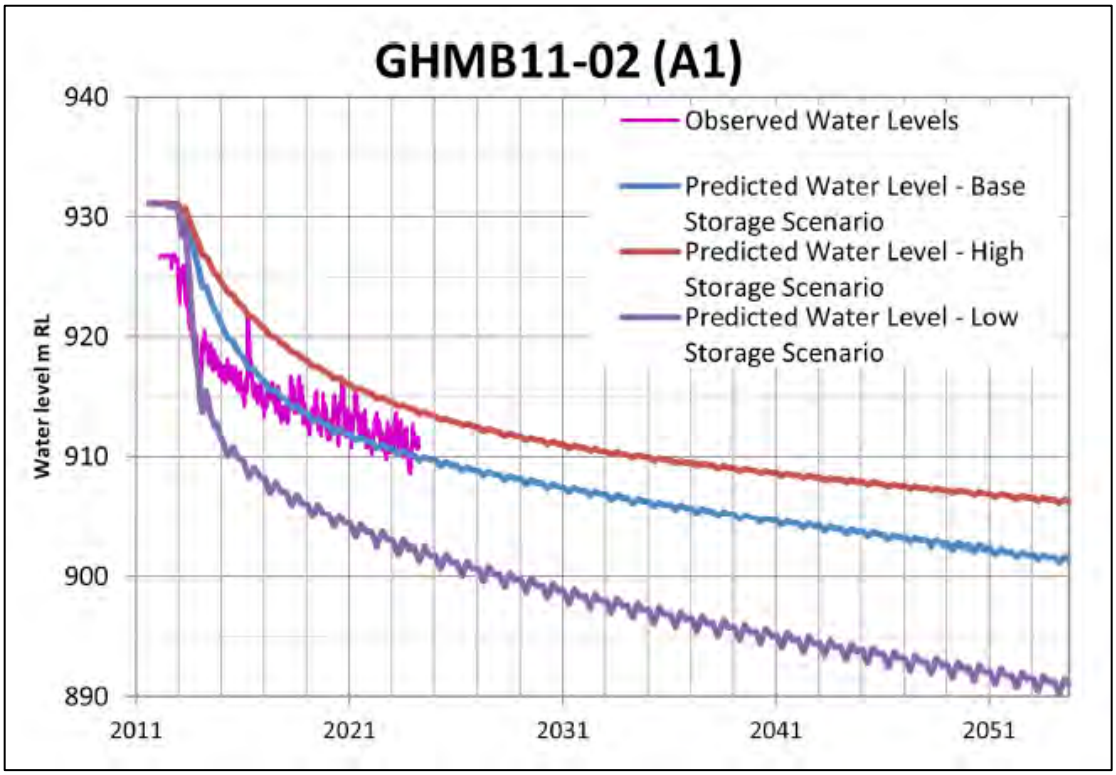
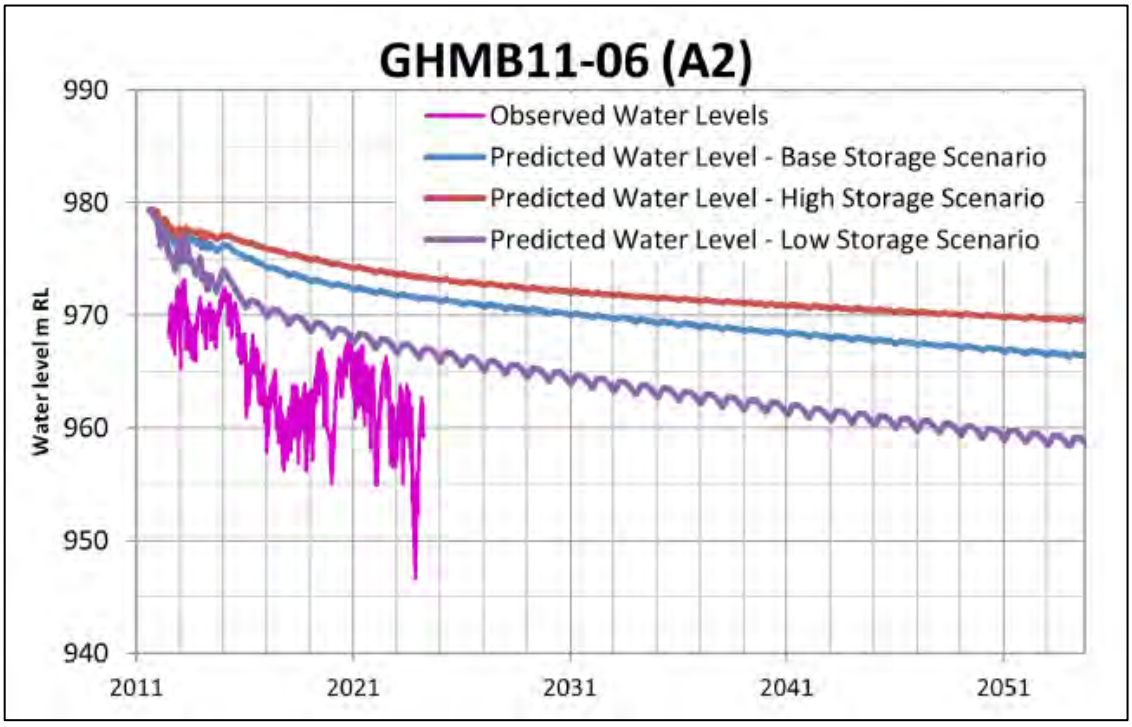


Figure 4-4 Observed Gunii Hooloi Aquifer Drawdown at Site A2 Relative to 2015 Model Predictions



OT target raw water usage rate is 700 L/s (60,480 m^3/day). The project has been below this target pumping rate since the beginning of open pit operations. In Year 2023 the total annual consumption rate of 530.7 L/s was 75.8% of the target usage rate (WR-KPI-02). This compares with 2022 consumption of 501 L/s, which was 71.5% of the target usage rate. Maximum monthly water raw water usage is highest in winter when much of available water at the TSF is locked up as ice. The concentrator circuit is by far the biggest use of water at the site, using almost 90% of all make-up supply, and as such is the focus of water recycling efforts.

In calendar year 2023 OT achieved an 85.7% water recycling efficiency rate. In calendar Year 2022 the water recycling efficiency rate was 86.6%, and in 2021 the recycling rate was 88.3%. Over the last several years, and historically, water recycling efficiencies have been well above the 80% threshold minimum criteria recycling rate included as a key performance indicator in the ESIA (WR-KPI-03).

In 2023 raw water usage rate was 433 L of water consumed/ton of ore produced. In Year 2022 the water usage rate was approximately 406 L of water consumed/ton of ore produced. These rates are all well below the ESIA Key Performance Indicator target of 547 L/ton-ore (WR-KPI-04). The IESC reports that OT has historically performed well in water consumption assessment criteria relative to ESIA commitments.

Oyu Tolgoi is one of the most water-efficient large copper mines in the world, ranking in the 1st quartile of raw water consumption per ton of ore produced. This has been benchmarked with the widely-used database maintained by Skarn Associates, which tracks this metric across 157 other copper operations. Average water consumption across this large data set is approximately 1,200 L/ton-ore. Specific to Oyu Tolgoi it is also very important to recognize that the deep groundwaters of the GH aquifer are brackish, non-potable, and not of sufficient quality for agricultural use or the watering of livestock (i.e., the water is naturally high in dissolved salts). In 2023 there were no community complaints related to potential impacts associated the withdrawal of brackish groundwater from the GH aquifer.

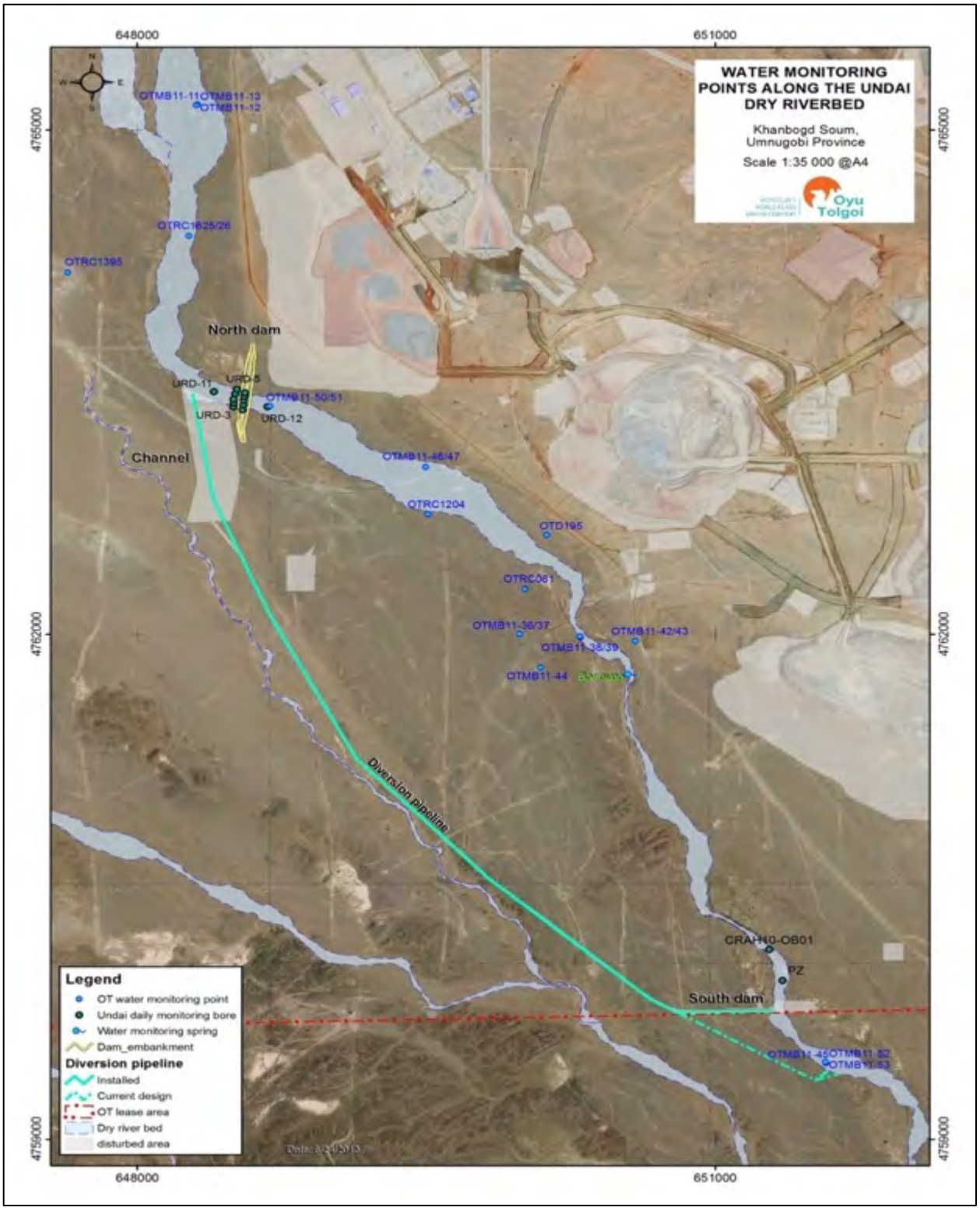
4.1.2 Undai River Diversion Performance

Findings regarding the current performance of the ephemeral Undai River Diversion are based on the most recent Undai River Biannual Report (#58), issued in Q2 2024. This is the 58th iteration of Undai River Diversion system reporting. The Undai River status reports were originally developed on a fortnightly frequency, then quarterly, and, since 2019, biannually. This reflects the gradual stabilization of the system following 2013 construction of the Undai River Diversion system, which bypasses the open pit. As discussed in previous reporting the Undai River Diversion system has the capacity of diverting up to ~ 700 m^3/day of groundwater flow from the northern cut-off dam through a subterranean tunnel system to an ultimate discharge point just south of the MLA.

Diverted groundwater flow creates a large artificial spring that is heavily used by wildlife as well as herders and their livestock. This artificial spring is referred to as the "New Bor Ovoo spring" to reflect replacement of the historic Bor Ovoo spring, which was previously located along the Undai River in the vicinity of the open pit. The historic Bor Ovoo spring was a relatively small feature with average annual surface of area of approximately 40 m^2. The morphology of the New Bor Ovoo Spring has been measured by OT since 2013 construction of the Undai River Diversion. The surface area of the new spring fluctuates as a function of freezing and gradual thawing from ambient air temperatures; however in all circumstances there is greater water availability in the New Bor Ovoo Spring.

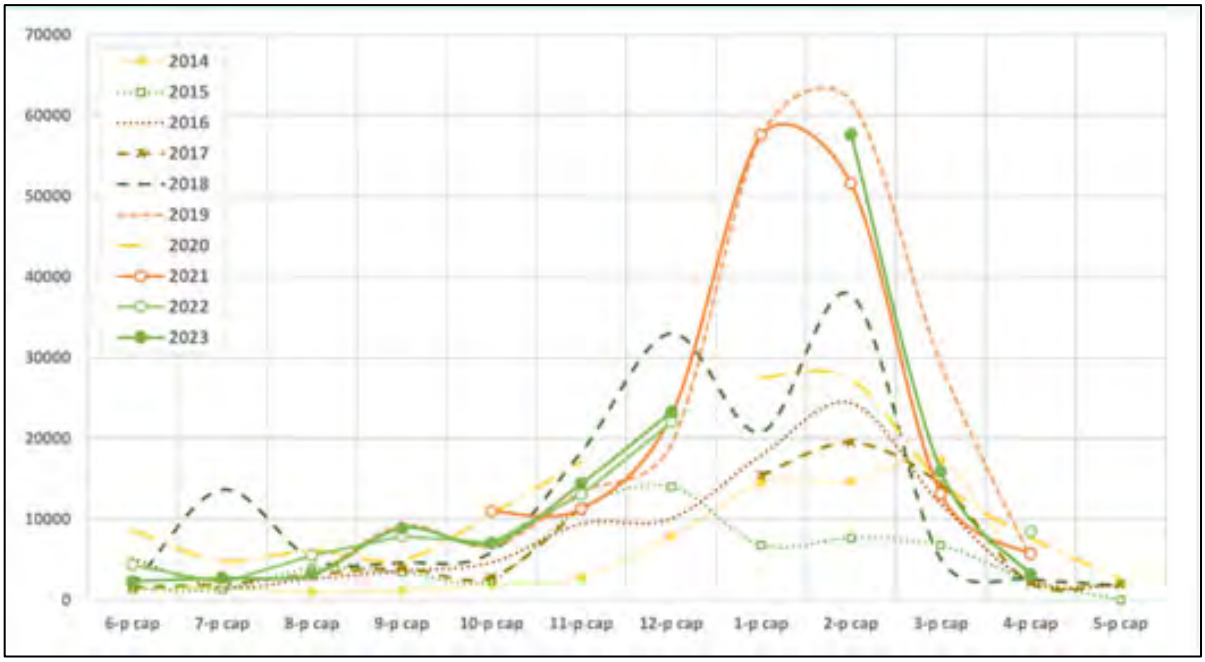
The Undai River Diversion is a mature system with an 11-year operating history. An established monitoring network of 14 nested boreholes allows monitoring of water levels in shallow alluvial sediments as well as deeper aquifers. The constructed Undai Diversion system, location of the old Bor Ovoo Spring, and location of the New Bor Ovoo Spring are shown in Figure 4-5.

Figure 4-5 Monitoring Points Along Undai River Diversion System



The New Bor Ovoo Spring has an established pattern of growing during the winter freezing season, then gradually decreasing in size through the summer months. The replacement spring has regularly had some water presence through the summer months, with the exception of the summer of 2015 which followed consecutive years of below-average precipitation. Figure 4-6 shows the pattern of New Bor Ovoo spring area expansion in winter months, followed by gradual reduction spring area in summer months.

Figure 4-6 New Bor Ovoo Spring Size 2014 - present



In addition to tracking morphology of the replacement spring there is key monitoring point OTMB11-45 approximately 400 m down gradient of the New Bor Ovoo spring in the shallow alluvial sediments of the Undai River. Data from post-construction (i.e., post 2013) monitoring reflect a general rising trend in water level, with current water levels ranging from 0.0 – 1.0 m below ground surface (bgs), as a function of precipitation and the seasonal freezing and melting of the ice sheets. In general, the depth to water is more shallow than from before construction of the Undai River Diversion. There are also monitoring points at this location installed in the weathered bedrock and fractured bedrock units underlying the Undai River alluvium (OTMB 11-52/53), and data from monitoring of these units also show a water level trend above historic value. These impacts are noted up to 2 km downgradient of the New Bor Ovoo location.

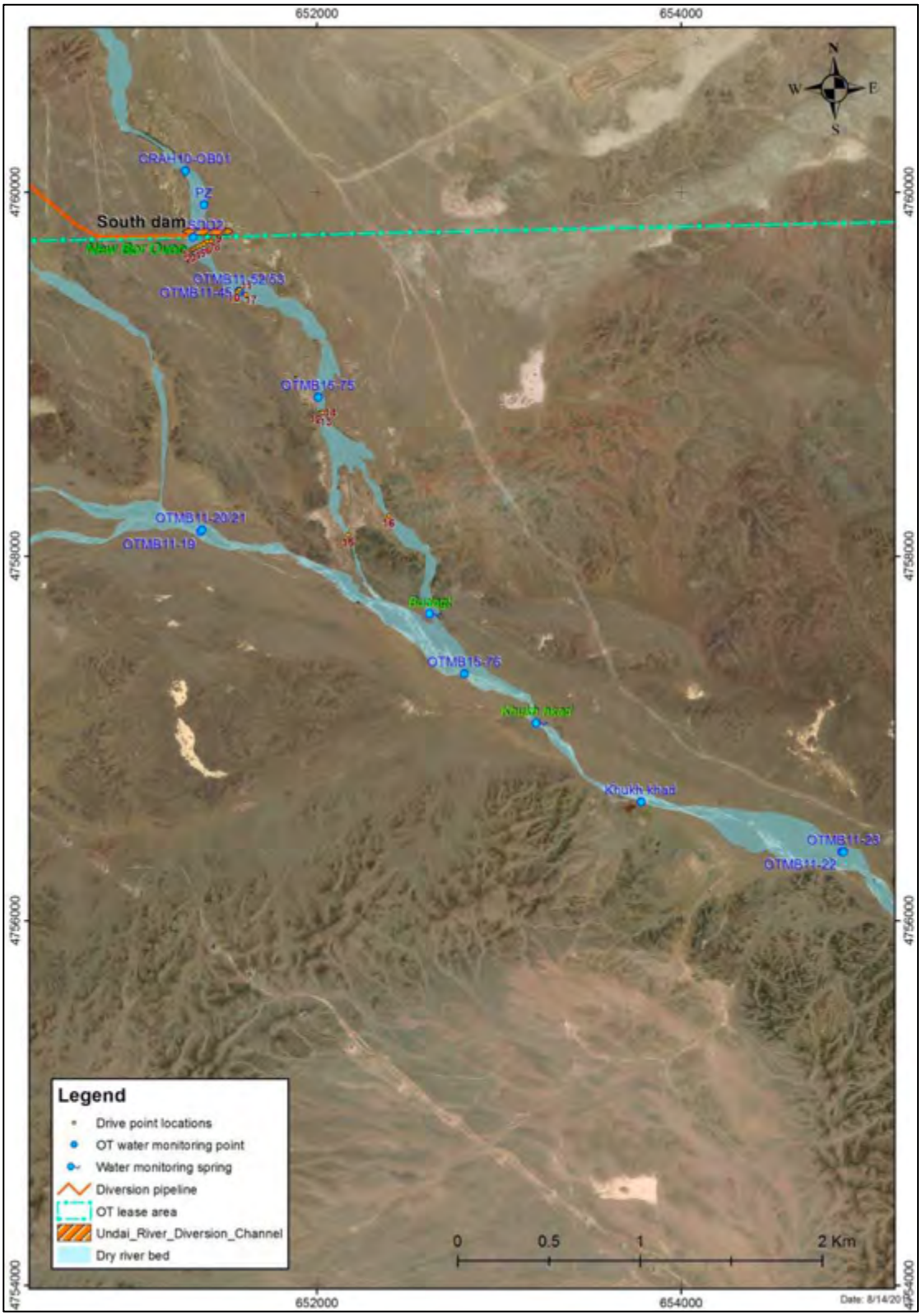
The trend of higher water levels suggests a greater volume of groundwater availability below the MLA than before construction of the Undai River Diversion. This is caused by the bypassing of the Diversion around faults that crosscut the Undai River system in the vicinity of the open pit. These cross-cutting faults historically caused leakage from the system, decreasing water availability in the Undai River alluvial sediments downgradient of the faulting. Despite the prolonged drought in the region in calendar Year 2023, the surface flow rate at the New Bor Ovoo has averaged 1.1 L/s. The New Bor Ovoo spring does have the potential to dry up if diverted rates of groundwater below fall below 50 m^3/day (0.6 L/s); however, in general this does not occur even during dry years.

The IESC last toured the site of the New Bor Ovoo spring during the Q3 2022 Audit, just before winter. Pictures of the spring at the time are shown in Figure 4-6. In the figure the location of the groundwater diversion outlet is shown (fenced to protect the discharge), along with the resultant downgradient surface water expression. Figure 4-6 also shows the usage of the surface water resource by Bactrian camels. The water quality of the New Bor Ovoo spring is typically very good with TDS values ranging around 500 mg/L, approximately half of the Mongolian potable drinking water standard of 1,000 mg/L (MNS 900 – 2018). Occasionally regional herders have accessed the fenced New Bor Ovoo spring outlet to obtain a potable water supply.

Figure 4-7 New Bor Ovoo Spring with Downgradient Surface Water and Livestock Use

The ultimate success of the Undai River Diversion is continuously assessed on long-term depth to groundwater data provided from Undai River monitoring points and the long-term viability of the closest springs located down gradient of the OT site. The success of the Project must also be evaluated against the backdrop of climate variations - for example normal episodic drought years and flooding events. Figure 4-8 shows the OT water monitoring network immediately downgradient of the MLA and within the Undai River channel.

Figure 4-8 OT Water Monitoring Network Immediately Downgradient of the New Bor Ovoo



The springs downgradient and closest to the OT Mine License Area include Budagt and Khukh khad (Figure 4-8), with Buural and Maanit located further downgradient (Figure 4-9 below). OT monitors monthly the surface area and depth of all springs and herder wells in its area influence. The most likely possibly impacted environmental receptor down gradient of the site is Budagt spring, which is located above the confluence of the Undai River Diversion (i.e., the "Western Channel") with the main Undai River channel. This specific location receives limited recharge with the exception of direct precipitation and diverted groundwater flow (i.e., floods are diverted to just below this location in the Western Channel).

The surface area expression of the Budagt spring varies widely in monitoring events, as does the morphology of other springs in the south Gobi region. During the Q3 2022 site visit the IESC toured all of the key springs down gradient of the site, and performance is detailed in the Q3 2022 Audit Report. The IESC has reviewed historic as well as Q2 2024 current photography and not discerned any anthropomorphic impact. Most recently the Budagt spring stays dry the winter and then contains modest moisture from April – September, then drying before winter.

The down gradient and relatively minor Khuk khad spring had historically been dry for much of the year, but in recent years has had increased water availability. In long-term monitoring data the spring had standing visible water for generally two months of the year. However, in 2022 the spring had standing water for eight months of that year. In 2023 the Khukh khad spring had water for approximately five months. This appears to indicate greater overall water availability in the Undai River system at this location, despite generally lower precipitation totals over the last several years. In general there appears to be greater water availability at this spring location and also at the associated Khukh khad herder well. Depth to water measurements at OTMB11-23 are shown in Figure 4-9. Monitoring point is adjacent to the Khukh khad herder well, and reflects general rising water level trends in weathered bedrock. The trend is also apparent in historic monitoring at the Khukh khad herder well, which has become buried in sediment and is no longer in use.

The Buural spring has had mostly continuous water availability, having standing water present in all months of calendar years 2022 and 2023 with the exception of winter months. A more detailed review of spring performance data will be completed in Q3 2024, following the summer recharge season.

Figure 4-9 Herder Wells and Springs Further Downgradient in Undai Channel (Buural and Maanit)

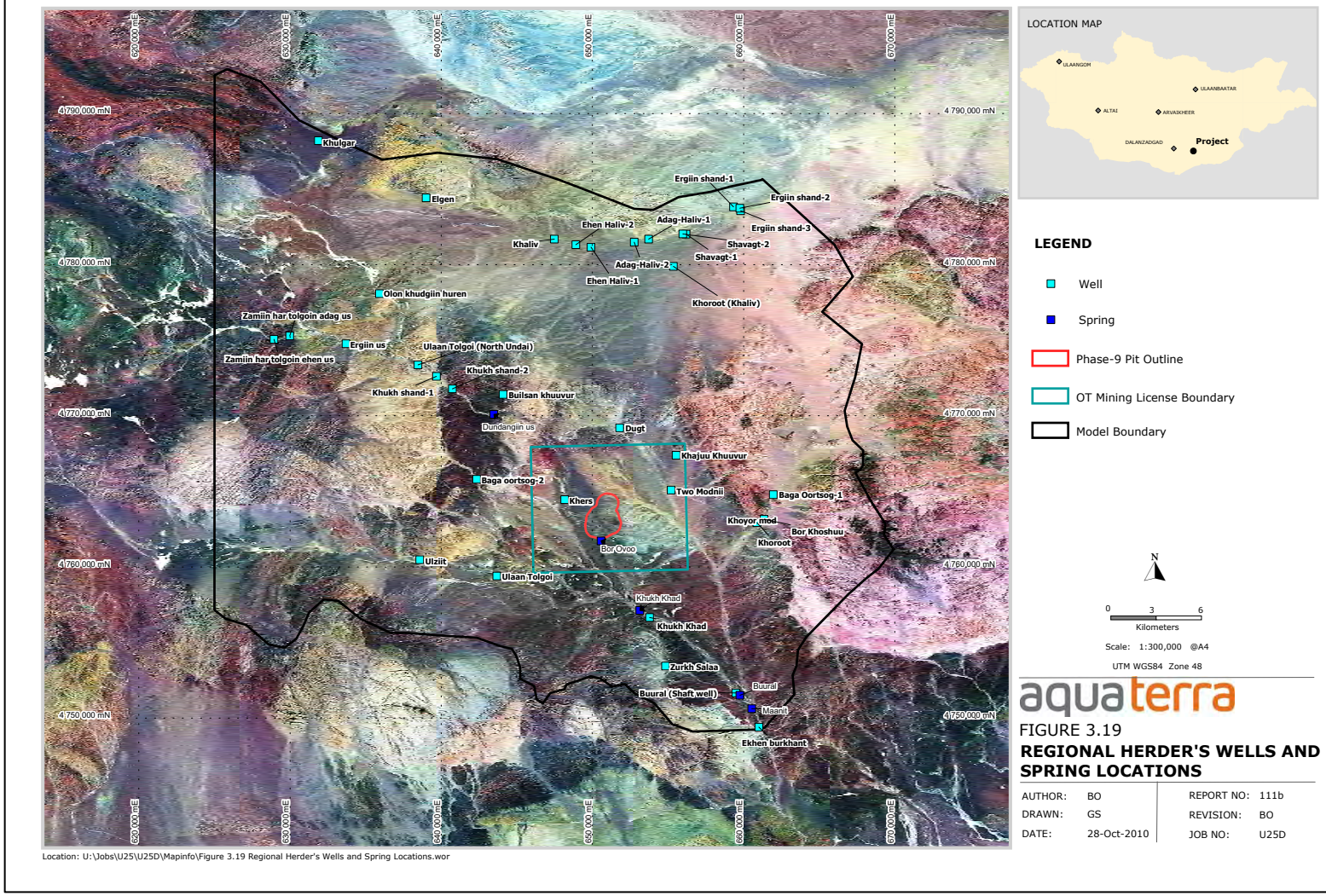
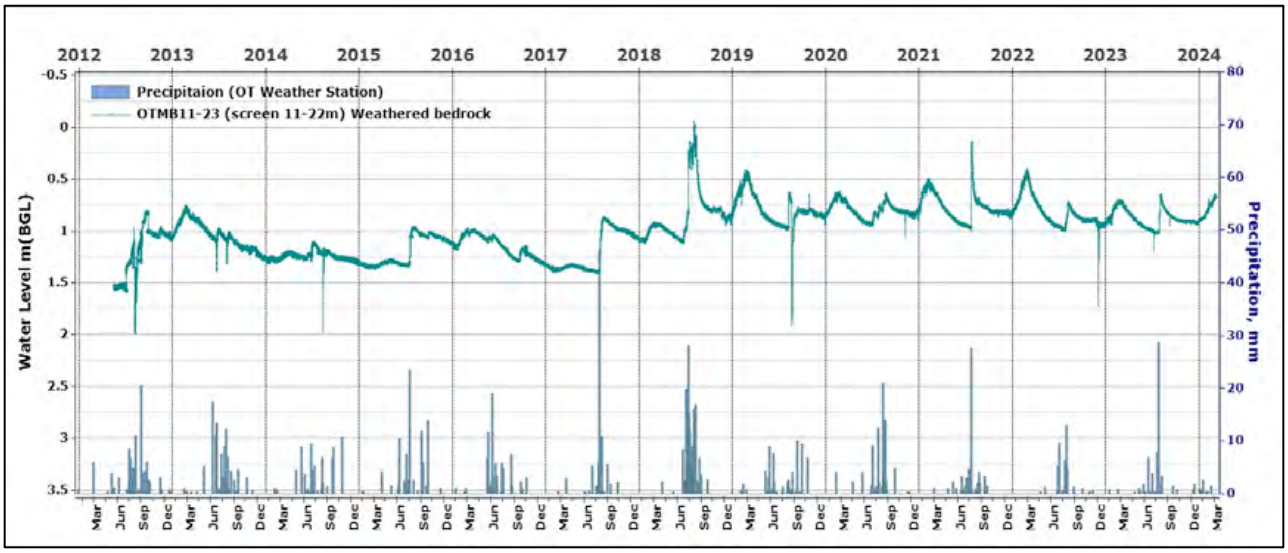


Figure 4-10 Depth to Water at OTMB11-23 (adjacent to Khukh khad Herder Well)



The presence of standing water at springs below the MLA is heavily influenced by the shifting morphology of the Undai River channel from episodic flooding, as well as seasonal variation. Even when a spring is "dry" there is often evidence of livestock/endemic species use via digging of shallow surface sediments to access near-surface groundwater as shown in Figure 4–11.

Figure 4-11 Evidence of Shallow Groundwater Accessed by Wildlife in Otherwise "Dry" Location

4.1.3 Water Abstraction Impact and Well Rehabilitation

Overall OT maintains a mature water monitoring network which encompasses a total of 399 points including 325 groundwater monitoring wells/boreholes, 64 herder wells and 10 natural springs. The monitoring network includes locations in the Khanbogd, Manlai and Tsogttsetsii *soum*s of the Ömnögovi *aimag.*

In both 2022 and 2023 there were no community complaints regarding perceived negative impact to herder wells as a result of OT water abstraction from the GH aquifer, or other OT mining activities. Over several years of monitoring no direct or indirect OT Project impacts to herder wells or natural springs have been identified in OT Environment Team analysis, although the department is continuously monitoring water level data to identify any possible correlation (WR-KPI-01).

In 2021 a 5-year external review, discussed in detail in the May 2022 IESC Audit Report, did not identify any discernible impacts in shallow alluvial units, including those in the Gunii Hooloi basin. Any prolonged water level decrease or change to water quality at a herder well triggers an OT Hydrogeological Assessment, including an investigation and organization of a meeting with the well owner. OT has been monitoring water levels in the region for 20 years now (since 2003). As a result of this extensive research it has been determined that in general the main factor influencing the performance herder wells is not climate change or the water abstraction of OT, but rather the condition of the wells themselves and outdated operating modes.

OT has over many years implemented well rehabilitation and new herder well installation programs in its broad area of influence. The intent of this program is to ensure long-term sustainable yield of existing wells, thereby preserving the pastoral livestock breeding tradition that has been practiced in the region for centuries. Many of the existing wells are of inferior construction quality and have poor hygiene elements. Details were provided in recent Audit Reports on four herder wells recently rehabilitated in the Dund khaliv, Togoot shand, Bayan and Gashuun Sukhait regions. In 2023 an additional five herder wells were rehabilitated in Year 2023 in the Khanbogd soum (wells Khukh shand, Builsan khuuvur, Bagsukhai, Elgen, Khulsan). Rehabilitation of historic herder wells is coordinated by the Communities Team.

4.2 TSF Cell #1 Environmental Performance

The Tailings Storage Facility (TSF) is 2 km east of the open pit and 5 km southeast of the concentrator plant. The TSF was designed to contain a total of 720 M tons of tailings within two adjacent approximately 2 x 2 km size cells. The Cell # 1 structure is at its final Stage 10 design with approximately 70-meter high perimeter dams built of waste rock. Cell # 1 was in operation from 2013 – 2023, with current transition to the use of TSF Cell # 2. TSF Cell # 1 is now undergoing progressive reclamation trials for closure. Current freeboard at Cell#1 is approximately 6.35 meters, enough for six month short-term use in the event Cell # 2 is not available. The Cell # 2 pond reclaim system is now in use, and a passive spillway structure is being installed from the Cell # 1 reclaim pond to the active system.

During project construction in 2013 a “cut-off dam” was constructed just to the east of the TSF Cell#1 in the Khaliv River alluvial channel. This dam (the “East Toe Collection Dyke”) was installed specifically for the purpose of collecting any seepage from the TSF so that it can be contained on the site. The IESC has extensively discussed seepage at the TSF in prior Audit Reports. Seepage water from three locations, including waters collected from depressurizing bores, has historically been collected by OT in a Seepage Collection Pond and either used for dust suppression on surface roads or recycled for use in the concentrator.

In 2018 an Independent Tailings Review Panel (ITRP) recommended that the seepage collection system be moved from a low point in the alluvial stream bed, behind the cutoff embankment, to a replacement geomembrane-lined sump adjacent to the already constructed seepage pump system.

In November 2021 OT formally identified an Environmental Incident at the TSF related to seepage collection. In summary the relocated seepage collection system had not sufficiently contained collected waters and a preferential pathway has likely developed that has allowed this water to migrate past the East Toe Collection Dyke and enter the Dugat/Khaliv ephemeral drainage. This was detected through the monitoring of shallow alluvial bore OTMB 16–79, which identified high TDS concentrations. The preferential pathway by which these collected water are bypassing the East Toe Collection Dyke (cut-off embankment), was identified by OT in Figure 4-12. In the figure the collection sump is shown, as well as hypothesized preferential pathways in red by which seepage entered the flood diversion trench. In the Q2 2022 Audit Report the IESC described that "…*It is likely that this high TDS water has migrated off the site (i.e., the Mine License Area) as the boundary is very close to the OTMB 16 – 79 monitoring bore location*".

As discussed later in this section, it is now hypothesized that seepage could be entering into the Dugat/Khaliv system through or under the cut-off embankment itself. A potential migration pathway is at the interface of the Cut-off Dam and underlying weathered bedrock.

Figure 4-12 Cut-off Dam to the East of the TSF, Location of Historic TSF Seepage Pond/Sump

Higher TDS levels to the east of the TSF were first recognized by OT in 2019 monitoring of shallow alluvial monitoring bore OTMB 16 – 79; however levels decreased the following year following flood events. In 2021 the repetition of high TDS values in monitoring triggered the formal identification of an Environmental Incident. The follow-on Incident Investigation Report was prepared by OT in November 2021 which summarized root causes of the Environmental Incident as follows:

- High TDS values in a critical monitoring point, OTMB 16 – 79, were not identified as material and no “owner” was assigned;
- There were no “trigger” action levels for high TDS values; and
- There was no formal plan for communicating environmental incidents of this nature with community members.

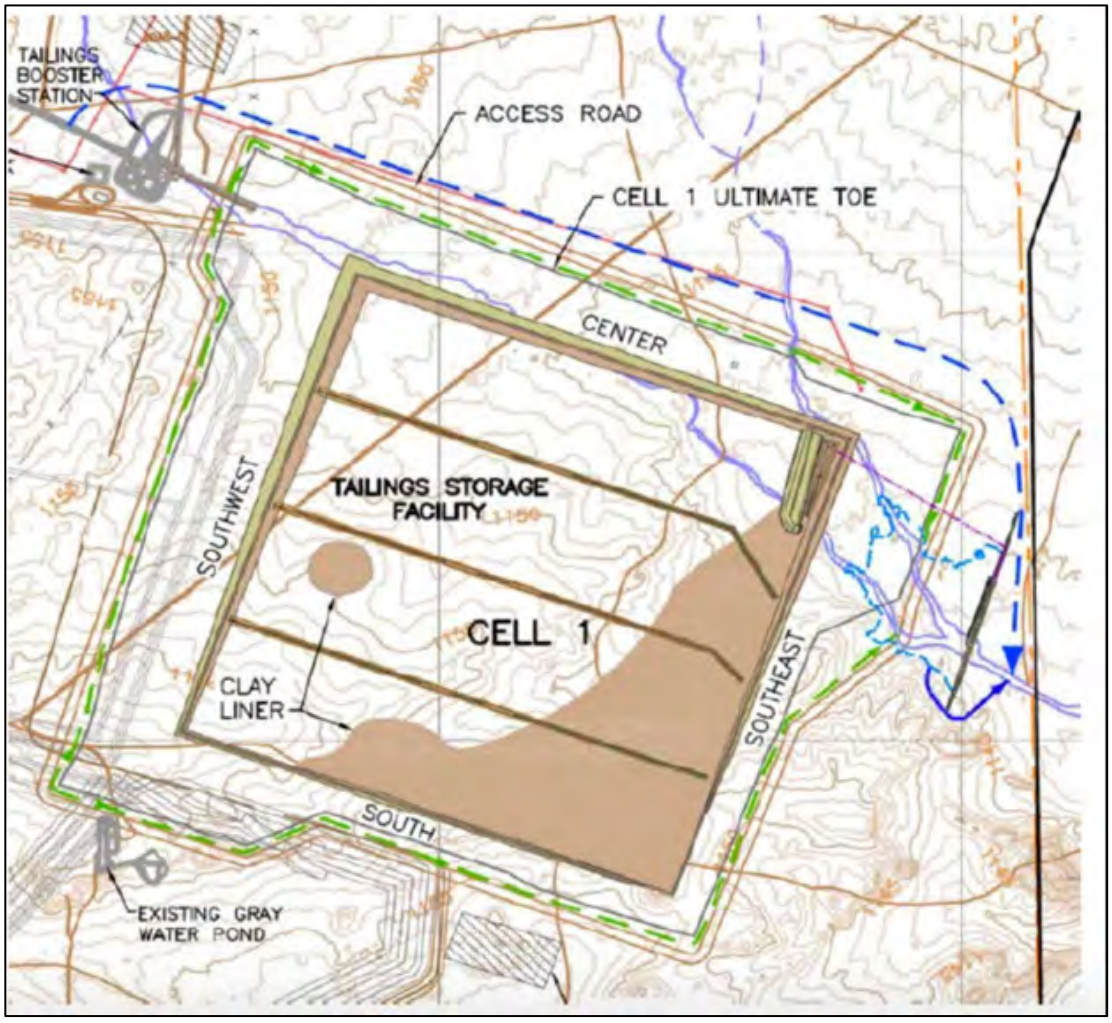
OT subsequently identified a series of corrective actions to avoid another repeat of the Environmental Incident, including the following:

- Preparation of a presentation and events to communicate findings with stakeholders;
- Preparation of a formal Trigger Action Response Plan (TARP); and
- Development of a publicly available monitoring data platform to allow for stakeholder tracking.

4.2.1 TSF Cell # 1 Design and Cell # 2 Transition

TSF Cell # 1 foundation to the north and west overlies thick natural clays; however an engineered 1 m thick compacted clay liner was constructed in the southeast corner of Cell #1 at a location with little to no naturally-occurring clays. Figure 4–13 shows the extent of the compacted clay liner that was engineered prior to usage of Cell#1.

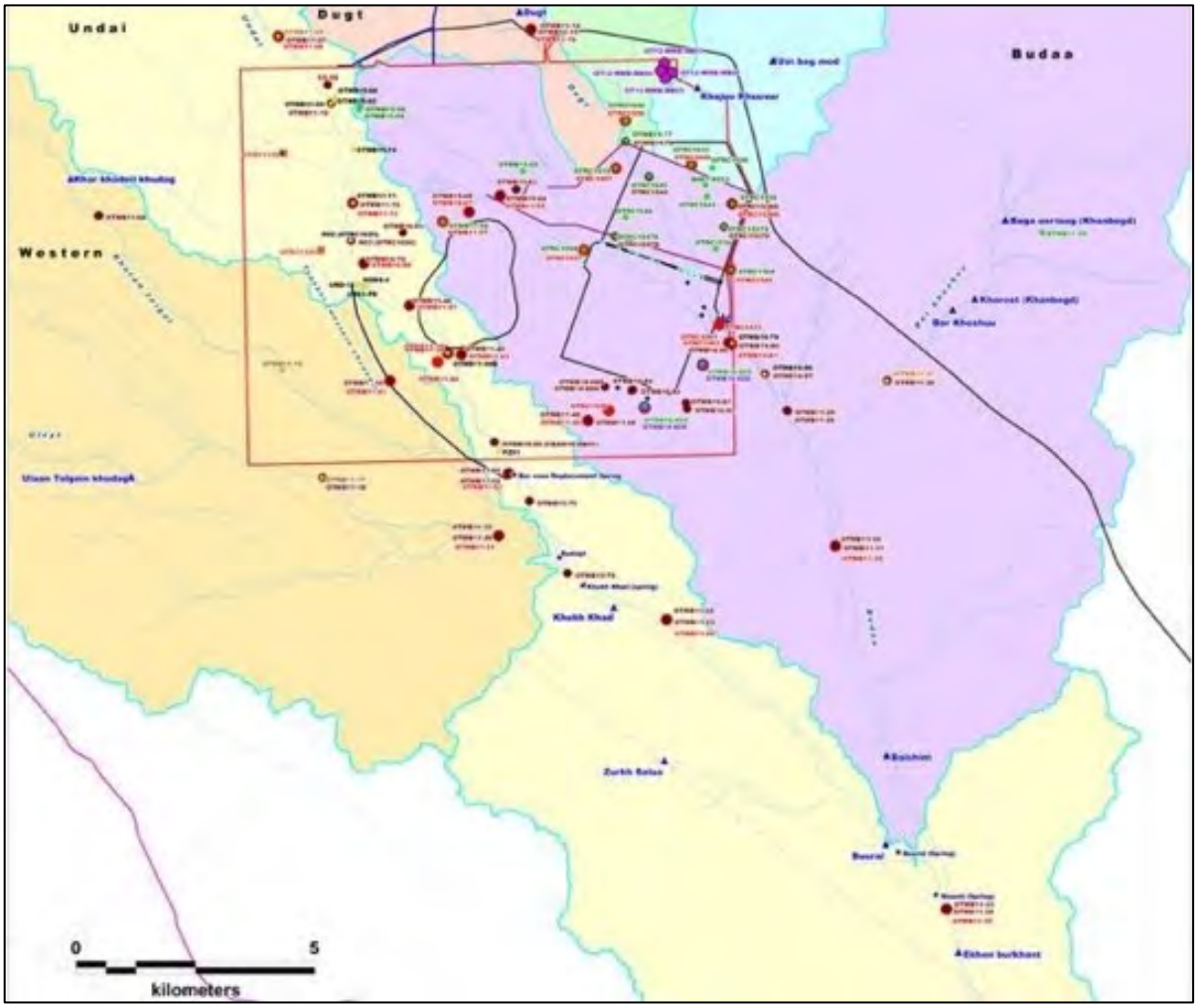
Figure 4-13 Area of Engineered Compacted Clay Liner in Southeast Corner of Cell #1



The northeast corner of Cell #1 is a topographic low where the ephemeral Khaliv River and its main tributary, the Dugat River, historically crossed the TSF footprint. Episodic rain events causing surface flow irregularly reported to an engineered trench that conveyed non-contact runoff water around the TSF. Flows collected in this trench were then discharged back to the Khaliv River alluvial system just down gradient of the TSF.

This historic Surface Water Diversion channel is shown as a blue line in Figure 4-13, including the discharge location just within the Mine License Area. The Khaliv drainage eventually joins the Bor Khoshuu riverbed for a short distance before joining the Budaa River and ultimately the Undai River. A map of the watersheds in the region of the OT Mine License Area is shown as Figure 4-14.

Figure 4-14 Watersheds at the OT Site (Budaa in Purple, Undai in Yellow)



An aerial photograph of the current TSF Cell#2 is shown as Figure 4-15. The existing Dugat diversion is shown around the perimeter of the cell, with the current reclaim pond to the southeast. A new diversion will soon be constructed from north of the MLA around the future underground subsidence zone and then to the north and east of combined TSFC Cells #1 and #2. The intention is to have the new Surface Water Diversion discharge to the Dugat River some distance downgradient of the MLA, clearly separating diverted Dugat River flows from any potential seepage waters emanating from the TSF. This revised diversion design will be included in a Supplemental ESIA, to be reviewed and approved by Lenders, as part of the proposed Mine Zone Expansion previously discussed.

Figure 4-15 Aerial Photograph of TSF Cell#2 with Reclaim Pond to the Southeast

During the prior site-based audit a site tour was made by the IESC to discuss management of seepage into the alluvial sediments of the Dugat/Khaliv alluvial channel. A view from the top of TSF Cell#1, looking east, is shown in Figure 4–16. In the Q3 2023 photograph the cut-off dam is shown with the Surface Water Diversion shown just a short distance to the east. The Surface Water Diversion discharges into the alluvial channel of the Khaliv alluvial sediments in the vicinity of OTMB 16–79. From the picture one can also see

the migrating pathway of the Khaliv alluvial system, including two prominent elm trees. The Khaliv system joins the Budaa alluvial system beyond this point.

Figure 4-16 Aerial View of Cut-off Dam East of TSF Cell#1

Another Q3 2023 photograph is shown in Figure 4–17, this time looking westward from the Dugat/Khaliv alluvial channel in the vicinity of OTMB 16 – 79. In the photograph the East Toe Collection Dyke (i.e., the "cut-off dam") is visible to the west, with the approximately 70-m TSF Cell # 1 eastern wall in the background.

Figure 4-17 View West of TSF Cell # 1 from the Dugat/Khaliv channel just within Mine License Area

4.2.2 TSF Monitoring Network

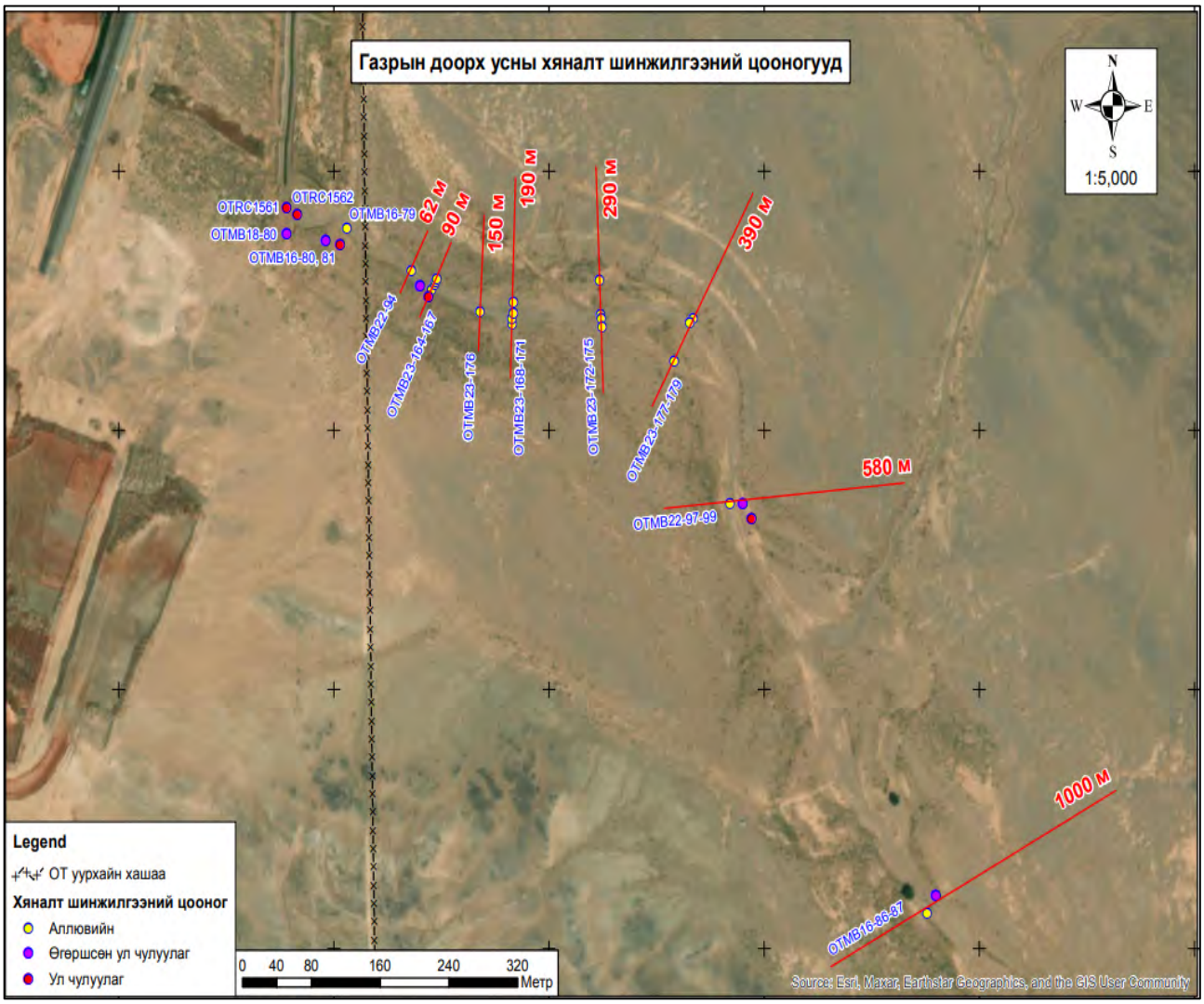
There is a total of 71 water monitoring points associated with the TSF. An additional 16 monitoring points were installed in Q3 2023 in alluvial sediments of the Dugat ephemeral channel, and other monitoring points installed in weathered bedrock, cretaceous clays, and other units downgradient of the TSF. These monitoring points are further detailed in Table 4-1. The nearest environmental receptor downgradient of the TSF, and within the Budaa River channel, is the Baishint herder well, located approximately 7 km downgradient of the MLA. Beyond this the Budaa River joins the Undai River system in the vicinity of the

Buural spring. Figure 4-18 shows the location of key additional monitoring points installed in Q4 2023 just downgradient of the MLA, and transecting the Dugat alluvial channel.

Table 4-1 Water Monitoring Network at TSF as of Q2 2024

Monitoring Point	Number of Monitoring Points	Water Levels	Flow Rates	Field Water Quality	Laboratory Water Quality
Monitoring bores in weathered bedrock	22	Fortnightly – monthly	N/A	Fortnightly – monthly	Monthly
Monitoring bores in alluvium	20	Weekly – monthly	N/A	Fortnightly – monthly	Monthly
Monitoring bores in bedrock	11	Fortnightly – quarterly	N/A	Fortnightly – monthly	Monthly - Quarterly
Monitoring bores in Cretaceous	10	Monthly - quarterly	N/A	Monthly - quarterly	Monthly - Quarterly
TSF Seepages	3	N/A	Monthly	Monthly	Monthly
Tailings Reclaim	1	Monthly	N/A	Quarterly	Quarterly
Herder's wells	3	Fortnightly – monthly	N/A	Fortnightly – monthly	Monthly
French Drain Pump	1	N/A	N/A	N/A	N/A
Total	71				

Figure 4-18 Monitoring Points in Vicinity of TSF Including New Alluvial Locations



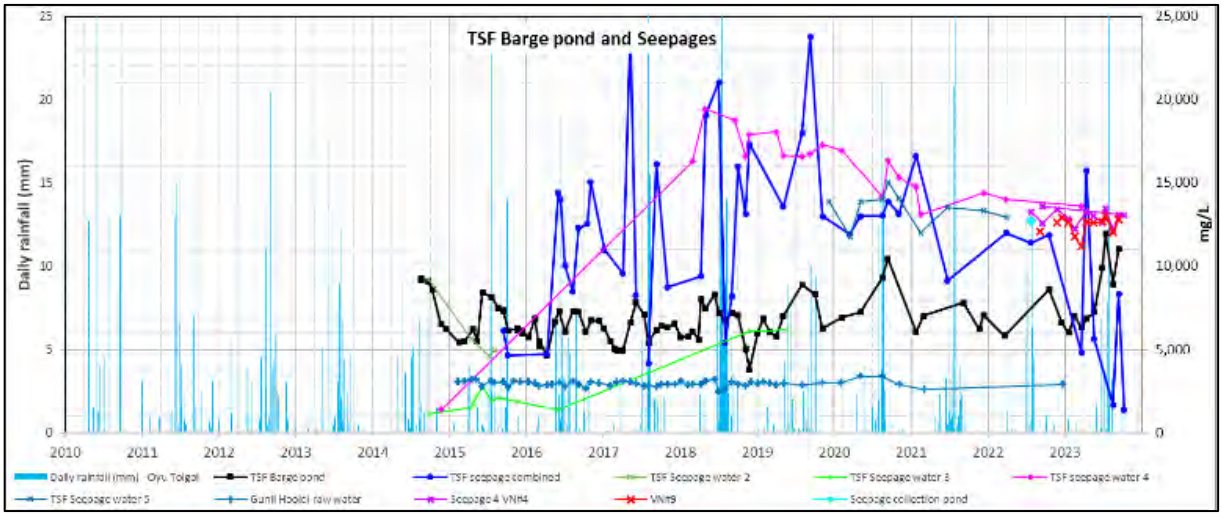
4.2.3 TSF Barge Pond and Seepage Water Quality

TSF barge pond water quality parameters exceed Australian New Zealand Environment and Conservation Council (ANZECC) Guidelines for Livestock Water for total dissolved solids, sulfate, fluoride, molybdenum, boron and selenium. As a result OT constructed a fence around the seepage collection area as domestic livestock and native fauna had in the past accessed this available water source. The fencing, which is 2 m high, covers 100,000 m^2 of area.

Figure 4-19 below shows barge pond water quality at TSF Cell #1 for total dissolved solid (TDS), as reflected in monitoring results from 2014 – current. Over that time period barge pond water quality varied from a low of approximately 3,800 mg/L to a high of 10,500 mg/L, with values typically falling in the 6,000 – 8,000 mg/L range (shown in black). However measured TDS at specific seepage collection points

surrounding the TSF often show much higher TDS values of up to 25,000 mg/L, and often in the 15,000 mg/L range.

Figure 4-19 Barge Pond TDS Concentrations (Black) and Combined TDS in Seepages (Blue)



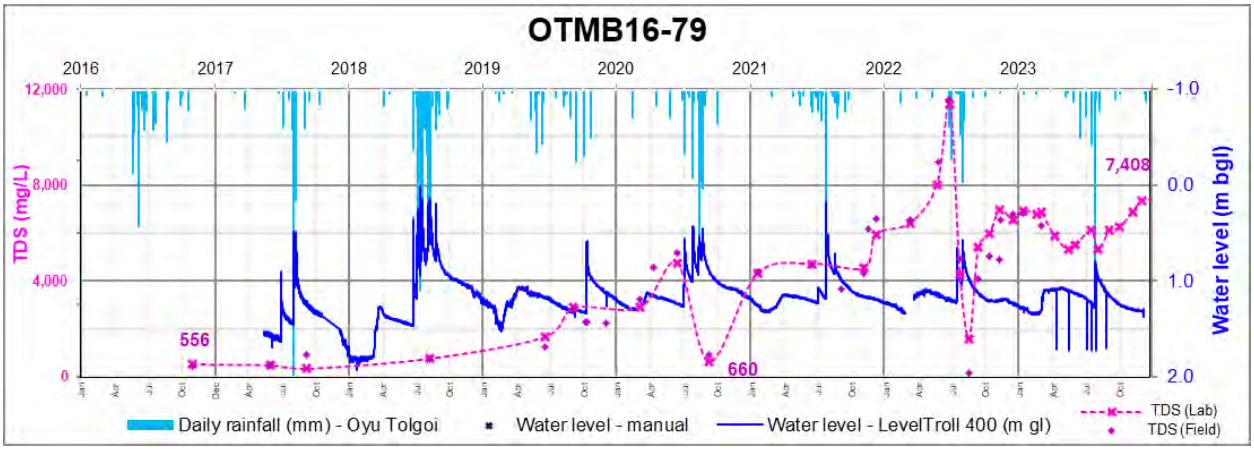
The investigation of seepage in monitoring points around the TSF to date has recorded TDS levels up to 40,000 mg/L. Such elevated levels cannot be solely attributed to TSF seepage. TDS values significantly above 8,000 mg/L could be attributed to completion of monitoring boreholes in locations that contain units of Cretaceous age. It is hypothesized that Cretaceous-era clays that are naturally present in the area, and also used in construction of the TSF, leach dissolved solids when saturated. Therefore monitoring points completed in these units should be noted, or even disregarded, when assessing potential impacts of seepage. In the prior Audit Report the IESC recommended investigation of seepages with much higher TDS than TSF barge pond water quality.

With respect to other contaminants - concentration of sulfates (SO_4) in the TSF Barge Pond are up to 4,000 mg/L, but are typically in the 2,000 mg/L range. Strontium (Sr) ranges up to 15 mg/L in barge pond water quality, typically averaging around 9 mg/L. Both SO_4 and Sr levels have been recorded in downgradient monitoring bores above background concentrations and action response levels, as discussed in the following subsection.

4.2.4 Water Quality Downgradient of TSF Cell # 1

TDS concentrations have increased since 2018 at monitoring bore OTMB 16–79, when the seepage collection pond/sump was first moved to the north. The location of this monitoring point is shown on Figure 4-14. Locations of monitoring points installed in Q3 2023 and further downgradient of TSF Cell # 1 are also shown on Figure 4-19. Original baseline values at the location were approximately 550 mg/L in 2018, rising to 11,424 mg/L by Q3 2022. Values quickly declined following a precipitation also in Q3 2022. TDS values have since fluctuated and are at approximately 7,400 mg/L as of Q4 2023 (Figure 4-20). Results of monitoring at this location reflect not only likely seepage from the TSF, but also episodic dilution from periodic flood events.

Figure 4-20 TDS Levels from 2017 – 2023 at OTMB 16-79



The most recent water quality data extending through Q4 2023 for shallow alluvial monitoring points to the east of TSF Cell # 1 is summarized in Table 4–2. The table shows general water quality data, with TDS, SO_4 and Sr values at OTMB 16-79 above Level 3 response levels in the developed Trigger Action Response Plan (TARP). Elevated values are also present just 50 m to the west of the Mine License Area at OTMB 22 – 94. Additionally installed monitoring points in alluvium 100 m to the east of the MLA reflect elevated TDS, SO_4 and Sr (OTMB 23 – 164, 166, and 167). There are also slightly elevated TDS levels at new monitoring points 160 m and 300 m to the east (OTMB 23-176 and OTMB 23-174, respectively). There are no discernable impacts to groundwater quality at monitoring points 400 m downgradient (OTMB 23-178), 500 m downgradient (GHMB 22-97), 1 km downgradient (OTMB 16-86), or at the Baishint herder well which is 7 km gradient from the MLA.

Table 4-2 Water Quality Data Within and Outside of MLA through Q4 2023

TARP trigger ranges	Normal State	Type		pH	TDS (mg/L	SO4 (mg/L)	Sr (mg/L)
		Normal		>6.8	<800	<400	<1.6
		Level 1		6.6-6.8	800-900	400-450	1.6-1.8
	Reportable incident	Level 2		6.5-6.6	900-950	450-475	1.8-1.9
	Reportable Incident	Level 3		<6.5	>950	>475	>1.9
Location	Sample point	Sample date		Downstream groundwater monitoring points			
within the MLA	OTMB16-79	2022-08-23	Lab	7.84	1,600	504	0.83
		2022-09-17	Lab	8.57	5,460	1,436	5.24
		2022-10-18	Lab	8.36	6,012	1,081	5.65
		2022-11-15	Lab	8.04	7,028	1,878	5.18
		2022-12-20	Lab	8.31	6,600	1,773	4.93
		2023-01-17	Lab	8.60	6,986	1,608	4.33
		2023-02-25	Lab	7.54	6,821	1,626	5.18
		2023-03-08	Lab	7.46	6,896	1,667	5.32
		2023-04-14	Lab	7.66	5,901	1,139	2.97
		2023-05-20	Lab	7.47	5,350	1,089	2.71
		2023-06-10	Lab	7.52	5,530	849	3.20
		2023-07-21	Lab	7.59	6,140	1,043	3.95
		2023-08-11	Lab	7.69	5,360	1,052	3.38
		2023-09-10	Lab	8.13	6,140	1,255	4.06
		2023-10-08	Lab	7.65	6,296	1,255	3.98
		2023-11-12	Lab	8.12	6,910	1,318	4.95
		2023-12-08	Lab	7.60	7,408	1,474	5.35
		2024-01-05	Lab	7.53	7,410	1,326	5.82
~60m from MLA	MP-1	2022-07-03	Lab	7.17	4,496	1,035	6.80
		2022-07-25	Lab	7.28	3,950	1,030	3.47
	OTMB22-94	2023-10-10	Lab	7.89	3,972	1,041	2.90
		2023-10-10	Lab	7.98	4,522	1,438	3.02
~100m from MLA	OTMB23-164	2023-10-29	Lab	8.04	1,340	350.4	1.24
	OTMB23-166	2023-10-29	Lab	7.93	2,212	532.8	1.87
	OTMB23-167	2023-10-29	Lab	7.61	2,190	656.7	1.65
160m from MLA	OTMB23-176	2023-10-29	Lab	8.46	1,104	324.3	1.01
300m from MLA	OTMB23-174	2023-10-28	Lab	10.80	1,206	269.2	1.24
400m from MLA	OTMB23-178	2023-10-28	Lab	8.69	692	187.2	0.51

4.2.5 2023 Detailed Water Review

In prior IESC Audit Reports it was recommended that a Detailed Water Review, as described in the Water Resources Management Plan Section 8.2, be undertaken as it was unclear if implemented mitigations were adequate to protect the down gradient Dugat/Khaliv alluvial drainage from further infiltration of seepage water. Water Resources Management Plan commitment WRM – 02 of the OT ESIA references a commitment to preserving groundwater quality in the mine area of influence. This commitment in turn references Section 6.3 of the Water Monitoring Plan, which sets out analysis protocol and trigger levels for remedial action.

The Detailed Water Review took place in Q3 2023 to coincide with the IESC/Lender visit to the OT site. At the completion of the three-day discussion, points of agreement were established between meeting participants, including those from OT, Rio Tinto, the Lenders and the IESC.

The following were conclusions established during the Detailed Water Review related to the monitoring network:

- Total Dissolved Solids (TDS) concentrations in TSF barge pond water typically range from approximately 6,000 to 8,000 mg/L;
- Investigations to date have used elevated TDS, derived from electrical conductivity (EC) readings, as a general indicator, or "signature", of seepage. This general indicator does not allow discernment between seepage water and other naturally occurring high-salinity waters present in the immediate area from the leaching of Cretaceous-era clays;
- The investigation to date of seepage downgradient of TSF Cell #1 has recorded TDS levels up to 21,557 mg/L. These values were detected in standpipes installed in clayey sediment downgradient of the TSF and adjacent to the Dugat alluvial channel. Such elevated levels cannot possibly be solely attributed to uncontrolled seepage from the TSF;
- TDS values significantly above 8,000 mg/L are likely to be attributed to the geochemistry of the units of Cretaceous age. Therefore monitoring points completed in these units should be noted, or even disregarded, when assessing potential escape of seepage into the environment;
- The shallow geology in the area downgradient of the TSF should be mapped in detail to understand the influence of geology on the geochemistry of the system;
- The sensitive environmental receptor from TSF seepage is groundwater contained within shallow alluvial sediments including that of the Dugat/Khaliv ephemeral river channel. These are the units accessed by herder wells and wildlife. Therefore any investigation of seepage from the TSF should focus on this hydrogeological unit;
- TSF seepage has migrated into the alluvial sediments of the Dugat/Khaliv ephemeral river channel, as evidenced by elevated TDS concentrations, and beyond all barriers installed to contain such migration. This seepage has been detected in the shallow alluvium directly beyond the MLA;
- The full extent of the impact of this elevated TDS downgradient of the site is not known. There is no indication of seepage impacting the shallow groundwater at OTMB 16-86 (approximately 1km downgradient) or the Baishint herder well, approximately 7km downgradient from the site

The Detailed Water review also highlighted the need for more alluvial groundwater monitoring bores downgradient of the MLA as there were no such monitoring locations between OTMB22-94 (~60 m downgradient of the MLA) and OTMB22-97 (~500 m downgradient). This was undertaken in Q4 of 2023 with the additional monitoring points installed, as described previously in this section.

The following were conclusions established during the Detailed Water Review related to evaluation of the TSF monitoring data available to date:

- OT's working hypothesis for seepage migration through the East Toe Collection Dyke (the Dyke) is through a weakness related to the pipeline installed connecting the old seepage collection pond (the membrane pond) to the adjacent pump house. However a more diffuse pathway from TSF Cell#1 through the Dyke cannot be ruled out
- It is now recognized that some of the upper horizons of the Cretaceous clays on site contain fissures which could provide vertical or sub-vertical fluid migration pathways. For this reason the TSF Cell

2 design has been modified to ensure removal of any clays which contains such fissures prior to construction of the installation of the embankment for this cell (see discussion below on changes to TSF Cell#2 design)

- As mentioned above the sensitive receptor in terms of seepage is any potential groundwater contained in shallow alluvial sediments. This has been recognized since the ESIA and work on the Undai River Diversion. It is important to preserve the quantity and quality of this resource;
- The Dugat/Khaliv Surface Water Diversion has been constructed to transfer storm water from upgradient drainages around TSF Cells #1 and #2, back into the Dugat/Khaliv ephemeral channel immediately downgradient of the TSF. It is noted that Dugat/Khaliv Surface Water Diversion is currently being redesigned to a location further upgradient of the TSF to accommodate subsidence related to underground mine development
- There was a substantial precipitation event on 28 July 2023 which transferred large amounts of water through the Surface Water Diversion system. A contractor involved in construction work on Cell# 2 had infilled a portion of the Dugat/Khaliv Surface Water Diversion to allow vehicle access over the trench. This obstruction caused large volumes of water (estimated at 50,000 m^3) to be directed to the seepage collection area between TSF Cell#1 and the Dyke. This issue was recognized as a problem in real time, and a team on the ground immediately mobilized equipment and removed the obstruction. Following this the remainder of this stormwater was allowed to flow through the Dugat/Khaliv Surface Water Diversion to the Dugat/Khaliv channel downgradient of the TSF
- The 50,000 m^3 of storm water mixed with the seepage that was present at the seepage collection system at the time. The accumulated water was then pumped from the seepage collection area into Cell#1. This pumping has progressed and lowered the water level to approximately 1133 masl Q3 2023); and
- There is a lack of coordination between the OT Tailings & Hydrogeology/Environment Teams and contractors working for the OT Engineering and Projects Team. This was highlighted in the above incident in which a contractor obstructed the Dugat/Khaliv Surface Water Diversion to accomplish their work, creating an obstruction to environmental control infrastructure.

4.2.6 Remedial Action Plan Implementation

During the Q3 2023 Detailed Water Review the path forward was discussed, dividing these efforts into both short-term and long-term objectives. OT has retained the expertise of a third-party consultant (Piteau Associates) to help develop these efforts. Implemented short-term mitigations, planned short-term mitigations, and planned long-term mitigations are all detailed in the prior Q3 2023 Audit Report. OT also developed with Lenders a Remedial Action Plan (RAP) that specifies objectives and corresponding tasks to meet these objectives. Periodic updates on implementation of the RAP are provided to the Lenders.

Table 4-3 provides a summary of implemented RAP items, as of the end of Q1 2024. Table 4-4 then provides a summary RAP items still in progress as of the end of Q1 2024.

Table 4-3 Implemented Remedial Action Items through Q4 2023

No	Issue	Action	Start Date	Progress Update Q1 2024
1	Define the depth and extent of the alluvial sediments downgradient of the Dike and north TSF Cell#2	Investigation - Undertake surface geophysical surface between TSF Cell#1 and the Baishint herder well	Q4 2023	Geophysical survey completed in Q4 2023. Results have been included in the geological model update to help identify weathered bedrock contacts. The survey covered over 26 km longitudinal and transverse geophysical lines. Results presented in the document: *Shallow Frequency Domain Electromagnetic and Electical Resistivity Imagin Surveys at TSF Areas of Oyu Tolgoi Copper Mine,* 2023.
2	Conduct a site investigation within the area of the Dike to define short term remediation system	Investigation – Test pits, monitoring bore construction, clay salinity measurement and water quality sampling within area of the Dike	Q4 2023	Site investigation completed in Q4 2023. A total of 49 test pits excavated with field salinity tests. Data returned from these test pits, along with other monitoring data, were used to guide development of a French drain seepage intercept system. Results presented in the document: *Oyu Tolgoi Trench Design,* 2023.
3	Confirm the presence, or absence, of any groundwater contained in the Dugat/Khaliv alluvial system to identify any pockets of discontinuous flow and to define the extent of the seepage migration downgradient from the MLA	Investigation – Install transects of shallow monitoring bores across the Dugat/Khaliv alluvium at locations 100m, 200, 300m and 400m downgradient of the MLA	Q4 2023	Additional monitoring bores installed in Q4 2023, both within and outside MLA. Four transects were completed downgradient of the TSF in the Dugat/Khaliv channel downgradient of the TSF. The installed monitoring boreholes are now included in the OT water monitoring program.
4	Implement short term solution to mitigate risk of further migration of elevated TDS groundwater	Remedial – Construction of a passive seepage collection trench system (i.e., a "French Drain") downgradient of the Dike, but upgradient of the Dugt/Khaliv Surface Water Diversion Channel	Q4 2023	French drain installed in Q4 2023, consisting of a total of 805 m of excavation and emplacement of perforated drainage pipe. This drainage pipe is located at the top of the weathered bedrock interface and graded to the south to a collection sump. The drainage network was left uncovered for winter 2023 - 2024 to assess performance, and will be backfilled in Q2 2024. The drain has been frozen for most of the time since completion.

No	Issue	Action	Start Date	Progress Update Q1 2024
5	French Drain system effectiveness	Verification – Install an array of alluvial monitoring points downgradient of the Dike, and upgradient of the Dugat/Khaliv Surface Water Diversion	Q4 2023	Completed in Q4 2023. Flow and field monitoring data collected on a daily basis. Additional alluvial monitoring points installed in the trench. Three additional monitoring bores are planned for installation just downgradient of the Dyke.
6	Community requested to be involved in Government of Mongolia commissioning process for Cell#2	Consultation- Involve community representation as an observer for state commissioning process for Cell#2	Q3 2023	OT communicated the commissioning approach at the Tripartite Council (TPC) meeting in Q4 2023. Following this an environmental officer from Khanbogd soum was a participant in the formal commissioning of TSF Cell#2 in later Q4 2023.

Table 4-4 Remedial Action Plan In Progress Items through Q4 2023

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
Tailings Design and Operation							
1	Cretaceous clays prevalent downgradient of the Dike may be leaching dissolved solids leading to observed elevated TDS values of over 35,000 mg/L	Investigation – Identify and define a reliable geochemical and conservative "signature" for seepage	Define a reliable geochemical and conservative "signature" for seepage besides TDS.	Q3 2023	Q2 2024	Tailings and Hydrogeology and Environment	**In progress.** 14 cretaceous clay samples have been collected from trenches east of TSF and delivered to the University of Queensland for test work to understand salinity release mechanisms under different hydrogeological conditions. The Environment team has commenced long-term water chemical data review to identify a suitable "signature". This will be updated in the next Audit Report.

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
2	Removal of the potential seepage pathway along the pipeline between the membrane sump and the pumphouse	Remedial – Pumphouse relocation work program - remove the approximate 0.1m diameter pipe connecting the membrane sump to the pumphouse and backfill alignment with compacted clay after cleaning high permeability material under supervision of experienced construction supervisor and other technical personnel.	Removal of the pipeline connecting the membrane sump to the pumphouse	Q1 2024	Q1 2024	Tailings and Hydrogeology	**Delayed but in progress.** Removal of the pipeline between the old seepage membrane pond and the pump house is planned over two stages. The first stage has already been completed with removal of 8 m of the pipeline; the remaining 8 meters will be removed after the pump station is moved. The old membrane pond no longer is used for seepage collection, removing this as a migration pathway.

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
3	Removal of the membrane sump located immediately upstream of the Dike and adjacent to the pumphouse as potential source of seepage	Remedial – Pumphouse relocation work program - infill the membrane sump with compacted clayey material to remove this feature as a topographic low in the seepage collection area. Before backfilling the area, the soil geology will be inspected and low permeability materials will be removed for compacted clay backfilling.	Completion of infill of the membrane sump with compacted clayey material	Q2 2024	Q2 2024	Tailings and Hydrogeology	**In progress.** Approximately 30k tons of clay material will be used to fill the old membrane pond during the Q2 2024 summer construction season.

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
4	Lack of holistic understanding of the hydrogeological regime and confidence in seepage mechanism/pathway	Investigation – Installation of alluvial/bedrock monitoring bore pairs between the Dike and the Dugat/Khaliv Surface Water Diversion to evaluate groundwater gradients and sulphate levels or other possible signatures of seepage upgradient and downgradient of the Dike	Identification of the seepage migration pathway	Q4 2023	Q1 2024	Tailings and Hydrogeology and Environment	**In progress.** An investigation has been conducted by a third party consultants (Piteau). This included a flow path assessment of seepage pathways. Summary outputs concluded: • Upgrades are proposed for the TSF Cell#1 seepage collection system; • Operate the French drain as a backup containment system; • Evaluate realignment options for the Dugat diversion; • Further assess management items for groundwater flow north of TSF Cell#1

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
5	Assess alternative investigation methodologies to assess potential seepage pathway(s) under or through the Dike	Investigation – Evaluate opportunity to conduct tracer tests	As with the above the identification of the seepage migration pathway is the objective and could require the usage of tracer and/or isotope test work.	Q2 2024	Q3 2024	Environment	**In progress.** The OT Environment team has developed and issued a Scope of Work for an: "*Isotopes study of the TSF areas for tracing the seepage sources".* The Scope of Work includes lab analyses for stable isotopes with a goal of an improved understanding of the recharge/discharge dynamics at the OT site. It is hypothesized that shallow groundwater, seepage and other drainage waters will exhibit $\delta^{2}H$ and $\delta^{18}O$ signatures similar to modern day recharge (e.g., rainfall). In contrast deeper groundwaters are expected to display a distinct, lighter δ2H and $\delta^{18}O$ composition, indicative of older groundwater. OT is also investigating the use of other isotopes including nitrogen ($\delta^{15}N$), strontium ($^{86}Sr/^{87}Sr$), boron (B) and sulfur ($\delta^{34}S$), for seepage tracing. Outcome reporting is expected by Q3, 2024.

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
6	Use the investigation activities to inform long-term management strategies which may include re-location of the pump station, extension of the Dike northwards, additional trenching and sumps within the Seepage Collection Area and upgrading of the existing Dike embankment in areas where effectiveness may be comprised	Remedial – Synthesize all investigation data to inform long-term mitigation strategy drilling data for geology update Design and implementation of Dike extension and remediation Design and implementation of Pumphouse relocation	Redesign of holistic seepage containment system for combined TSF Cells #1 and #2. This could include extension of the Dike northwards and other improvements to ensure the cut-off system is functional and effective.	Q4 2023	Q3 2024	Tailings and Hydrogeology	**In progress.** The design of the pumphouse has been finalized and relocation construction has started (progression ~ 7.5% as of Q1 2024). Based on results of field investigations a conceptual extension of the cut-off dike to the north has been developed. This is an extensive undertaking as depth to bedrock can extend up to 12.5 meters. Further the cut-off may extend up to 1.4 km in length, will require relocation of existing infrastructure, require excavation stability management, and other considerations. A multi-phase approach is planned and being coordinated with Knight Piesold.
7	Close proximity of the Dugat/Khaliv Surface Water Diversion to the eastern boundary of the TSF	Reroute Dugat/Khaliv Surface Water Diversion to distance this environmental receptor from the TSF	Reconstruction of the Dugat/Khaliv Surface Water Diversion to prevent impact from the TSF	Q1 2025	Q3 2025	Engineering and Projects	**In progress.** Planned as part of the 2025 Mine Zone Expansion project. Design still in development.

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
8	Investigate potential area of shallow groundwater apparent in aerial photography and assess if likely to be related to TSF seepage	Investigation – Installation of an alluvial and weathered bedrock monitoring bore pair	Determination as to if shallow groundwater observed to the east in aerial photography is related to TSF seepage	Q2 2024	Q3 2024	Tailings and Hydrogeology and Environment	**In progress.** Shallow and deep monitoring bore pair installed with weekly groundwater level monitoring. Further monitoring and analysis are planned.
9	Fully understand the surface water and groundwater resources and the potential impacts of OT operations (include TSF Cell#1 and Cell#2) within the Khaliv/ Dugat catchment in order to develop appropriate mitigation options	Investigation-Dugat-Khaliv catchment Water Resources Impact Assessment	Preparation of Piteau Associates Report: *Dugat-Khaliv catchment Water Resources Impact Assessment*	Q1 2024	Q4 2024	Tailings and Hydrogeology and Environment	**In progress.** Scope of Work and a third party consultant retained to execute the study. A status update of report development was provided during the Audit: *Budaa Catchment Water Resources Impacts Assessment Update*, 2024.
10	Improve understanding of Cell#1 seepage water quality and quantity, root cause, migration extent and toxicological affect.	Investigation-Study on TSF seepage water quality, migration extends and toxicological study.	Understanding the toxicology of TSF seepage to the environment	Q1 2024	Q4 2024	Environment	**In progress.** A Scope of Work for a toxicology study has been developed and the procurement process has commenced. The study purpose is to compare barge pond water quality and downstream water quality and hydrogeology. Determination of seepage water source and fractionation is also scoped (e.g., process water content relative to groundwater content). The study will also evaluate toxicological potential impacts of observed seepage water in monitoring bores.

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
11	Need to replace the shallow groundwater pumped from the diversion and/or French Drain as to ensure no net reduction in water quality or quantity	Remedial – Develop and implement strategy of recharging low TDS water to the alluvial system to ensure no net impact. Likely strategy to involve treatment of elevated salinity water Reverse Osmosis (RO) and recharge of treated water back to alluvial system	Remediate the high TDS seepage water	Q3 2024	Q1 2025	Tailings and Hydrogeology and Environment	**Planned.** This assessment and study scope will be developed by the OT Environment team based on the results of planned mitigations (e.g., pumphouse relocation and French drain installation).

No	Issue	Action	Objective	Planned start date	Planned end date	Responsible OT Department	Q4 2023 Update
12	There is understandable concern within the herders' community, local officials, and TPC regarding the extent and significance of the seepage and OT LLC remain committed to providing regular updates on monitoring data and the progress of remediation work.	Consultation- Develop and implement a stakeholder engagement plan for communicating environmental incidents stakeholder engagement plan for communicating environmental incident. Target stakeholders for engagements planned are: • Herders' communities • Aimag governor • Soum governor • TPC • Local NGOs (Goviin gazar shoroo, OT Watch, Munkh Nogoon Galba, Accountability Council etc.,)	Revised and Integrated Communications and Stakeholder Engagement Plan to include the Environmental Incident Records of discussion of the Environmental Incident with stakeholders and the TPC	Nov 2023	Q1 2024	Communities and Social Performance team	**In progress.** To improve TSF engagement with the stakeholders a topic-specific Communication Plan has been developed and is in implementation. The plan includes engagement with a variety of local stakeholders including the KB governor's office, environmental inspectors from local *aimags* and soum, as well as local herders. There have been eight separate outreach events with a total of 370 individuals. TSF-related information is included in the Community Newsletter and distributed to all community members. The engagement has focused on building awareness of the TSF, types of tailing facilities, geological specifications, and construction of cells. The community members were interested in OT's TSF seepage monitoring processes, seepage, its impact on people and animal's health, and reflection of learnings in construction of TSF Cell #2.

4.2.7 Changes to TSF Cell#2 Design

Since the original design of TSF Cell #1 there have been a number of lessons learned through the construction and operation of that facility. Numerous studies have been performed by the TSF Engineers of Record. ATC Williams has most recently been the Engineer of Record, with transition to Knight Piesold beginning in year 2024. Site investigations completed since 2020 have included the following**:**

- Excavation of additional test pits;
- standard penetration tests;
- cone penetration tests;
- seismic cone penetration tests;
- an electrical resistivity survey;
- falling head permeability tests ; and
- clay fissures presence investigation

Recognizing the seepage from TSF Cell#1, OT has made significant design changes to TSF Cell # 2. These include the following:

- Installation of a permeable seepage collection system beneath the TSF Cell #2 walls This allows proactive management of seepage rather than reactive as it becomes apparent (major design change);
- Installation of a deep engineered clay cut off trench beneath the entire perimeter of TSF Cell #2. This trench has a minimum depth of 4 meters, and extends up to 12 meters in some locations to remove fissured clays and sand lenses (major design change);
- Enlargement of culverts and extension of the Dugat/Khaliv Surface Water Diversion to avoid ponding on the western perimeter (i.e., allow more flow to proceed downstream); and
- Operational changes to TSF pond management to decrease potential infiltration rates (i.e., less seepage through tailings)

Additionally OT has investigated locations at TSF Cell#2 at which naturally-occurring clays are less than 1m in thickness, and engineered these locations to have this minimum clay thickness. OT has also placed at least 1 m of clay onto locations of alluvial borrow pits along the historic Dugat/Khaliv channel which will underlie TSF Cell #2. The enlarged Dugat/Khaliv Surface Water Diversion will transport more flow around the TSF complex, which currently also has evaporation ponds on the western flank that do not allow passage of all storm water.

Additional photographs are provided below in constructing the substantial seepage collection system, which will tie in with the TSF Cell#1 seepage collection system. Figure 4 - 21 shows the very deep excavation to ensure no fissured clays are present which could create vertical seepage pathways. Some of these excavations were up to 12 m deep, as shown. Figure 4 - 22 shows the redesign of TSF Cell#2 with the passive seepage collection system shown underneath the toe well, in the pink color to the right on the figure. This cut-off trench and subterranean seepage collection system are shown in Figure 4 – 23, with the cutoff

trench to the left and seepage collection system to the right (east). Lastly the seepage collection trench is show also in 4 - 22.

Figure 4-21 TSF Cell #2 Excavation for Clay Cut-Off Trench (up to 12 m below surface)

Figure 4-22 Redesign of TSF Cell #2 (pink Seepage Collection System to the right under toe)

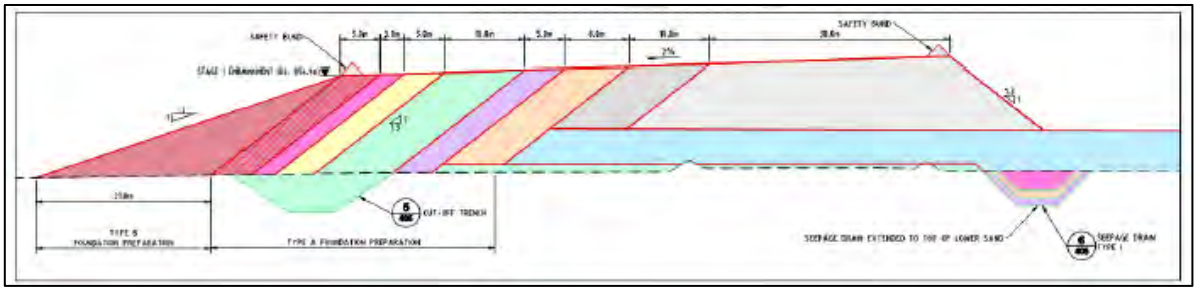


Figure 4-23 Aerial View of TSF Cell #2 Cut-Off Dam (left) and Seepage Collection Trench (right)

4.3 Mineral Waste Management

Mineral waste is managed in conformance with Mineral Waste Management Plan commitments (OT Document OT-10-E13-PLN-0001-E). For calendar year 2023 a total of 48.6 Mt of waste rock had been mined, compared with a full-year 2022 total of 55.1 million tons (Mt) of waste rock. Total mine material was 90.5 Mt, including 41.9 Mt of ore. The OT Mine Geology team logs every blast hole, and for waste zones one in every five blast holes is selected for sampling. These samples are delivered to a site lab for chemical analyses which includes sulphur content and acid neutralizing capacity. All chemical assay results are archived in databases reflecting a 3-dimensional block model of the deposit.

Waste rock is hauled to dedicated waste rock dumps in close proximity to the open pit, or used for Tailings Storage Facility (TSF) construction. Mineral waste is segregated and managed in conformance with MW04, MW05, MW06 and MW13 of the Mineral Waste Management Plan. Non-acid forming and potentially-acid forming (NAF/PAF) segregation criteria are based on total sulfur, total carbon and acid neutralization potential. Environmental monitoring has not identified any adverse effect (i.e., acid mine drainage or metal leaching) from OT waste rock features includes Waste Rock Dumps and the TSF. Waste rock from underground construction is being placed in the integrated waste rock dump just east of the concentrator clay stockpile. This area has been designed to accommodate PAF materials.

Of the 48.6 Mt of waste rock mined in 2023 a total of 11.9 Mt (24.4%) was classified as PAF, with the remaining 36.7 Mt (75.6%) being NAF. Approximately 23.6 Mt of mined waste rock was used for final construction of TSF embankments including all of the PAF. Waste rock was used both for a final raise of TSF Cell #1, and also 5.2 Mt of material was used in construction of the new TSF Cell #2. All emplacement of NAF/PAF material is based on established segregation criteria. Table 4-5 presents details of 2023 accounting for the 11.9 Mt of PAF mined waste rock; as shown this material is delivered to Waste Rock Dumps or used as TSF rock fill, with suitable encapsulation. In year 2024, through the end of April, an additional 18.0 Mt of waste material have been mined, with 10.0 Mt of that PAF.

Table 4-5 Final Destination of 2023 Mined PAF Waste Rock (in tonnes)

Waste Type	Material Produced (Mt)	Delivered to TSFs (Mt)	Delivered to Waste Dumps (Mt)
SOM (PAF)	0.8	-	0.8
Type 1 (NAF)	5.2	1.1	4.2
Type 2 (NAF)	25.6	20.3	5.3
Type 3 (PAF)	6.2	0.1	6.0
Type 4 (PAF)	4.9	1.6	3.3
Clay (NAF)	5.8	0.5	5.3
Total	48.6	23.6	25.0

The Mineral Waste Management Plan (OT Document OT-10-E13-PLN-0001-E) establishes KPI's that address reporting of any mineral waste management incidents, tracking of mineral waste erosion events and any complaints associated with OT management practices (MWM KPI-01 through MWM KPI-03). There have been no registered complaints with respect to mineral waste management. Discussion of seepage present in shallow alluvial monitoring bores to the east of the TSF is discussed in Water Resources Section 4.1.5.

4.3.1 Approval of NoC 2023-002

An important change during this Audit Period is Q1 2024 approval of NoC 2023-002. This NoC addressed a change to the waste rock placement procedure, which historically required a minimum 3 m thickness of NAF waste rock or clay be placed underneath all PAF waste rock dumps or ore stockpiles. This requirement was included in the original 2012 ESIA and intended to prevent any interaction between this material and potential water at the ground interface. The NoC requested that a change to the Mineral Waste Material Segregation Procedure be approved to allow placement of PAF material directly on the ground surface, as long as it is kept away from the Undai River channel. The NoC was originally submitted in Q1 of 2023 but not approved at that time pending additional study. The path forward for approval of this NoC was discussed during the Q3 2023 Audit and included recommendation for a technical study to demonstrate long-term dry conditions at the ground interface.

The NoC was resubmitted in Q4 2023, this time with supporting modeling in a third-party study: *Oyu Tolgoi Waste Rock Dump Basal Layer Modelling* (2023). In the report and corresponding model a number of long-term (90 year) scenarios were modeled both with the presence of a buffering 3 meter thick "basal layer", and without. Model inputs also included a wide range of percolation rates from 1% to 10% of total annual precipitation. The Gobi region of the project area has very low rates of precipitation (~ 100 mm/year) and also very high evapotranspiration rates during non-winter months.

In summary the modeling found net percolation was too low for saturated conditions to develop, regardless of if there was a basal layer or not. Modeling confirmed that net percolation rates are too low to allow for the development of a saturated zone within waste rock dumps. No saturated hydraulic connection was modeled to form between PAF material and any perched water table at the OT site.

The key requested change to the OT Material Segregation Procedure was the cessation of the current practice of placement of a non-acid forming waste rock and/or clay layer as a neutralizing or low-permeability basal layer underlying potentially acid-forming waste rock dumps or ore stockpiles. The cessation of this practice was approved by Lenders due the very arid/high evaporation climate of the region, corresponding low infiltration rates of any produced runoff, and lack of sensitive perched aquifer groundwater resources in the region. Anecdotally the IESC has not observed the presence of standing water at the toe of any waste rock dumps or ore stockpiles at the site. Seepage is observed at the TSF, but this is a function of the saturated conditions at the tailings receptor location.

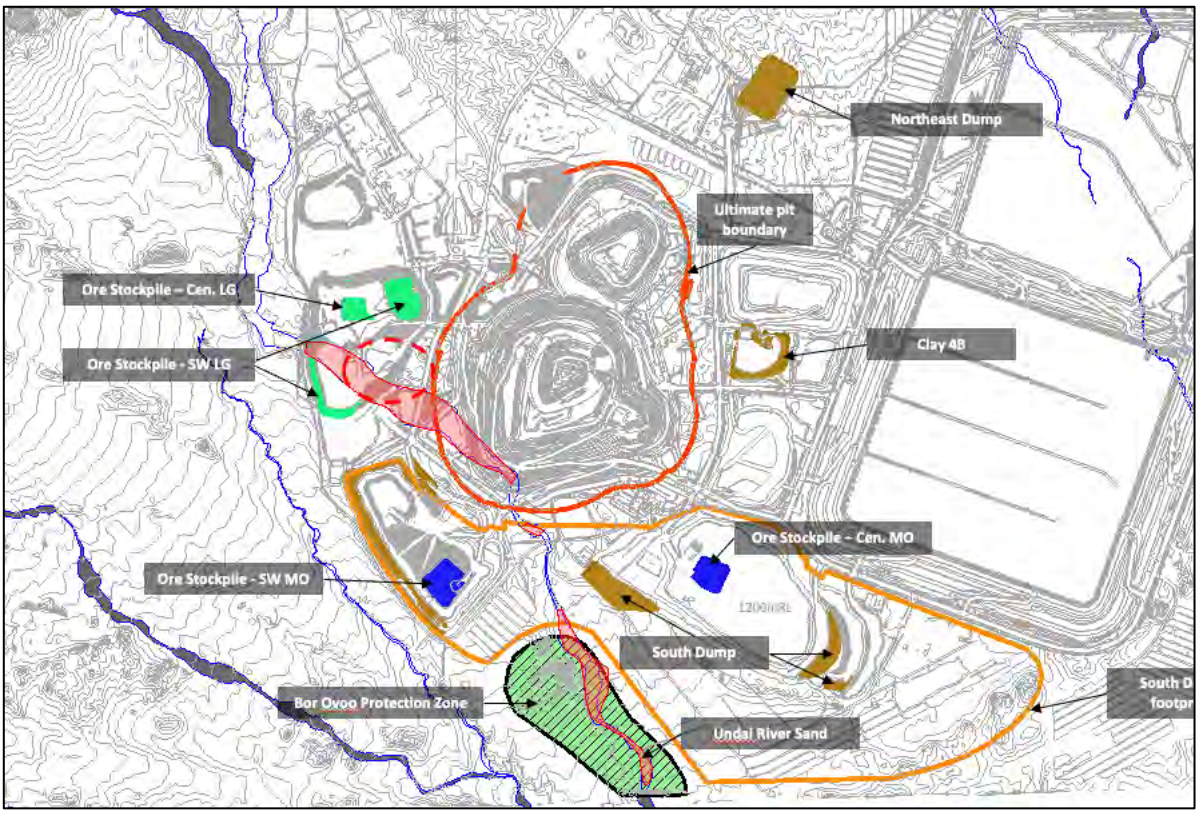
The modeling undertaken demonstrate the lack of risk of PAF materials leaching metals into the environment via acid mine drainage. This is corroborated by the lack of any AMD present at the site, which are in turn a function of the extreme dry environment. Further groundwater gradients in the vicinity of the WRDs flow towards the open pit, creating a natural sump for any AMD that would generate, although this is not modelled to be present.

The Undai River system is the natural sensitive environmental receptor; however the section of the Undai River within the Mine License Area is cut off from the regional system via constructed "cut-off dams". Thus no drainage from WRDs would escape into the site. Nevertheless OT will maintain the current practice of placement of a 3 meter thick NAF "basal layer" in locations of the cut-off Undai River channel, after high conductivity sands and gravels are first removed. A diagram of waste rock and ore stockpile is shown on Figure 4-24, as well as the location of the "Bor Ovoo Protection Zone". For a calendar year 2023 no PAF material has been placed directly on the ground surface; however in year 2024 it is anticipated that

approximately 6 Mt of PAF material will be deposited in the Northeast Dump also shown on Figure 4-23. This location is well away from the Bor Ovoo Protection Zone.

Most recently the South Waste Rock Dump has come into use, and approximately 12 Mt tons of material will be deposited in 2024 at this location. The areas this material will be emplaced are shown on Figure 4-24. The Environment Team has ensured waste rock emplacement occurs outside of the Bor Ovoo Protection Zone, and has also worked with the Communities Team to ensure visual line of site from the New Bor Ovoo spring to the location of the historic Bor Ovoo location, a culturally sensitive consideration.

Figure 4-24 Location of Waste Rock Dumps and Ore Stockpiles at End of 2024



4.3.2 TSF Dam Break Assessment

TSF Cell #2 has been categorized as a High Consequence facility under the ICMM (2020) Global Industry Standard on Tailings Management. The Feasibility Study prepared for this Cell #2 (*Oyu Tolgoi Copper Mine TC2 Tailings Storage Facility Feasibility Study, ATC Williams, 2021*) contains a Dam Break Assessment that is still valid. For this worst-case scenario modeling outcomes indicated the underground access area would be impacted by a western breach and approximately 20 herder winter shelters and 23 herder wells inundated within 24 hours. However, it should be noted that the worst-case scenario is considered unlikely to occur due to the method of TSF construction and the low seismicity risk. This scenario was only presented to illustrate the maximum theoretical inundation area. In line with the TSF Emergency Response Plan, the Communities Social Performance team conducts quarterly monitoring of the potentially affected downstream households with KB Emergency Management Agency and Police Department representatives, to identify household members and contact information to ensure that should an incident occur, potentially affected households can be reached in a timely manner and supported to evacuate, should this be necessary.

4.4 Non-Mineral Waste and Hazardous Materials Management

The overall Project strategy for the management and disposal of non-mineral waste is outlined in the Non-Mineral Waste Management Plan[5] and in the Non-Mineral Waste Collection and Transfer Procedure[6] that sit under the overarching ESMP framework. The general Project strategy for the management of hazardous material throughout the Project is outlined in the Hazardous Materials Management Plan[7] which also sits under the overarching ESMP framework. The plan provides general instructions to OT personnel and contractors on the management of hazardous materials to prevent/contain spillages and environmental contamination. The plan is supported by a number of procedures which provide specific details regarding hazardous materials management activities. These include a Spill Response Procedure[8] to address any uncontrolled releases to the environment.

With the exception of hazardous materials the project continues to be self-sufficient in the management of waste produced during operations. The permanent Waste Management Center (WMC), located on the north-east side of the MLA, continues to be operated by the contractor company Khanbogd Waste Management Center LLC. This company relies on other smaller recycling/reuse local sub-contractors to manage the final disposal of recyclables including industrial waste oils, waste kitchen oil, scrap metal, cardboard, plastics, electronic wastes, and containers for industrial chemicals.

OT implements a waste management hierarchy system that targets minimized generation of non-recyclable waste, re-use of materials when possible, and recycling of non-reusable items in lieu of landfill disposal. Reusable items such as wood are distributed to the local community or delivered to the Khanbogd primary Red Cross association under a MoU signed with OT. The OT Environment Team works closely with OT procurement teams to implement an environmentally - considerate procurement strategy. The following are components of the procurement strategy:

- Hazardous materials can only be sourced after approval in a ChemAlert system;
- OT contracting with suppliers that provide goods/ services and that generate hazardous waste to include a waste management plan in underlying contracts; and
- OT requires waste management plans in new contracts from bidders as part of the proposal process, and these plans are included in the overall evaluation from bidders.

In the reporting period between September 2023 to May 2024, OT generated a total of 30,597 tons of non-mineral waste, of which 61% was recycled. In the reporting period a total of 8,540 tons of nn-hazardous waste were disposed of at the WMC. Significant recycling practices are undertaken for a variety of materials including plastics, cardboard, organic waste, wood and cooking oils. In addition in reporting period, a total of 20,447 tons of ash was generated from the CHP. This material has historically and is currently disposed of in a dedicated and unlined Inert Waste Dump that is 7.86 hectares in size and located near the Waste Rock Dumps.

This Inert Waste Dump is close to reaching its capacity, being 90% full at the time of this Audit. Filling rates at the Inert Waste Dump have increased as a result expansion of the Central Heating Plant and resultant increase in ash waste generated from this facility. The Inert Waste Dump was licensed in 2018 (A/138) for disposal of ash and waste concrete; however recently there has been a regulatory push away from issuing new permits for any unlined disposal facility. In 2022 OT submitted a petition to the Governor of the

[5] *Non-Mineral Waste Management Plan* - Doc. No. OT-10-E15-PLN-0001-E.
[6] *Non-Mineral Wall Waste Collection and Transfer Procedure* Doc. No. OT-10-E15-PRC-0002-E.
[7] *Hazardous Material Management Procedure - Doc. No. OT-10-E5-PRC-0001-E.*
[8] *Spill Response Procedure – Doc. No. OT-10-E15-PRC-0002-E*

Umnogovi *aimag* to expand into a new 10 hectare area for inert waste disposal. The Environmental Protection Agency of the Umnogovi *aimag* no longer endorses the burying of inert waste, resulting in no approval of the petition. OT has resubmitted the request in 2024 for a smaller 5-hectare expansion, and for use over two years..

After exploring deposition of ash into the TSF this option was deemed not feasible due to negative impacts to the concentrator circuit and traffic management. It is possible that inert waste will be deposited in waste rock dumps, although this will require regulatory and Lender approval. OT is also investigating the pulverization of ash for use in concrete production, although this may only be feasible for approximately 20% of generated ash. Long-term disposal plans for ash are still pending, and the IESC will follow up on this consideration in future audit reporting

The OT Environmental team had established a composting facility for organic kitchen food waste with resultant compost used for vegetative rehabilitation efforts. The composting facility is about 3 hectares and size administered by the OT infrastructure team. Within the compost area rows are established that are 80 meters long, 2 m wide and 2 m high (Figure 4-25).

Figure 4-25 Composting Area at Oyu Tolgoi Site

Recycling is accomplished using 15 contractors, 11 of which are used for the recycling of non-hazardous waste and the remaining four of which hold permits for the disposal of hazardous waste. The waste type recycled, classification (hazardous or non-hazardous) and the name of these recycling companies were provided in the Q2 2023 Audit Report.

Recycled materials are tracked under WM-KPI 05. Notable salvaged materials for 2023 included 5,470 tons of recycled metals, 2,270 tons of composted food waste, and 1,241 tons of recycled technical oils. In 2023 there were no non-hazardous waste management community complaints.

OT has a hazardous waste cell at the WMC which has been designed to international best practice containment standards, as well as Mongolian requirements for the storing of hazardous materials (Government Resolution No. 118 of 2018). The hazardous waste cell is not currently in use pending a long-delayed Hazardous Landfill Operation Permit authorization by the Mongolian Ministry of Environment and Tourism (MET).

In June 2020 a Mongolian domestic Detailed Environmental Impact Assessment (DEIA) for the hazardous waste facility was approved by the MET. Since that time OT has been working with the MET to obtain the requisite Hazardous Landfill Operation Permit. Until this is obtained no hazardous materials can be deposited into the hazardous waste cell at the OT site, as originally envisioned in the ESIA. OT had anticipated receiving the Operational Permit in 2021 but there have been substantial delays in receiving authorization. OT has had multiple meetings with the MET Waste Management Committee with no clear path identified for issuance of the requisite permit.

Because of this delay the OT Project has accumulated a large volume of hazardous waste which is stored in containers and in dedicated yards. At the end of Q1 2024 there was a total 515 tons of stored hazardous material. An inventorying of the total tonnage of hazardous materials stored on site over the last two years is shown in Table 4-6.

Table 4-6 Hazardous Waste Stored on Site 2022 - 2023 (in tons)

Type of Hazardous Waste	Different Types	Q2 2022	Q2 2023	Q4 2023	Q1 2024
Disposal Method is Clear	15	279	344	347	418
Disposal Method is Not Clear	13	25	27	27	27
Recyclable Material	5	118	153	75	24
Reusable Material	8	32	32	32	32
Unidentified Material	4	14	14	14	14
Total	**45**	**468**	**570**	**495**	**515**

Hazardous materials, including liquid chemicals, are stored in a dedicated hazardous material storage area as shown on Figures 4 – 26. This storage area complies with all Mongolian requirements for the storage of hazardous materials, is permitted by the Mongolian General Agency of Special Inspection, and audited by the regional *aimag* Environmental Inspection Agency. The hazardous material storage area has a concrete base, walls to separate materials, roof to protect against solar radiation, and a spill containment system.

Figure 4-26 Hazardous Waste Storage Area

In 2022 OT performed inspections of nine companies that are engaged with for recycling and/or hazardous disposal. In Q3 2022 one of these companies received authorization to incinerate hazardous waste (Element LLC). This private enterprise, located outside of UB, has a modern incinerator that can achieve high enough temperatures to incinerate hazardous waste. MET has encouraged OT to use this incinerator option for the management of non-recyclable hazardous waste. The contractor company for management of the Waste Management Centre (Khanbogd Waste Management Center LLC) has signed an agreement with this third

party for shipment, handover and disposal of hazardous waste currently stored at the OT site. OT has provided a copy of the Government of Mongolia certificate that authorizes this disposal.

In 2023 approximately 67 tons of hazardous waste were shipped for incineration from the site to the contractor Element LLC and Tsetuukh trade LLC. This material included approximately 51 tons of concrete containing asbestos, and 16 tons of predominantly oily rags. The company Tsetsuukh Trade, LLC, located near UB, incinerated the oil rags, with Element LLC, also near UB, managing the asbestos-containing concrete. In Q2 trails were held by Element LLC to incinerate the concrete. However the trail was unsuccessful and the material was disposed of in an adjacent permitted landfill.

The IESC comments that in the prior Audit Report a recommendation was made to submit an NoC related to the off-site processing of hazardous waste prior to this activity taking place.

4.5 Air Quality

The general strategy for management of particulate and gaseous emissions is described in the Operations Phase Atmospheric Emissions Management Plan[9] (AEMP). This management plan cross-links with other management plans that have air quality implications such as the Community Health Safety and Security Management Plan, the Transport Management Plan and the Land Disturbance Control and Rehabilitation Management Plan.

The intent of the AEMP is to outline applicable Project Standards, define commitments, define monitoring and reporting procedures, and establish key performance indicators (KPIs). The principal implementation procedure of the AEMP is the OT Air Quality Monitoring Plan[10] (AQMP). The AQMP provide procedures for emission and ambient monitoring, including monitoring locations both within and outside of the Mine License Area. Reporting requirements are also described.

4.5.1 Ambient Air Quality

In calendar year 2023 the Project reported a total of 18 non-compliances with applicable ambient air quality Project Standards, as listed in Appendix 1 of the AQMP. All of these non-compliances were related to particulate matter ($PM_{2.5}$ and PM_{10}) and associated with the occasional spring dust storms that tend to occur in the region. There are no immediate concerns regarding ambient air quality, recognizing background concentrations of particulates in the occasionally very dusty South Gobi region. During the frequent dust storms in the region background concentrations can reach 12 – 20 times the ambient air quality Project Standard. In general, ambient air quality meets the Project Standard at the site for 98 – 99% of the continuous monitoring cycle.

At the Coarse Ore Storage (COS) Building there have been a number of mitigations implemented over time, including the installation of dust curtains and the use of a foam dust suppressant to control fugitive dust emissions. These mitigations have been extensively described in previous Audit Reports. Although mitigations have reduced fugitive dust there is at times an excessive accumulation of dust outside of the COS Building itself, which creates an occupational health and safety risk.

A Risk Assessment has identified exposure to respirable dust, including in particular silica, as a key concern. Some sampling has occurred along the conveyor from the COS Building, and just outside of the facility. Ambient air quality monitoring results are evaluated by OT relative to domestic regulation MNS 4990:2023 (Occupational Safety and Occupational Hygiene). Limited results do not show exceedances of applicable Occupational Exposure Limits (OELs), but are in some instances are above 50% of the OEL which is considered an action level. The IESC recommends an assessment of dust levels at and around the COS relative to World Health Organization Ambient Air Quality Guidelines, as contained in Table 1.1.1 of the

9 Atmospheric Emissions Management Plan- Doc. No. OT-10-E12-PLN-0001
10 Air Quality Monitoring Plan – Doc. No. OT-10-E12-PLN-0002

World Bank Group's General EHS Guidelines. The objective of this assessment would be to ensure appropriate occupational health and safety conditions for shift employees, who typically work two week rotations. Excessively dusty conditions can be an occupational health and safety consideration at the OT site. This is considered a Level 1 non-conformance as there are action levels associated with the current levels of dust exposure to workers.

There was one herder complaint in 2023 related to excessive dust on the road linking OT with the Tavan Tolgoi coal mining operation (the "TT Link Road"). In response OT has double the frequency of watering of this road during the summer months, and has also applied a dust suppressant coating to the road. The total length of the TT Link Road is about 13 km and OT has applied the dust suppressant to approximately 5 - 6 km of the road near the herder's location and also near the North gate. There are plans to pave this road by 2025, as requested by stakeholders. Pilot trails have shown that dust levels can be reduced by 50%↑ with the application of a dust suppressant. OT has also administered Dustex to just outside Shaft #1, along the road to the airport, along interim roads, among other locations. An application was also used at the Mazaalai Camp.

4.5.2 CHP Stack Emission Quality

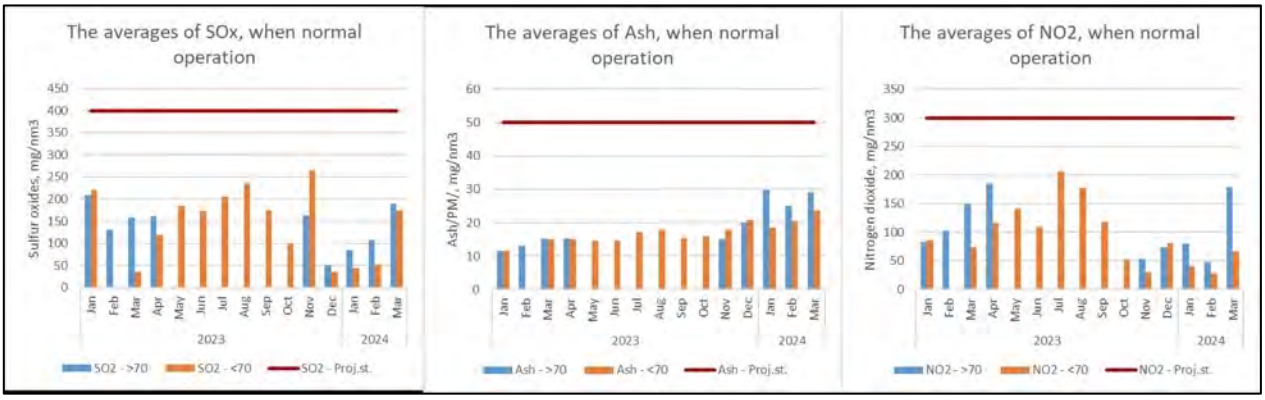
The Central Heating Plant (CHP) has a capacity 130 MW. Approximately 40,000 tons of coal per year are used at the CHP. In Q3 of 2019 the project installed a Continuous Emissions Monitoring System (CEMS) at a height of 30 m on the chimney stack from which all emissions of the CHP discharge. This work was completed as part of the overall CHP expansion. Installation of the CEMS is consistent with international best practice and Project Standards, as required for thermal installations of greater than 100 MW capacity.

The CEMS continuously monitors ash/particulates, NOx, and SO_2. For this Audit monthly summary data has been provided for a 15-month period including calendar 2023 and Q1 of 2024. Under approved NoC 2016-015 the evaluation of stack emission quality from boilers at the CHP should occur when the boiler loads are over 70% of nominal capacity. This is also a stipulation of Mongolian National Standard MNS 6298:2011 which regulates stack emission quality. Accordingly, in its review of monitoring results OT excludes some data from analysis.

As mentioned in the prior Q2 2023 IESC Audit Report over a 15-month rolling reporting period there is a limited set of "usable" data, as boiler loads are often below the 70% threshold. For example in calendar year 2023 only 129 of the total 365 days were during a time of over 70% load (typically during the November – March winter period). During warmer months boilers gradually come offline and are cycled at low output to meet the much reduced heating requirements of the site. As a thermal facility the plant is not operated at a consistent capacity output as may be the case with power plants. In addition, 14 days are removed from analysis for boiler start-ups and shut – downs which create temporary incomplete combustion periods. There was also one eight day period of shutdown for scheduled maintenance. All baghouse filters were changed over 2022 – 2023.

Data from the annual data set for both under and over 70% load are provided in Figure 4-27. As shown returned annual data meet the Project Standard for both conditions, as when combined as a total annual average.

Figure 4-27 CHP Gaseous Emissions for 2023 and Q 2024 (Loads Above and Below >70%)



The applicable Project Standard for CHP emissions is 50 mg/m^3 for total particulates, 300 mg/m^3 for NOx and 400 mg/m^3 for SO_2. The ESIA, and the underlying Environmental and Social Management Plans, anticipated development of the underground project, including the required expansion of the Central Heating Plant to 130 MW. The Project Standard was set acknowledging the remote operating environment, application of Best Available Technology, and with detailed Ground Level Concentration modeling to anticipate any potential negative impacts to ambient air quality.

In late 2021 OT submitted a Notice of Change related to the evaluation of CHP stack emissions (NoC 2021-003). The submitted Category NoC proposed omission of significant data from analysis relative to the Central Heating Plant emission standard (the Project Standard), due primarily to low seasonal operational loads. The project has demonstrated the application of Best Available Technology (BAT) at the Central Heating Plant as discussed in the document *OyuTolgoi -Central Heating Plant Expansion BAT Assessment, Jacobs Engineering, 2017*. With regards to risk assessment the BAT Assessment provides the following summary:

"It is concluded that meeting the Project Emission Standards constitutes the application of BAT under the circumstances faced in Mongolia. The existing abatement technology is appropriate to the local conditions and the fuel and limestone available. In addition to the extremely small ground level concentrations compared to EU standards the high impact areas are small and within the mine complex, there are no local settlements to be affected. In addition the local environment does experience every high levels of dust and so the small particulate emissions from the plant have no additional impact"

The CHP currently meets EU Directive emission limits for 100 – 300 MW facilities as a mean annual value. This is true even if data is included for days at which the boilers are operating at less < 70% load. This is positive as an absolute indicator of annual greenhouse gas emissions. Due to the very low environmental risk identified in the BAT Assessment, and the clear application of BAT for the region, the IESC reports on mean monthly and annual values for purposes of conformance with the Project Standard. In particular the addition of limestone to the coal feed has greatly reduced SO_2 concentrations by about an order of magnitude.

4.5.3 Greenhouse Gas Accounting and Energy Efficiency

As detailed in the prior Q3 2023 Audit Report there has been a recent significant change to the accounting of GHG emissions at the OT site. In summary a revised grid emission factor has been adopted, being reduced from a former 1.058 Mt CO_2/MW-hour to a 2023 value of 0.618 Mt CO_2/MW-hour. The OT mine receives power supply via an Electric Transmission Line (ETL) connecting with the Inner Mongolian Power Company (IMPC) grid. This grid is a major electricity supplier in northeastern China, and also exports the current continuous power supply to OT. The IMPC grid is very large and has an approximate 100 GW total capacity. In recent years considerable renewable supply has been added and the current IMPC grid is approximately 60% coal and 40% wind/solar power generation. Thus the grid emission factor should have been adjusted to reflect the lowered emission factor rate, and this exercise had not previously been completed.

OT has retained a consultant who has advised that the IMPC grid is connected with the overall Chinese power grid, and thus the overall Chinese grid emission factor should be used when calculating OT GHG emissions from the consumption of electricity (i.e., Type 2 contributions). The International Energy Agency (IEA) issues a country-wide national average for the Chinese grid of 0.618 Mt CO_2/MW-hour, and this is the value now used for OT GHG accounting. The 2023 approximate grid emission factor for the Inner Mongolian Power Grid is 0.75 Mt CO_2/MW-hour, so the adopted country-wide value is lower.

OT has revised its' historic GHG emission contribution based on the IEA guidance. This included revision of GHG reporting data back to the baseline GHG reporting year of 2018 and through Year 2022. These changes are summarized in Table 4-7.

Table 4-7 Revised OT Total GHG Emissions Based on IEA Grid Emission Factor (2018 – 2023)

Year	Prior Grid Emission Factor (Mt CO_2/MW-hour)	Revised IEA Grid Emission Factor (Mt CO_2/MW-hour)	Prior reported OT Total GHG Emissions (tCO_2 (eq))	Revised reported OT Total GHG Emissions (tCO_2 (eq))	Percent of prior reported value
2018	1.058	0.643	1,768,044	1,040,283	58.8%
2019		0.634	1,780,871	1,077,278	60.5%
2020		0.640	1,845,476	1,101,227	59.7%
2021		0.627	1,738,426	1,152,887	66.3%
2022		0.618	1,876,781	1,249,430	66.6%
2023 (1)		0.618	N/A	640,219	N/A

(1) The 2023 value reflects OT purchase of Renewable Energy Certificates, lowering reported total GHG emissions

As shown in Table 4-7 the revised emission factor has the effect of reducing OT's total reported GHG emissions by a 33-43% over the time period from 2018 – 2022. This is because most of the GHG emissions from OT are "Scope 2" from the direct consumption of electricity (approximately 80%). The other emissions are largely Scope 1 from the burning of diesel fuel (approximately 15% of generated GHGs) and burning of coal at the CHP (approximately 5% of GHG emissions). In 2022 total **revised** GHG emissions were 1.25 Mt CO_2 (eq).

For calendar year 2023 OT generated approximately 1.2 Mt of $CO_{2\,(eq)}$. This included Scope 1 emissions of 346,089 t $CO_{2\,(eq)}$) and Scope 2 emissions of 865,088 t $CO_{2\,(eq)}$, with negligible Scope 3 emission of 7,500 t $CO_{2\,(eq)}$. Beginning in 2023 OT has adopted the practice of buying Renewable Energy Certificates (RECs), sourced from China, to offset its 66% ownership interest of OT's emissions. In sum total Rio Tinto has purchased 570,958 t $CO_{2\,(eq)}$, which then lowers OT's reported Scope 1 and 2 emissions to approximately 640,219 t $CO_{2\,(eq)}$.

These efforts reflect a wider Rio Tinto commitment to reduce Scope 1 and 2 emissions from 2018 baseline levels 15% by 2025, and 50% by 2030, and overall to be net zero in emissions by Year 2050. To meet these goals Rio Tinto is planning to invest approximately $7.5 billion in decarbonization projects, mostly implemented by 2030. At the OT site the goal is to reduce total GHG emissions by 30% from 2018 baseline levels by Year 2025 and by 50% by year 2030.

OT is exploring domestic renewable energy projects to provide power to the site. The peak power demand with underground at full development is approximately 265 MW. There are some severe limitations to this approach, including the overall existing stretched capacity of the Mongolia power grid and the Investment Agreement which prescribes sourcing of power directly from this grid . The overall power grid for Mongolia is approximately 1,475 MW capacity and close to full demand with only about 2% excess capacity. Therefor there are significant impediments to OT tying in with existing Mongolian power grid supply. Regardless OT is investigating a potential renewable energy project of between 180 – 220 MW scale, which would likely consist mostly of wind power generation. These efforts will be reported on by the IESC as they mature.

The Project also tracks greenhouse gas emissions relative to concentrate production. In full year 2022 emission efficiencies were previously reported at 3.07 tons CO^2/ton of concentrate produced against an estimated forecast of 3.05 tons CO^2/unit product. However using revised grid emission factor the revised emission efficiencies were closer to 2.00 tons CO^2/unit product in 2022 metrics. For calendar year 2023 OT has adopted reduction in total $CO_{2\,(eq)}$ emissions using the purchase of RECs as previously described. This brings 2023 values down to 0.80 tons CO^2/ton of concentrate produced (640,219 tons $CO_{2\,(eq)}$ generated/ 797,000 tons of concentrate produced).

OT has a long track record of implementing energy efficiency initiatives. These are detailed in prior Audit Reports. OT is required under Mongolia law to submit annual energy efficiency plans to the Energy Regulatory Committee of the Ministry of Energy. To address Scope 1 emissions OT is trialing the use of two Electric Vehicles (EVs) for surface operations. There are also four BEVs in use in Underground operations and six more will be delivered in year 2024. Comprehensively OT is investigating the replacement of the mine light vehicle fleet (currently about 300 diesel fueled vehicles) with electric vehicles. The trialing of electric heavy equipment for Underground operations is in progress, to understand operational and safety limitations.

As mentioned in prior Audit Reports the replacement of diesel-fueled gensets has already taken place at some locations (e.g., the Explosives Magazine), and the replacement of others is part of ongoing work. OT is also evaluating the operation of the CHP, as 60% of the output from that facility is used to heat air for underground works. The possibility of reducing temperatures from a current 16 degrees Celsius to 12 degrees is under consideration, as well as different options for heating air. OT is analyzing the 2022-2023 data set to better understand heat consumption patterns and future demand.

4.6 Noise and Vibration

Noise monitoring at the OT is conducted at four continuous ambient air and noise quality monitoring network stations, with one of these being a control station. In 2022 noise monitoring at these stations, which include the location of the TSF, the Waste Management Centre, and at the Manlai camp residential area, returned monitoring results ranging from 22.5 – 48.1 dB, below the residential standard of 55 dB. There have been no noise-related incidents or complaints at the OT mine site.

In Q2 of 2022 a ground vibration survey was completed by the Institute of Astronomy and Geophysics, Mongolian Academy of Science. The study area included in this report covered an area of approximately 2,170 km^2. Field measurements were done at 8 locations over 7 days that captured four blast events at the open pit, four blasts at the underground mine complex, and one blast at the Dugat gravel quarry. Peak particle velocity associated with the blasts were 0.001 - 0.185 mm/sec which is at least an order of magnitude lower than the permissible level of 5 mm/sec. There have been no non-conformances with KPI NV-KPI 01 (Noise and Vibration Incidents) or KPI NV-KPI 02 (Non-compliance with Noise and Vibration Standards). There was one vibration-related community complaint at a location to the east of the site. The nearest habitation in this direction is 6 km from the site MLA boundary, and 10 km from the open pit. OT subsequently conducted a follow-on investigation with vibration levels at the location measured at 500 – 1,000 times below the 5 mm/sec standard. The study[11] showed that vibration levels actually meet this threshold starting from 200 m of the blast epicenter.

4.7 Emergency Preparedness and Response

The general Project strategy to face and manage emergency situations during project operations is defined in the Operations -Phase Emergency Preparedness and Response Plan (EPRP)[12] which provides a high-level overview of the procedures and commitments to emergency response and preparedness. The EPRP is supported by response plans and procedures which define specific actions to be undertaken in the event of an emergency situation. These include Spill Response Procedures and Hazard Identification and Risk Management Procedures. Underground health and safety considerations, including emergency preparedness and response, are evaluated in a separate independent assessment conducted by the IE.

OT reports good implementation of integration of the surface Emergency Response Team (ERT) and the underground Mine Rescue Team (MRT). For 2023 key activities are summarized as follows:

- A Memorandum of Understanding (MoU) was signed with National Emergency Management Agency of Mongolia. In the framework of the MoU the ERT delivered training on use of self-contained breathing apparatus the 37th Firefighting and Rescue Department of Govisumber aimag;
- Emergency response exercises were held at Khanbumbat Airport in cooperation with Khanbumbat Airport team, airport operator, medical team, Khanbogd soum Police, Khanbogd Emergency Management Agency and Khanbogd Soum Hospital;
- The emergency control room restructured for enhanced operational response.
- A CiteOps system is implemented in the Surface Emergency Rescue Team (ERT) and underground ERT as a part of site wide integrated planning system;

[11] Bataa D., Baasanbat Ts., Bilegt B., Uuganbayar B., Dashnyam B., Batzorig O., Tseesuren O., Erdenebayar N. 2023. “Blast-induced vibration assessment on the sensitive receptors”. Springer Nature. Atlantis Press. A. Lkhamsuren et al. (eds.), Proceedings of the Second International Conference on Resources and Technology (RESAT 2023), Advances in Engineering Research 226. DOI: 10.2991/978-94-6463-318-4_15

[12] Emergency Preparedness and Response Plan- Doc. No. OT-12-PLN-0011 Version 1.2.

- A disaster management plan is developed for Surface and Underground respectively and in the process of approval by National Emergency Management Agency;

- A new contractor (Tavan Ord LLC) was retained to assist with Aircraft Rescue and Firefighting as well as underground and surface rescue;

- The surface ERT completed 36 of 47 scheduled emergency response training scenarios, safely without any incident;

- A FRV 9000 rescue vehicle (firefighting and rescue truck) was delivered to the site. Operators' training package for FRV 9000 rescue vehicle (firefighting and rescue truck) has been completed. The training schedule has been initiated UG ERT staff to train them as Operators;

- Underground Full Deployment evacuation exercise completed in Q4 2023 and underground Semi Deployment evacuation exercise completed in Q2 2023;

- Critical skills training by Surface and Underground ERT training staff maintained and ensuring capability and skill set of Staff and volunteers is maintained.

- The underground ERT conducted a total of 52 continuation classroom trainings, 15 core training and 10 web/ online training sessions for 230 mine rescue volunteers, safely without any incident.

Emergency response improvement plans are ongoing and include sharing experiences and best practices with other Rio Tinto emergency response teams.

4.8 Transport Management

The Transport Management Plan[13] (TMP) addresses safety conditions associated with OT operations including contractors. Aviation safety is addressed in a separate document outside the scope of the plan. The TMP identifies management controls covering road design and safety including measures in support of wildlife protection. In addition to safe vehicle operation management controls are intended to address animal impact hazards to both domestic livestock and wildlife. For example animal passage crossings have been constructed along the OT - Gashuun Sukhait, OT - Khanbogd, and OT - airport roads. The OT Infrastructure and Services Department has responsibility for exercising management control, with the involvement of the Communities department in public area road safety programs. The Environment Team is also heavily involved in transport management including trails of dust suppressant applications on high-traffic roadways. In 2023 the last 18.6 km of route to the GSK border crossing was paved.

In 2023 a total of 1,342 convoys delivered 859,905 tons of concentrate to China. This is an increase from 2022 total of 1,194 convoys delivering 771,566 tons of concentrate. Transport was a challenging issue throughout the COVID-19 pandemic with strict controls at the Chinese Border; however the situation improved substantially towards the end of 2022 with convoy numbers roughly doubling the proceeding year's throughput. In Q2 2023 OT removed COVID-19 transport restrictions

OT LLC has long evaluated alternative routes for concentrate export other than truck transport through the GSK/GMD border crossing. An option of convoy truck surface transportation first to UB, then rail transport from UB to the border crossing at Erlain, has been considered throughout the life of the Project. This option includes 750 km of truck convoy surface transport from OT to UB, 84 km of which is dirt track and 660 km of paved road, ending at the Amagalan Rail Terminal in UB. The option of using other export options came

[13] Transport Management Plan - Doc. No. OT-10-C3-PLN-0001 Version 1.4.

under increasing relevance with the strict COVID-19 controls at the GSK/GMD border crossing. In 2021 approximately 20,000 tons of accumulated concentrate at the OT site were exported using this option (just under 3% of the total volume exported that year). This export option was reviewed by the Lenders and the IESC and approved in 2021 under NoC 2021-004.

Most recently an option of rail transport of concentrate has come under serious consideration. There is already an existing railway line from the nearby Tavan Tolgoi coal mine to a location near the Chinese border. Rail shipments cannot currently directly cross into China as the rail gauge (width) of tracks there is narrow than those used in Mongolia. Thus these external coal shipments are directly unloaded onto the ground, then reloaded onto rail cars with the narrower gauge.

Connection from the OT site to the existing rail line would require a 26 km spur rail line. OT is evaluating this option, including environmental/social assessment and mitigation requirements. A Prefeasibility Study (PFS) has been completed for the rail spur, with a full Feasibility Study scheduled for completion by Q4 2024. OT estimates an approximate 3-year time frame for completion of any rail spur project, which would include sorting through the rail width gauge logistical challenge at the border with China. The IESC will continue to report on this potential concentrate transport option in future Audit Reports. Future concentrate delivery is an issue as export rates are projected to increase from the current 860,000 tons to 2 million tons per annum.

There are multiple KPI's identified in the Transport Management Plan. Metrics for outbound service providers, of which there are three, are provided in the prior Q2 2023 Audit Report. In sum total in 2023 there were 47 documented breaches of KPIs. The IESC views these non-conformances as good indicators of the vigilance that is given to transport management off site.

4.9 Biodiversity and Ecological Management

OT manages its impacts on biodiversity and ecosystem services through a Biodiversity Management Plan[14] (BMP) and an Offset Management Plan. Additional management controls are included in other management plans, including the Land Disturbance Control and Rehabilitation Management Plan (LDCRMP), Pasture and Livelihood Improvement Management Plan (PLIMP) and a further 10 management plans. For ecosystem services an Ecosystem Services Monitoring and Evaluation Plan (ESMEP) identifies key users and beneficiaries for four critical or priority ecosystem services including pasture, biomass fuel, freshwater and water regulation. OT sets out the various management and monitoring measures that are used to maintain flows of these services and the benefits they provide. OT monitors the effectiveness of mitigation measures and tracks progress to deliver net gain and/or no net loss outcomes through a Biodiversity Monitoring and Evaluation Plan (BMEP). In 2020, OT updated the Priority Plant Protection Procedure and ESMP, and in 2023 updated the BMP and the BMEP, all through the Notice of Change (NoC) Procedure.

Field and technical support is provided by the following organizations and consultants: Global Biodiversity Conservation (GBC), Wildlife Conservation Society (WCS), Sustainability East Asia (SEA), Wildlife Science and Conservation Centre (WSCC), Good Growth Company, and the Professional Biology Society of Mongolia (PBSM), which is a Mongolia-based science institute.

For this desk-based audit the IESC and OT staff and consultants met via five videoconferences between May 6-8, 2024, with focused sessions on offsets, rehabilitation, and closure. The following subsections detail the IESC's current observations and recommendations, organized according to biodiversity values for which OT has committed to achieve a Net Gain. Table 4 – 8 summarizes the recommendations from this audit.

[14] Lender commitments were initially included in a Biodiversity Action Plan, now retired, with open actions incorporated in the BMP

Table 4-8 Summary of IESC Recommendations for Biodiversity

Recommendation	Relevant Program	Reason	Responsible for Action	Timeline	Milestone
Submit options analysis for rangeland offset	Biodiversity: Rangeland Offset	OT has a level III non-conformance for not offsetting its footprint on rangeland	Superintendent Biodiversity	Original deadline: **May 2023** Draft submitted: **May 2024** New Deadline: **July 2024**	Report detailing the options for rangeland offset
Conduct comparative study of rangeland rehabilitation methods	Biodiversity: Land & Rehabilitation	Current biological rehabilitation methods may not be achieving outcomes better than technical rehabilitation alone	Superintendent Biodiversity	Original deadline: **April 2024** New Deadline: **June 2024**	Study design detailing types of rehabilitation to be evaluated (including technical rehabilitation alone), statistical approach for evaluation, and timeline for implementation
Implement updated timeline for meeting commitments in the Corrective Action Plan for Priority Plants	Biodiversity: Priority Plants	OT has a level II non-conformance for not meeting commitments for priority plants	Superintendent Biodiversity	See updated timeline in Corrective Action Plan	Notice of Change of updated Corrective Action Plan See Corrective Action Plan for milestones
Develop method statement for elm conservation	Biodiversity: Elm trees	Agreement with lenders to re-allocate elm monitoring resources to conservation	Superintendent Biodiversity	**July 2024**	Method statement for elm regeneration and conservation project and Notice of Change

Recommendation	Relevant Program	Reason	Responsible for Action	Timeline	Milestone
Submit updated Biodiversity Monitoring & Evaluation Program and Notice of Change	Biodiversity: -Ephemeral lakes and pools -Elm trees -Granite outcrop floral community -Saxaul trees -Priority birds -Priority plants -Rangeland	Formalize changes agreed in January 2024 Biodiversity Workshop	Superintendent Biodiversity	**August 2024**	Revised BMEP and Notice of Change

4.9.1 Asiatic wild ass (khulan) and Goitered gazelle

The proposed offset will remove fencing and decrease habitat fragmentation along the Trans-Mongolia Railway (TMR) from Ulaanbaatar to China. If successful, this will generate a substantial net gain in accessible rangeland habitat (>1 million hectares). Khulan were extirpated from the habitat on the eastern side of the rail line. Removal of the fencing barrier will effectively make unoccupied habitat newly available to the population of khulan currently on the western side of the rail line and will improve access for gazelle (as well as reduce gazelle mortality from entanglement in fencing).

OT conducted a pilot with rail authorities to open three segments of fencing, 300, 500 and 700 meters in length, for a total of 1.5 km of openings in the rail line. Three hundred and fifty khulan crossed to the eastern side of the rail line. However, after the pilot study concluded, the gaps were closed and have not been re-opened. Continuation of the fence openings into the future will require a negotiated agreement with rail authorities. The agreement is presently not moving forward due to a proposed requirement by the rail authority that another party (e.g., OT, WCS) assume liability for train accidents caused by collisions with livestock or wildlife resulting from the fence openings. OT plans a risk assessment exercise with the rail authority in June to evaluate the actual risk of major accidents. As agreed in the Biodiversity Workshop in January of this year, OT's project to remove fencing along the TMR should continue, if not be expanded to include other rail lines as well engineered crossing solutions such as wildlife overpasses. OT is uniquely positioned in the country to facilitate this very significant action.

As agreed in the Biodiversity Workshop in January, measurement of success should focus on verification that a "significant" number of khulan (with a range being more appropriate than a precise number) are using wildlife crossings (fence openings or engineered passages) and utilizing habitat to the east of the TMR. This approach could also be used for other rail lines, as appropriate. OT will endeavor to develop a basis for determining what number of individuals is "significant", and also suggest a cost-effective means to verify success through monitoring. This will require an update of current monitoring thresholds. If passages are successful OT should also research how many individuals must be present on the eastern side of the TMR to ensure a viable if not functional population and integrate this as a threshold in the monitoring plan. This is especially relevant if there is a risk that passages will be closed in the future.

OT's anti-poaching program continues. The combination of ranger interventions and anti-poaching publicity can be assumed to have some effect. Monitoring of social media for the purchase-sale of poached animals and gunshot monitoring at watering holes may provide some indication of changes in poaching. Monitoring of vulture scavenging of carcasses may be added. However, as agreed at the Biodiversity Workshop in

January, the anti- poaching project should be categorized as an *additional conservation action* (ACA), rather than an offset, due to the lower perceived risk posed by poaching (khulan and gazelle populations have been increasing steadily since 2013) and the difficulty of quantifying measurable conservation gains attributable to the project. No new monitoring data was presented at the time of the audit.

4.9.2 Rangeland

OT has a requirement to offset several thousand hectares of rangeland lost to the mine's development. The original offset concept based on improving rangeland management via a sustainable cashmere commercial venture has proven inviable. **In the audit conducted in September of 2022, the IESC opened a Level III non-conformance and requested that OT develop a new rangeland offset. An early draft of an offset options analysis was presented at this audit. More work remains to finalize the analysis, but the early draft indicates that supporting protected area management may be a feasible alternative. This may assuage concern raised in the Biodiversity Workshop in January that rangeland offsetting in Mongolia may not be possible due to social and environmental factors. The IESC recommends that OT share the final options analysis with lenders by July 2024. *This remains a level III non-conformance.***

In addition to the offset, OT is actively rehabilitating rangeland that it has impacted. OT has initiated biological rehabilitation outside the mine lease. It has also established a well-functioning compost production facility to support rehabilitation planting and is conducting trials on the optimal blend of compost and soil during planting. Pilots are also underway on TSF rehabilitation, including experiments with a variety of soil cover options to manage for a deficit of topsoil for full site rehabilitation.

In the September 2023 audit, the IESC recommended that OT revisit its 2018 comparative study of rehabilitation methods (Bolgiv et al). It may be useful to develop and implement experiments that monitor control sites where only technical rehabilitation has been performed to determine how effective biological rehabilitation is relative to a "no intervention" scenario where natural processes, such as the introduction of windblown seeds, may be sufficient for natural regeneration of rangeland vegetation. Other experimental treatments could also be tried, for example placing/creating physical features on the ground to catch wind-blown seeds, rather than planting seedlings. It is important that the experimental design have adequate sample sizes based on a statistical power analysis (likely larger than the 2018 study). **The IESC requested that a study design be submitted for lender review by April 2024. OT has pushed out this date. The IESC requests that it be submitted by July 2024 to allow time for review and implementation this field season. It should detail the types of rehabilitation to be evaluated (including technical rehabilitation alone), statistical approach for evaluation, and the timeline for implementation. The IESC recommends that the study be completed before any major scaling up of current biological rehabilitation methods.** No new monitoring data was presented at the time of the audit.

4.9.3 Riparian Elms

Potential predicted negative impact to elm trees from the OT Undai River Diversion project has not occurred, and hydrologic monitoring indicates that the mechanism for that predicted impact is not present. Measured depth to groundwater values in the Undai River alluvial system have slightly increased since construction of the Diversion. This is likely due to the current bypassing of faults in the Undai River channel which previously "leaked" flow and resulted in loss from the system. OT has monitored and documented the elm tree status to date.

As agreed in the Biodiversity Workshop in January, OT will re-allocate elm monitoring resources to elm conservation and restoration, within and outside the Mine Lease Area. In addition, OT should also compensate for the limited impact on mature elm trees within the MLA. Conservation and restoration efforts should focus on protecting juvenile elms from grazing until they reach sufficient height to survive. **OT agreed to submit to Lenders a method statement for doing so by the May 2024 IESC audit, with a Notice of**

Change then submitted to establish the revised protocol for protection of elm trees in the OT area of influence. This remains to be done. The IESC requests this be submitted by July 2024.

4.9.4 Saxaul Forest

As agreed in the Biodiversity Workshop in January, the predicted indirect (induced) impact on saxaul trees (e.g., collection for fuelwood) is not likely, but there is also no viable approach for directly measuring whether impacts to saxaul have occurred or not. Continued direct monitoring of saxaul forests is therefore not needed, but measurement of domestic saxual wood use will continue to determine if demand for fuelwood increases in the future. This will be the updated in the BMEP. The direct impact of OT on saxaul forests did occur as predicted and there remains a residual impact of -15.5 quality-hectares. This will be compensated and monitored in the "100M tree program" and as part of the rangeland rehabilitation program. OT presented current work in saxual rehabilitation in small fenced lots to prevent browse by livestock.

4.9.5 Priority Plants

Four priority plant species (*Spongiocarpella grubovii, Amygdalus mongolica, Cistanche lanzhouensis and Zygophyllum potanini*) have Critical Habitat in the Mine Lease Area. OT staff continue to manage impacts on priority plants within the mining lease via a land use disturbance permit process. Approximately one-third of land disturbance requests require an action to conserve priority plants. To facilitate this process, OT has conducted surveys of the entire mining lease to map the locations of seven priority plant species. Recent surveys of the projected subsidence zone for the underground mine revealed the presence of an additional 87,676 individuals of seven species. Not all will be impacted. Definitive impacts will be experienced by <6,000 individuals in Panel 0, and for the rest only the land form will change. Among the plants in the subsidence zone are two new species for the priority plant list, *Chesneya mongolica* and *Lycium truncatum*.

OT has made progress on challenging aspects of priority plant conservation, including the propagation of *Spongiocarpella grubovii*. It is also running a successful nursery operation close to the site where these and other species are prepared for eventual transplanting in rehabilitation areas or translocation to other appropriate habitats. Once site requirements are better understood, translocation can be scaled up to meet OT's Net Gain requirement for this species.

Nevertheless, time-bound targets agreed with lenders are not being met. The IESC previously opened a non-conformance in 2018 for insufficient progress in mitigating impacts to priority plant species for which the project area is Critical Habitat. The IESC closed the non-conformance in 2020 based on the development of a Priority Plant Corrective Action Plan. However, commitments in the Priority Plants Corrective Action Plan are not being met and the IESC re-opened a new non-conformance. **The Priority Plant Corrective Action Plan commits to determining habitat requirements for priority plants, GIS mapping of transplanting areas for priority plants, determination of propagation methods for all priority plants, and research and determination of effective transplanting methods. OT has submitted an updated timeline for completion of these steps. A Notice of Change should be submitted and implementation should adhere to this new timeline. *This remains a level III non-conformance until tangible progress is made, in adherence with the timeline.***

4.9.6 Short-toed Snake Eagle

In 2023 monitoring detected eight short-toed snake eagle nests, five of which were successful. Six short-toed snake eagles have been tagged with GPS transmitters to monitor movements. This continues to be positive news from the three-year period when nests in the area had been inactive – the monitoring results

allay concerns about short-toed snake eagles no longer inhabiting the study area. No new information was available at the time of this audit.

4.9.7 Houbara bustard

As noted in previous audit reports, OT has fulfilled its commitments to lenders for this species. Impacts are compensated out-of-kind via an offset that reduces transmission line mortality for other bird species (esp. Saker Falcon). In addition, OT also promoted the passage of a national design standard for low-voltage transmission lines that will mitigate the risk of electrocution to birds for all new low-voltage transmission lines constructed in Mongolia.

No new information was available at the time of this audit.

4.9.8 Biodiversity Monitoring and Evaluation Plan Update

A series of changes in biodiversity monitoring were agreed in the Biodiversity Workshop in January, including for ephemeral lakes and pools, elm trees, granite outcrop floral community, saxaul trees, priority birds, priority plants, and rangeland. **The IESC recommends OT update the BMEP and issue a Notice of Change by August 2024.**

4.10 Recommendations

The IESC has the following conclusions and recommendations on the biodiversity program:

1. In the audit conducted in Q3 of 2022, the IESC opened a Level III non-conformance and requested that OT develop a new rangeland offset. An early draft of an offset options analysis was presented at this audit. More work remains to finalize the analysis, but the early draft indicates that supporting protected area management may be a feasible alternative. This may assuage concern raised in the Biodiversity Workshop in January that rangeland offsetting in Mongolia may not be possible due to social and environmental factors. The IESC recommends that OT share the final options analysis with lenders by July 2024. *This remains a level III non-conformance.*
2. The IESC requested that a study design for evaluating rehabilitation methods be submitted for lender review by April 2024. OT has pushed out this date. The IESC requests that it be submitted by July 2024 to allow time for review and implementation this field season. It should detail the types of rehabilitation to be evaluated (including technical rehabilitation alone), statistical approach for evaluation, and the timeline for implementation. The IESC recommends that the study be completed before any major scaling up of current biological rehabilitation methods.
3. OT agreed to submit to Lenders a method statement for elm conservation by the May 2024 IESC audit, with a Notice of Change then submitted to establish the revised protocol for protection of elm trees in the OT area of influence. This remains to be done. The IESC requests this be submitted by July 2024.
4. The Priority Plant Corrective Action Plan commits to determining habitat requirements for priority plants, GIS mapping of transplanting areas for priority plants, determination of propagation methods for all priority plants, and research and determination of effective transplanting methods. OT has submitted an updated timeline for completion of these steps and implementation should adhere to this new timeline. A Notice of Change should be submitted. *This remains a level II non-conformance until tangible progress is made, in adherence with the timeline.*
5. The IESC recommends OT update the BMEP and issue a Notice of Change by Q3 2024.

5 Social Performance

Social management plans guiding the work of the Communities and Social Performance (CSP) team are the Community Health, Safety and Security Management Plan (CHSSMP); Stakeholder Engagement Plan (SEP); Pasture and Livelihood Improvement Management Plan (PLIMP); and Resettlement Action Plan (RAP). The OT People and Organisation Team is responsible for the implementation of the Labour Management Plan and associated documentation, while the Contractor Engagement team is responsible for the Contractor Management Framework Procedure and supporting documents.

At the time of this audit, the In-migration Management Plan (IMP) first draft review had been conducted and was under review by CSP management, while the SEP was under development. The RAP review remains pending while the RAP Completion Audit is finalised. Tendering is underway for the Umnugobi aimag baseline study update, and the communities component of the OT railway feasibility study has been completed and is being reviewed by CSP management, with the railway project in full under discussion by senior OT leadership.

No major organizational changes have occurred in the CSP team since the previous monitoring visit; the GM Communities and Social Performance receives direct reports from the Senior Manager for Regional Development, the Manager for Community Assistance Partnership, Manager for Community Compliance and Governance, and the Principal Advisor Communities, a role which will conclude in Q4 2025. A new compliance officer has been engaged since the previous IESC audit,

5.1 Labour and Working Conditions

The OT Investment Agreement specifies requirements for employment of Mongolian nationals. The Labour MP[15] applies to all OT activities including contractors. Implementation by contractors is addressed in the Contractor Management Framework[16]. Issues addressed through the Labour MP include:

- targets for employment of Mongolian nationals;
- ensuring access to training for South Gobi residents;
- recruitment processes;
- support of women;
- rosters/working hours;
- employment centres and recruitment officers;
- salary benchmarking;
- retrenchment and demobilisation; and
- maintaining accommodation standards.

A range of other social issues that are drawn from ESIA commitments are presented in labour-related MPs including: targets for national, regional and local content of Project procurement (In-migration MP); requirements of contractors to meet HR/HSE standards (Contractor Management Framework); and Identification of Mongolian suppliers and service providers available regionally and locally (Supplier development policy

[15] HR-10-PLN-0001-E, v.1.5
[16] OT-07-PRC-0001-E, v.2.0

5.1.1 Recruitment and Manpower

As at the end of Q4 2023, 97.2% of the workforce was Mongolian, exceeding the 90:10 ratio. Employment from Umnugobi was well on track at the end of Q1 2024, at 24.62% of site-based workforce against a 25% target. As at the end of 2023, the Labour management KPIs were all exceeded, as shown in Table 5-1.

Table 5-1 Labour Management KPIs for Calendar Year 2023

Key Milestone	KPIs	Performance
Overall, Oyu Tolgoi	National employees	21231
	Expatriate employees	1022
	National: Expatriate employees' ratio	**95.19% / 4.81%**
Not less than 90% of the Investor's employee will be citizen of Mongolia.	Total of Oyu Tolgoi LLC employees	4545
	• Nationals	4419 **(97.23%)**
	• Expatriates	126 **(2.77%)**
For mining and mining related work not less than 75 % of entities employees will be citizen of Mongolia	Subtotal of 75/25 Contractor Companies	9747
	• Nationals	9539 **(97.87%)**
	• Expatriates	208 **(2.13%)**
For construction work not less than 60 % of entities employees will be citizen of Mongolia	Subtotal of 60/40 Contractor Companies	6939
	• Nationals	6251 **(90.09%)**
	• Expatriates	688 **(9.91%)**

Talent Pipeline initiatives have been continuing, including: the school-to-job program, Education Days, South Gobi Youth Development Program, and Graduate Development Program. Trades training has continued, following the German Technical Vocational Education and Training qualification system with the national partner; 24 apprentices (five male and 19 female) were enrolled in 2023. Training was provided on the job to 124 new operators in 2023, including 63 new operators for the open pit area, 23 in the tailings area and 43 in the Concentrator area.

5.1.2 Management of Worker Relations

For calendar year 2024, through the end of April, there were 82 grievances reported through the worker grievance reporting system myVoice. Of these grievances 44 opened during this period and 70 closed

(which included cases from earlier periods). The average number of days to close a grievance is 141 days. OT noted that the introduction of the CareHub (Mongolian grievance management support for Mongolian workers) and increased advertising of MyVoice has resulted in increased reporting of issues.

The Business Conduct Office (BCO) provided data on the referred cases received in 2023 and the year to date, as shown in Table 5-2. Personnel issues remain most reported; of 180 cases reported in 2023, 132 were related to personnel issues. Of cases received in 2023, the BCO investigated and closed 57 cases; 59% of those were substantiated cases. The reporter was anonymous in 40% of the 180 cases received in 2023. Rates in 2024 year to date data is comparable thus far.

Table 5-2 Labour Management KPIs for Calendar Year 2023

Description	2023	2024 through May 14
Reports received	180	91
Issue types *(from all reports received)*	Personnel: 132 Business Integrity: 36 Other: 12	Personnel: 59 Business Integrity: 19 Other: 13
Substantiation rate in % *(of reports investigated/closed by BCO, i.e. in-scope)*	59% (from 57 in-scope cases)	27% (from 34 in-scope cases)
Anonymity rate *(reporter remains anonymous)*	40%	45%

OT has been making adjustments to its implementation of the Average Salary Rate (ASR), as is provided for under the 2021 revision of the Labour Law of Mongolia and subsequent Q1 2022 amendment, to combat substantial rises in labour costs and promote equity across employees. The Q1 2022 amendment allows for employers to determine which allowances and benefits can be included in the ASR. Following pushback from the Trade Union (OTTUC), a joint working group was established in March 24 and held ~20 meetings to determine a way forward in implementing the ASR, with an agreement ultimately concluded and communicated to employees in Apr-24. Agreement terms include, inter alia: base salary increases for all employees; health and accident insurance coverage for 2 family members; increases in Meal and Transportation allowances; establishment of a joint working group to review engineering/technical personnel career framework; and overtime and night shift allowances calculation update.

The IESC notes that a new trade union has also emerged through the negotiations and communications processes, the Local Employees' Trade Union (LETU), which seeks to better represent the interests of local employees through a new Collective Agreement. The LETU has not been formally registered (with charter, election procedures, membership, etc) at the Registration Office in Umnugobi. Without the registration and, as there is an existing TU agreement in place between OT LLC and the OTTUC, the LETU is not legally able to open discussions about drafting a new Collective Agreement.

Lastly, strike action was initiated at OT UG, following notification by the LETU on May 13, 2024 that there would be a stand down the following morning; the standdown was in effect for three days. This was halted after agreeing to have further discussions between the OTTUC, LETU and OT LLC about the Collective Agreement. The first discussion on this matter is due to occur in early June, noting that any action will need to be in line with legal requirements, which will require, inter alia, agreement by both the OTTUC and LETU on a single Collective Agreement proposal to OTLLC.

The IESC notes that, around the time of the strike, OT Employee Relations engaged with workers where OT employees have made false claims to the media, which is in breach of their employment contracts with OT LLC.

Interviews with a sample of workers during this audit highlighted some common themes. These included camp accommodation issues (e.g. regularly being moved between rooms due to pressure on available accommodation); salary differences and sensitivities between different categories of workers; pay gaps between OT LLC employees and contractors; high turnover (i.e., departures from OT abroad after gaining some experience) and resulting lack of continuity in some teams. Positive changes cited by interviewees included extensions to health insurance as a result of the new agreement with the trade union; introduction of the retirement savings fund, and salary increases for different bands of workers (e.g., higher salaries for those roles with higher responsibilities). Interviewees were consistent in recognizing OT's focus on safety and training.

The Everyday Respect Program pillars are reported as on track for Q2/24 against annual plans. The 2024 Everyday Respect Progress Review is conducted by EB&Co between April – May this year for all of RT with the 3 different ways for receiving feedbacks from people through survey platform written statement submission and group listening sessions in Mongolian language. As part of the Progress Review framework and there were 7 focus group sessions for Mongolia, 1000+ people participated in the global survey from Mongolia and planning for Elizabeth Broderick and her team visit to Mongolia are underway. Also, Crucial Conversation Leadership pilot training completed in Q1 2024, with rollout planned for the remaining manager cohort into the remainder of 2024. Everyday Respect training for contractors is being implemented, with the Contractor workforce training completion rate at 85% (11,000+ participants). All employee training rate for the program is at 98%. The IESC notes that action on a Facilities Improvement Roadmap/Options analysis for Camp accommodations and Ulaanbaatar Offices (OT 2024 Integrated Plan) is in the annual plan and accommodation improvements are described as being implemented. See also Section 5.1.3.

Since the previous IESC audit, there have been no legal changes in Mongolia to affect employment.

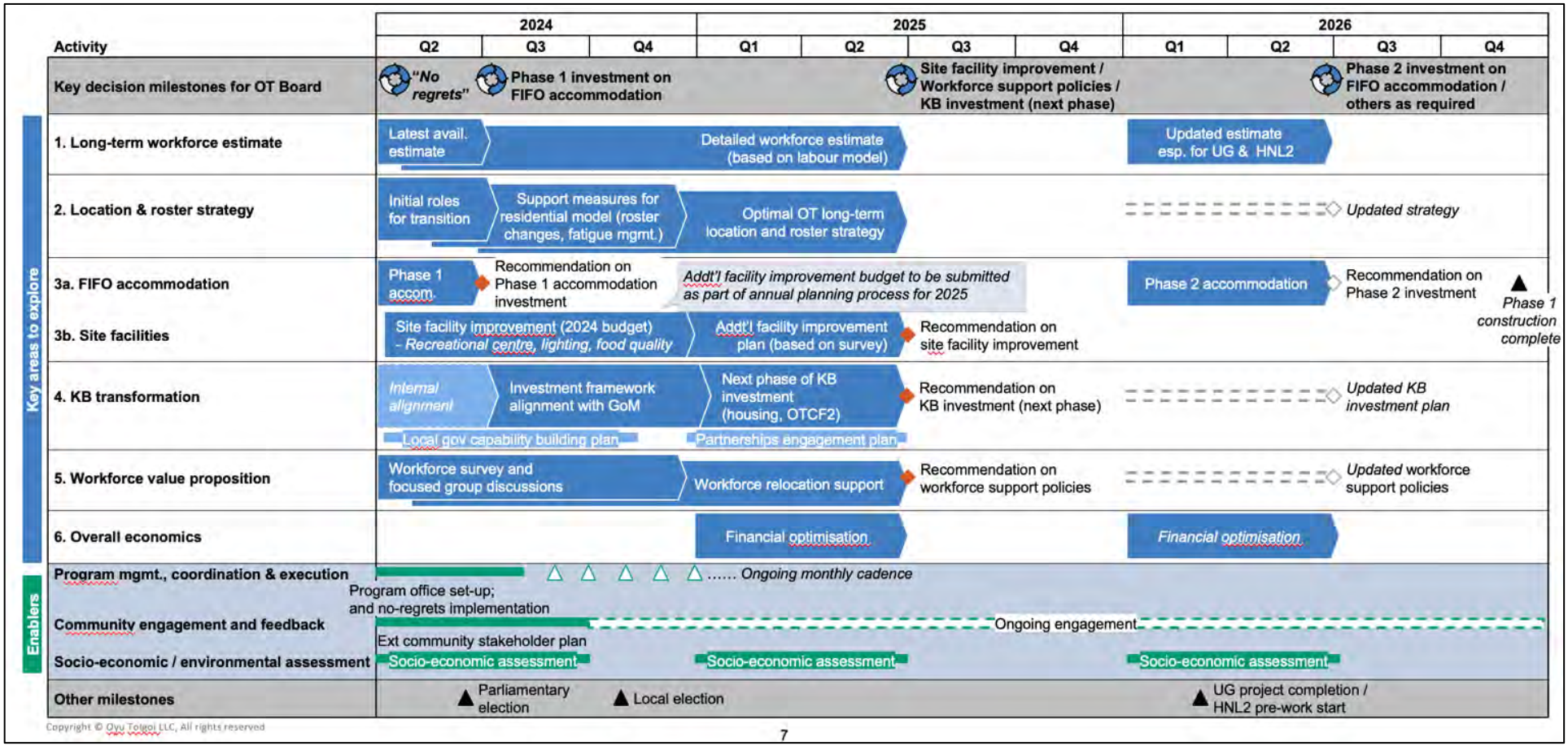
5.1.3 Workers Accommodation

OT has set a new target for its workforce accommodation under the Regional Economic Development strategy (see also Section 5.4), and as part of an emerging residential workforce/workforce accommodation strategy, is aiming to reach 50% residential workforce in KB by 2035. A Town Transformation and Employee Accommodation Project Taskforce was formed, which has begun working on integrated location and roster strategies and employee value proposition. This flags the need for alignment of the KB masterplan with workforce needs and a roster strategy that encourages KB as the optimal residential location, while also relieving immediate FIFO accommodation shortages. It was described that the OT Catalyst Fund and OT will continue to focus on FIFO accommodation, long term housing solutions, planned social and hard infrastructure projects.

The previous IESC audit identified that a Strategic Plan on worker accommodation was anticipated in Q4 2023, which would define future employee accommodation requirements as well as staged demolition of old accommodation. A market engagement plan has been prepared, which begins to map out the key questions around immediate FIFO worker accommodation, permanent FIFO worker accommodation, and KB housing for residential workers.

A draft chart was shared during the audit describing the shift to residential accommodation (see Figure 5-1). This describes phase 1 investment into FIFO accommodation from Q3 2024, in parallel with socio-economic and environmental assessment.

Figure 5-1 Town Transformation and Employee Accommodation Project Taskforce Plan 2024



The IESC observes that the FIFO worker accommodation timelines need to consider whether any offsite worker accommodation is preferred. This is especially relevant to the worker accommodation demands that OT can anticipate during a mid-year 2024 shutdown. The Management of Change procedure should be observed; OT must ensure that it can demonstrate that potential E&S risks have been fully considered, assessed and the mitigation hierarchy applied in preparing for any offsite, short-term accommodation as well as a long-term Worker Accommodation Strategy. Should any offsite accommodation be constructed, the IESC highlights the ESAP item "Worker Housing Development", which specifies that any offsite worker housing requires preparation of an ESIA for review and approval by Lenders. It also recognizes that impacts to herder wells from water demand of worker accommodation be reflected in such an ESIA. The existing non-conformance on worker accommodation remains open, pending preparation of a long-term worker housing strategy that incorporates E&S considerations.

5.2 Resettlement and Livelihood Restoration

The OT Resettlement Action Plan (RAP) guides resettlement, compensation and livelihoods improvement. The RAP covers both physical (10 households signed off Resettlement Agreement(s) in 2004) and economical displacement (92 households signed off Compensation Agreement in 2011). Discussion regarding the Cooperation Agreement and other partnerships has moved to Section 5.4.

5.2.1 Economically Displaced Herders

As part of the IESC audit, an interview was held with the consultant team conducting the RAP Completion Audit. The OT and RT Area of Expertise teams were reviewing the final report at that time, thus the non-conformance on this item remains open. The consultant team described the methodology applied with key informant interviews, focus group discussions and household surveys, and verification against existing studies, contracts and other data sources. The Audit assessed completion of mitigation measures, compliance with commitments, numbers of households compensated, and livelihoods restored. Draft findings presented stated that OT has been compliant with national and international commitments and that mitigation measures had been implemented. It was also stated that the livelihoods of all but one household were restored. Options for ongoing support to this household were discussed during the call and are expected to be presented in the final report. Additionally, recommendations have been drafted around closing out the agreements with the 11 households supported under tailored Household Livelihood Improvement Plans (HLIPs), strengthening the grievance mechanism to ensure timely close out of issues and clarity where TPC is providing advisory support and the perceived efficacy of livelihood restoration effort. The discussion included the proposed approach to disclosure of the final report; the IESC supports that disclosure should also include discussion on OT's approach to communal support to herders and ongoing Sustainable Livelihood Support projects, as well as the RAP exit strategy. The IESC anticipates the opportunity to review the RAP Completion Audit, including corrective actions, currently anticipated for the end of Q3 2024, and thereafter, anticipated closure of the RAP with any final adjustments.

OT additionally provided information regarding the resettlement of an individual herder who volunteered to be physically resettled as a result of dust, noise and loss of pasture due to the Link Road (connecting OT with the TT coal road), as well as water well location on the other side of the road to his house. This individual agreement is provided for under the current RAP. A brief RAP has been prepared, reflective of the principles described in the current RAP. In this particular case, the household has moved twice, both times due to Link Road impacts. This relocation was delayed due to COVID-19, and the household has determined to move to a site of his own selection approximately 60km distant. The Relocation Agreement Terms include: compensation package, winter shelter certification, current livelihood status and agreement for a closure audit at the 5th year of the agreement. The closure audit is to assess livelihoods status against that at the time of pre-relocation. The Agreement is co-signed by the herder, the KB soum Governor and OT CEO. At

the time of the audit, the household had confirmed the new location; the IESC anticipates an update at the next audit to assess implementation against the household-level RAP.

Further to the previous IESC audit noting the ESIA process relating to expansion of the MLA, OT stated that resettlement of the two businesses near the north gate is not currently progressing. The IESC anticipates that the imminent RAP revision should consider this eventuality, alongside the approach for any future resettlement and/or displacement.

Sustainable livelihoods projects (SLPs) are continuing, with the participation of 79 households. The IESC notes challenges in the breeding projects in particular due to ongoing drought, as well as the lessons learned across established projects. OT is commended for consulting with herder households and commencing exit strategy discussions with 4 of the SLPs (Agrobusiness, sewing business, Angus cattle breeding, and Gaviluud sheep breeding projects), which commenced in 2018 and have been supported through implementation of 5-year Strategies, regular engagement and monitoring, and technical capacity building support from local NGO, Development Solutions. Training in Q4 2023 focussed on issues faced that the projects may anticipate in ongoing business, such as business planning, cost estimation, shareholder rights and duties.

Implementation is ongoing for the two newer Projects that commenced in 2023. The six households engaged in the Pig Farming project now have 26 pigs and are receiving fodder and technical consultancy support. The 11 households engaged in the Herder Services project received the equipment (crane, excavator, loader, etc) in Q4 2023, and have since commenced making these items available for rent. Support to this group includes advisory to prepare employment agreements, shareholder procedures and job descriptions.

Four new projects are being initiated, engaging with 12 households, to develop projects on: an ecohotel, vegetable growing, milk factory and apple trees. The IESC anticipates an update at the next audit on the results of negotiations with the 12 participating households. The IESC also anticipates that SLPs will in future will be covered under the Regional Economic Development strategy.

5.2.2 Vulnerable People

The Khanbogd soum Government administration's Livelihood Support Committee identified 20 vulnerable households to receive support for 2024. There have been no RAP households in this list since 2020. Support to the households to date this year has included soft skills for children of vulnerable households, and Tsagaan Sar gifts for 15 of the households.

OT's contractor Orica has commenced support to children with disabilities, with support and coordination from OT's CSP team.

5.3 Stakeholder Engagement

Community engagement is the responsibility of the Communities and Social Performance team delivered under the Stakeholder Engagement Plan, while the External Affairs and Communications team manage national government and other national-level stakeholder engagement. The cross-functional SEP has cross-linkages to almost all other OESMPs. The CSP team has roles working at OT site, Khanbogd, Dalanzadgad and Ulaanbaatar.

5.3.1 Engagement and Information Disclosure

Since the previous Q3 2023 Audit there were 230 engagements recorded with 582 stakeholders, predominantly conducted in face-to-face meetings (Figure 5-2). OT's self-assessed data on attitude changes (Figure 5-3) shows an increase in positive/decrease in neutral attitudes toward the project from the

previous quarter, while negative attitudes have slightly decreased from 3 to 2%. CSP has internally assessed that attitudes are at 67% positive towards OT, against a target of 75%.

Figure 5-2 OT Engagement Numbers and Format Sep 2023 – May 2024

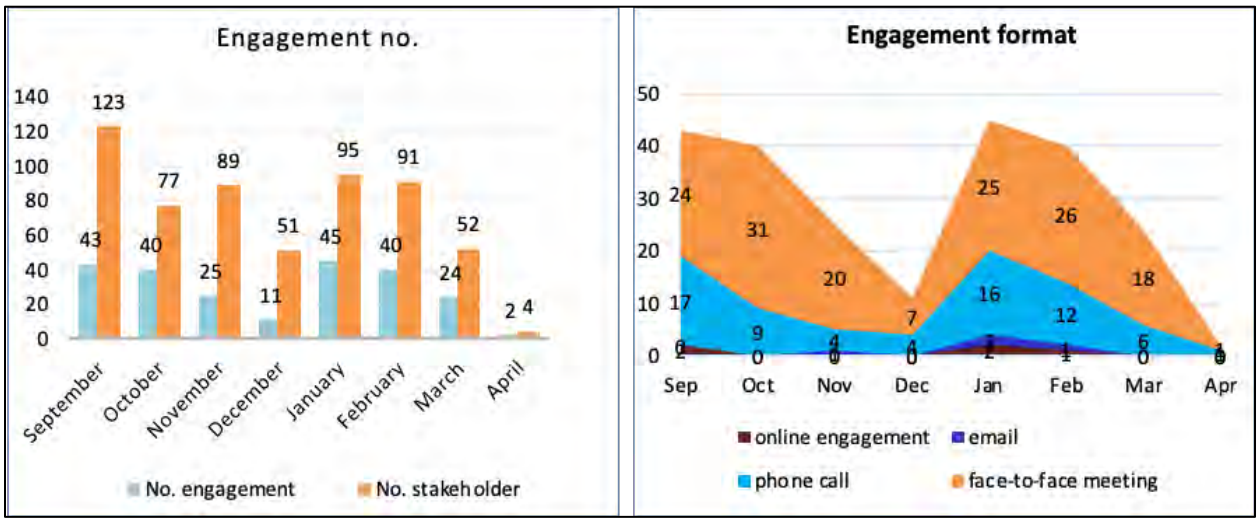
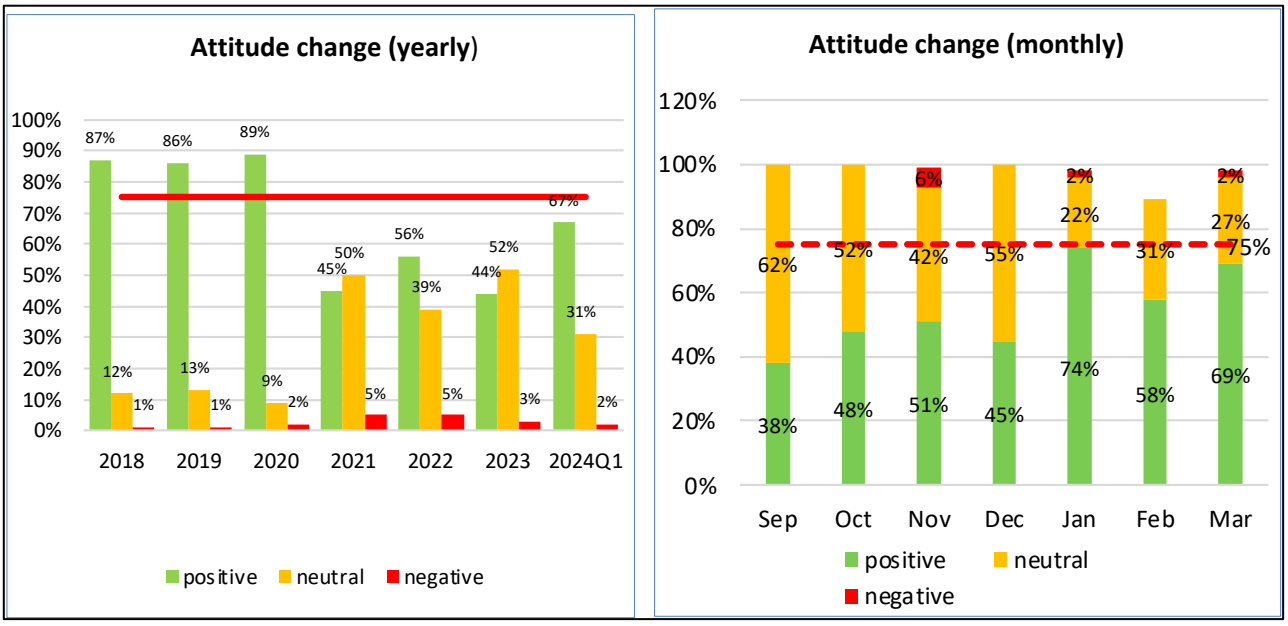


Figure 5-3 Stakeholder Attitude Changes 2018 - Current



Twelve public events reaching over 3,600 stakeholders have been held, primarily the Open Day (reaching 46% of those stakeholders) and through fodder donation (19%). The KB Open Day and Town Hall attracted 1,400 people, which was larger than the DZ event, and almost 80% of stakeholders reported that their questions had been satisfactorily answered. Engagements have additionally included: the 3 different *soum* camel festivals, Tsagaan Sar and Women's Day celebrations and Town Hall meetings. The key topics of engagement include: water management (groundwater resource use for mining, and delays in the national government's surface water 'Blue Horse' project); opportunities in local employment and procurement; and

Catalyst Fund-financed projects. KB population[17], dirt road impacts, land permits and pasture loss are also topics of interest.

The CSP team continues to engage across a range of stakeholders and methodologies. CSP attends the bagh meetings (current round is during May), which includes a segment dedicated to hearing and sharing all community matters (not only about OT). The IESC recognizes that CSP has introduced changes to its engagement approach, given that 60-70% of the KB soum population live in the soum centre. While bagh meetings are attended by and are of most interest to herders, in addition to Quarterly Town Hall meetings, other specific engagement has been introduced to focus on town centre issues, for example, a women's leadership discussion (held Mar-24).

Project-specific engagement: TSF

Project-specific engagements also continued since the previous audit, including on the ESIA for the UG Subsidence zone (to be reviewed separately by the IESC); link road and railway (on hold); and regarding the TSF environmental incident.

Engagement by CSP on the TSF environmental incident with key stakeholders, including the aimag, soum, TPC, CSOs and downstream herders, is planned to continue at least throughout 2024. The TSF SEP describes regular meetings planned for each quarter to address stakeholder's identified concerns and to provide updates, informed by the Remedial Action Plan described in Section 4.2.6 and has included, for example, Cell # 2 construction design, herder participation in TSF monitoring, establishing risk zones for downstream herders and TSF dam breach risk preparedness. Thorough engagement through face-to-face meetings (site visits including by TPC and CSOs, Town Halls, the KB Water Workshop in April, individual HH visits) has been supported by information disclosure through the community newspaper, PEM results disclosure on the Munkh Nogoon Galba website[18] and a brochure. The IESC notes that over 100 people were present at the KB Water Workshop, which was livestreamed to over 5,700 others. Key concerns from the community included whether the seepage had been contained and what the lab results were. Owners/users of the 15 winter shelters downstream of the TSF continue to be verified and engaged; five households are living at the winter shelters.

Community perception monitoring

The consultancy to deliver community perception monitoring (CPM) results for OT has now been completed by Voconiq, which included surveying 559 people across partner soums. Survey participants were: 75% were long term residents (10+ years), 30% were herders, 13% were business owners, 16% worked for OT or a contractor. Trust was examined in terms of: procedural fairness, regulation, economic benefits and distributional fairness, while acceptance was informed by trust plus environmental impacts, and overall provides a proxy for the company's social performance. OT will be sharing the survey results with local stakeholders in Q2/Q3, and thereafter will be available for distribution including through future IESC reports.

OT is now one of two RT pilot sites to use the 'Local Voices' method for CPM, and noted the methodology as a useful tool for tracking trust and acceptance, which generated high interest from participants. That the survey was being conducted with an independent third party was appreciated by community members. The IESC recognizes this as a useful supplement to the CSP team's internal assessment of perceptions of the stakeholders with whom it directly conducts engagement. Looking forward, OT intends to repeat the CPM survey in Q4 2024 for ongoing comparison against baseline/anchor survey results and to inform alignment with CSP plans.

[17] If the KB soum population reaches 10,000 individuals, central government has committed to increasing the soum budget.
[18] www.galba.mn

5.3.2 Community Grievances

The grievance management process for receiving and resolving community grievances remains robust. In the period October 2023 to May 2024, seven complaints have been received from the community regarding environment, procurement and resettlement. Six complaints have been closed and one is in progress of resolution. Additionally, 54 requests have been received, 43 of which have been completed and 11 remain in progress.

One Class III risk level, significant environmental complaint has been received; this was lodged by 33 herders regarding the unsafe conditions of the Manlai Road. The complainants assert that this was due to poor maintenance, generating dust and resulting in garbage on the roadside. The complaint has been reviewed and finalising an option to holistically consider current and future potential risks; at the time of the audit, implementation of the resolution was in progress.

Three Class II risk level complaints have been closed, which related to employment (for which closure was achieved by referral to the OT Labour Dispute Resolution Committee), environment (road dust suppression carried out) and resettlement (participation in PEM water monitoring program and engagement in Sustainable Livelihoods Program). One incident was recorded and closed.

5.3.3 Tripartite Council

The TPC is operating under the TPC Agreement (2017-2024) and remains intensely active. The TPC has finalized and disclosed its Annual Report for 2023 and Annual Plan for 2024. Since the previous IESC audit, the TPC has met four times, the Management Unit 7 times, and sub-working groups twice. Active working groups are developing the umbrella Herder Cooperative for KB and conducting the fodder plantation trial. TPC members also attended the KB Water workshop, 4 bagh meetings, meetings with water and agricultural stakeholders and participated in capacity building training.

The independent audit of the Herder Complaints Resolution Agreements (HCRAs) has been completed. Following three reviews and subsequent deliberations, the TPC jointly agreed that the audit was unacceptable and that the audit is to be rejected. OT and TPC plan to combine the HCRA and Governance Effectiveness audits in Q 2025. The IESC recognizes this is a disappointing result, given TPC members' expectations on being able to agree a way of recognizing progress and closure of various Agreement items. Noting that the TPC Elected Herder Team (EHT) will be holding its elections for new herder representatives in May 2024, the dual audit is to be conducted in Q1 2025 such that the new EHT can work to disclose the results with herders.

The communal compensation projects are, commendably, progressing. Specifically, the meat factory design drawing and construction work is in progress; the cattle feeding farm feasibility study is underway; and, the experimental fodder plantation has also commenced.

Other HCRA projects under implementation or completed include: creation of deep bore wells (eight established in 2023 and four planned for 2024); restoration of hand wells (81 restored from 2018 to 2023, eight completed in 2023 and eight planned for 2024); and solar panel installation (20 planned in 2023 and implementation in progress, with a further eight planned for 2024). Given the various water improvement projects that have been implemented over a number of years, TPC has agreed to conduct a review of these projects in 2024. The review will seek to make recommendations on which water improvement works should be carried out in future. Tendering is to be conducted by OT with TPC providing both feedback on the scope of work and participation in a joint fact-finding team. The IESC notes an overall timeframe for completion of HCRAs and water improvement projects will be over the coming three years.

5.3.4 Participatory Environmental Monitoring

Munkh Nogoon Galba NGO continues to implement the OT Participatory Environmental Monitoring (PEM) program. There has been an increase in the number of participant herders since the previous IESC audit, up from 115 to 121 participants, conducting 4 types of monitoring across 176 points. The main reason for this increase is due to TSF monitoring. The types of monitoring, participant numbers, frequency and tools for monitoring are summarized in Table 5-3.

Table 5-3 Participatory Environmental Monitoring summary (May-24)

Monitoring	Type	Herders	Point	Time	Tools
Dust	Dust	2	9	10x monthly	DustTrak
Fauna	Fauna	17	17	Monthly	GPS, Camera
	Brid		1	Quarterly	Bird watching
	Nocturnal animal's active research	4	4	Quarterly	GPS, Camera
	Avtomat camera		6	Monthly	Motion sensor
Water	Hand well	84	86	10x monthly	Meter
	Herders deep well	4	12	Monthly	Water level meter
	Data logger		4		
	Pipeline		2	Monthly	Water level meter
	Sum center		1	Monthly	Water level meter
	Springs		6		Dron, meter
	TSF		8		Laboratory test
Pasture	Pasture	8	18	Yearly	5 types
	Populus divers' folia	2	2	Monthly	Measurement
Total		121	176		

The NGO's plan for 2024 was agreed and a 3-year financing agreement confirmed at the most recent Board meeting in April. The IESC notes no major concerns from the TPC with the PEM 2023 Annual Report.

Monitoring highlights include identification of the KB soum centre dust hot-spot (high $PM_{2.5}$ and PM_{10} readings), due to both weather and vehicle traffic; this has led to prioritization of the KB soum centre road project construction (see s.5.4.2). Fauna monitoring included observation of 13 different types of migratory birds, automatic camera monitoring capturing 44 animals/4 species at six different watering points. *Populus diversifolia* tree monitoring has shown a survival rate of 84.6% in sample plot areas in the Urt River, while viability of poplars inside the MLA is 100%, reduced to 50% outside the MLA as a result of being eaten by livestock.

Water monitoring under PEM has been compared to OT data at 13 wells, and has shown an average variation of 0.38m, with an average fluctuation of 0.20m. The highest fluctuation was 0.88m at Khuuvur well, which is a low depth, poorly-maintained well serving a high number of livestock, 1,200m distant from KB soum centre. In addition to disclosure to all KB herders, PEM Water monitoring data was presented at the Guneesee Khairlaya water forum, which disclosed that movement of herders has caused some disruption to water measurements, and the current 3-year drought a slight decrease in water levels in hand wells. The fluctuation in deep wells was recorded as slightly lower than for hand-dug wells, with an average

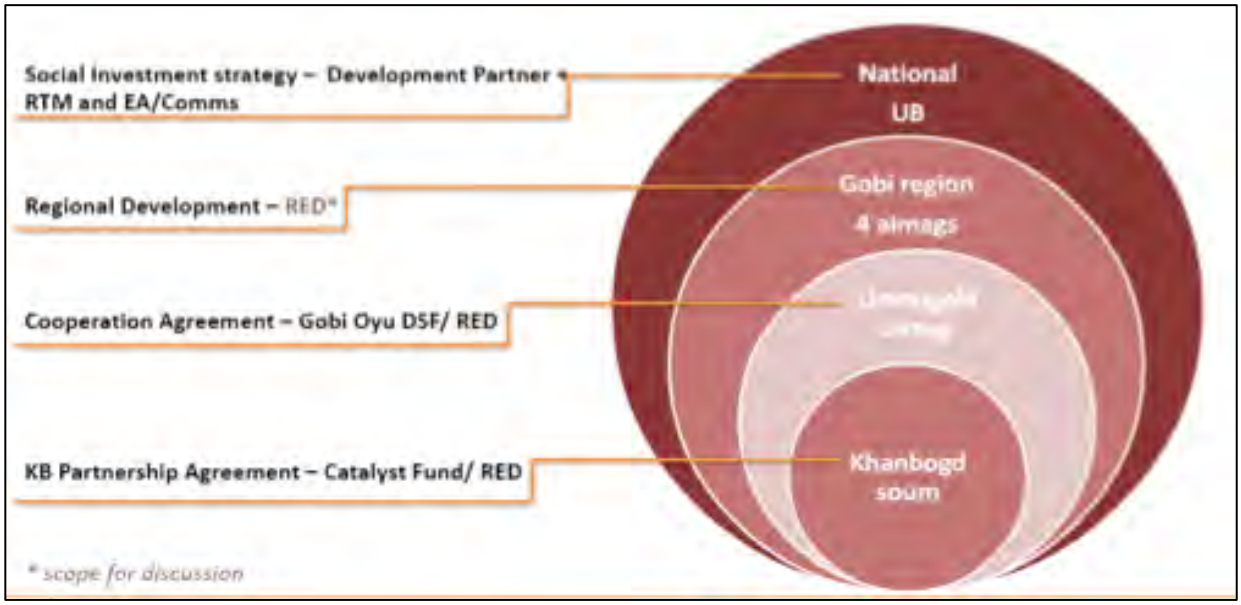
fluctuation of 0.19 m. DSF Quota funds are providing the finance for 4 pieces of automatic deep well water measuring equipment.

Further to the previous audit, monitoring continues in the TSF area with both plant and water monitoring being carried out. Plant monitoring has registered 25 species, and a 10m x 10m area is being established for a pilot bioremediation experiment. TSF water quality monitoring is carried out at: monitoring bores downstream of the TSF, open water from the seepage collection pond, the New Bor Ovoo spring, and herder hand dug wells. The seepage collection pond water was tested for 26 elements and showed that 8 heavy metals were exceeding MNS water standard; the monitoring bore OTMB22-94 located 60m outside of MLA has increased ions (EC) in water, and no impact/no change in herder hand dug well results. Information disclosure and engagement on these results is ongoing.

5.4 Regional and Community Development

OT's approach to Regional Economic Development (RED) is being updated to reflect the 'partnering for prosperity' business strategy and the associated objecives to 'partner and contribute to strong socio-economic development in Khanbogd and Umnugobi'. A RED team has been established to lead on this strategy, also presented in Figure 5-4, which describes RED within the context of other business strategy components. The IESC is reflecting this change and reporting on RED, agreements, in-migration management and PLIMP under this section of the report.

Figure 5-4 RED alignment within the OT Business Strategy (2024)



Following the interdepartmental regional development design workshop in Q2 2023, a Regional Development team within OT is now fully staffed, to develop and deliver a Regional Development Framework starting in 2024 and to seek alignment with external organisation and partnerships (Gobi Oyu DSF, KB Catalyst Fund, Local Employment and Local Procurement Working Groups). The introduction of the RED Strategy may amend some of the existing approaches, however a number of commitments remain as follows.

The Cooperation Agreement is the mechanism of engagement between OT and partner *soums*[19] was signed in April 2015, in compliance with the OT Investment Agreement and the Mongolian Minerals Law. OT is obliged under the Agreement to provide USD $5 million ($6.2 million for 2023) each year into the Gobi Oyu Development Support Fund, which is administered by a Relationship Committee and the Board of the Gobi Oyu Development Support Fund (DSF).

The Tripartite Council (TPC), between OT, Khanbogd *soum* authorities and Khanbogd *soum* herders, acts as a working group under the Cooperation Agreement's Relationship Committee, which has responsibility for managing commitments related to pastureland management and herder livelihood improvements. The Relationship Committee is responsible, in collaboration with Khanbogd herders, for prioritizing and recommending projects under the Cooperation Agreement that will contribute to sustainable livelihoods, via funding from the DSF, as well as all animal husbandry, herder cooperative development and related activities that are being implemented under the Pastureland and Livelihood Improvement Management Plan (PLIMP) to work together towards sustainable development in water, environment, pastureland management, cultural heritage, tourism, local business development and procurement.

The OT Catalyst Fund (CF) is guided by the KB Partnership Agreement, between the Ministry of Construction and Urban Development, Umnugobi Aimag, Khanbogd Soum and the OT Catalyst Fund for Khanbogd Development. The Partnership Agreement, signed January 2023, is in place for ten years and is the vehicle for securing support and cooperation between all parties to implement approved projects that align with the KB Masterplan. The Fund invests into 'hard'- and 'soft'-infrastructure and business development are determined and agreed by the Fund's Partnership Committee.

The regional and community development program is directly related to issues addressed in Operational Management Plans: in-migration management, addressed through the In-migration Management Plan[20] (IMP), the Labour Management Plan[21], the Community Health, Safety and Security MP (CHSSMP)[22] and Pastureland and Livelihood Improvement Management Plan (PLIMP)[23]. These plans are all designed to minimize unplanned influx, maximize regional and community development to help the host communities cope with population growth, and promote sustainable economic development.

5.4.1 Regional Economic Development

The OT Regional Economic Development (RED) team is now fully established and staffed.

The outline of current and future RED strategies is shown in Table 5-4 describing actions to be driven by OT and those driven by external parties with support from OT. The IESC notes that the future target of having 50% of OT's employees being residential in KB by 2035 is under consideration by the OT Board in June 2024. Implications for worker accommodation is described in Section 5.1.3. The IESC looks forward to further articulation of the RED strategy as this progresses and approved the Fund's policies and procedures. The Partnership Committee has approved the first 12 projects for implementation.

[19] Umnugobi aimag, and Khanbogd, Manlai, Bayan-Ovoo and Dalanzadgad soums
[20] In-migration Management Plan – Doc. No. OT-10-PLN-0007-E, v.2.1.
[21] Labour Management Plan – Doc. No. HR-10-PLN-0001-E, v.1.4.
[22] Community Health, Safety & Security Management Plan - Doc. No. OT-10-PLN-0001, v.1.2.
[23] Pastureland and Livelihood Improvement Management Plan – Doc. No. OT-10-PLN-0013-E, v.1.1

Table 5-4 RED Current Initiatives and Future Opportunities 2024

RED Strategies	OT Driven			Beyond OT	
	Shared infrastructure	**Local employment**	**Local procurement**	**Economic diversification**	**Enabling environment**
Current initiatives	Link road – connecting KB, DZ and UB Switchyard – alternative power resource to UM + region	LE target- 50%	LP target 40%	KB Agribusiness projects (cattle,) Slaughterhouse Tree nursery business – partner soums UNESCO/RTM partnership	KB light industry zone development
Future opportunities	OT Khanbumbat airport- commercial flight options	50% -Residential in KB by 2035	UM 23% (45-60%) KB 11% (30-40%) Moving services out of mine site	UM business development program – design Waste management	

5.4.2 Agreements

Oyu Tolgoi Catalyst Fund

In 2023, two compehensive study on Khanbogd soum's education and healthcare sectors were completed as well as delivered 2 pilot education programs. Khanbogd soum's hospital facade renovation was completed in 2023, which included insulation, facade renovation, parking and pedestrian construction. First phase of Khanbogd soum internal road (8km) and comprehensive renovation of Galba park (5 hectare) are currently under construction to be completed by Q3 2024. Other major pipeline projects are currently in plan.

Development Support Fund (DSF)

The DSF has invested in now 429 projects since commencement in 2015; this is 44 more since the previous IESC report. Of these 376 have been completed, 46 are in progress, and seven are at procurement/contracting stage.

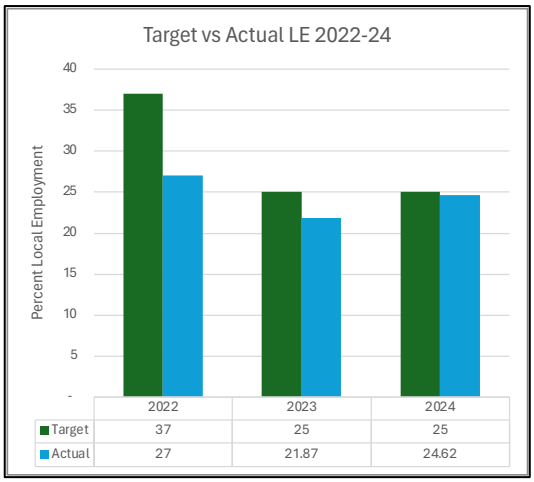
Consultant team IRIM conducted the DSF 5-year Strategy review, which included consultations on thematic areas with key stakeholders. A new Strategy was drafted; key changes to the Strategy include a wider focus for DSF to 'sustainable development, partnership and mutual trust', an update to the thematic areas covered under the Fund to reflect community needs and aspirations, and clear KPIs for performance measurement, with a priority focus on governance and management of the DSF. The IESC anticipates implementation of this new Strategy, following imminent Relationship Committee and DSF Board approvals.

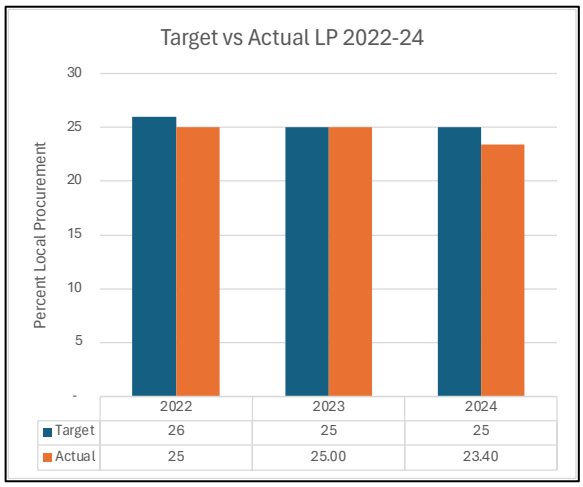
5.4.3 In-migration

In-migration management controls remain the two broad categories of (i) managed in-migration through recruitment and procurement practices; and (ii) contributing to social infrastructure and services to ensure adequate service for the evolving local population, inclusive of unplanned in-migration. The first draft of the updated In-migration MP has been completed and is under review of CSP management. The Local

Employment (LE) and Local Procurement (LP) working groups are both active. Performance of both aspects have been provided by OT at each IESC audit alongside long-term targets of: 70% local employment by 2030, and 40% local procurement by 2030. Figures since 2022 are shown in Figure 5-5.

Figure 5-5 Local Employment and Procurement Targets vs Performance (2022-2024 YTD)

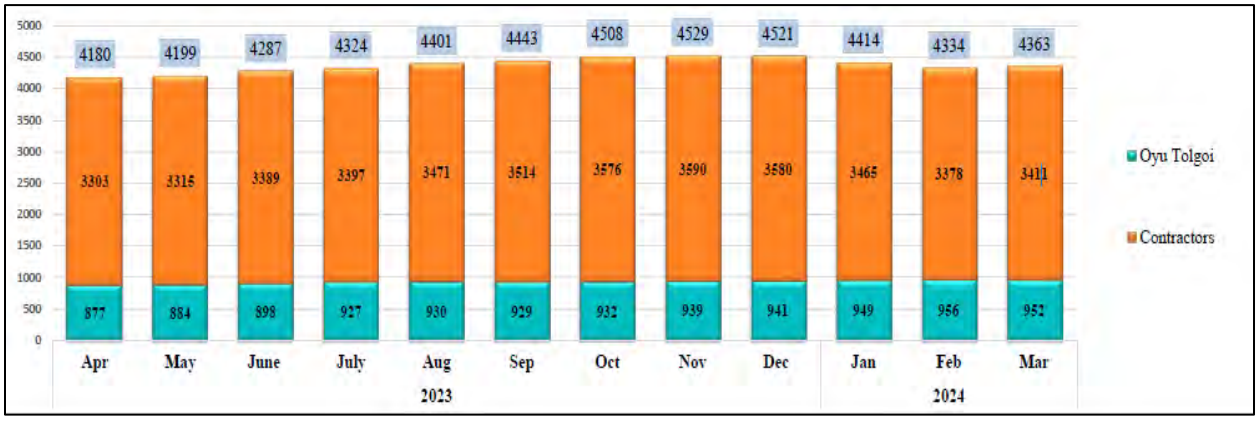




The LE Working Group has convened twice since the previous IESC audit, including to discuss successes of talent pipeline programs, progress of the labour market survey being conducted by Umnugovi province and making the residential address check process more efficient (i.e. validation that applicants are actually Umnugobi residents). The group is next scheduled to meet in May with additional participation of OT operational managers. Monthly soft skills training is conducted in Partner soums, with a focus on CV, cover letter and interview preparation. The Recruitment team additionally attended the DZ job fair in in April '24.

There are currently 4,363 OT LLC and Contractor employees from Umnugobi, which at 24.62 % of the total employee figures is the highest percentage achieved to date (note, not highest number), as shown in Figure 5-6.

Figure 5-6 Numbers of OT and Contractor employee from Umnugobi (Apr-23 to Mar-24)



OT has set a new target for its workforce accommodation, and as part of an emerging residential workforce/workforce accommodation strategy, is aiming to reach 50% residential workforce by 2035. The

IESC notes that the LE Working Group targets will need to be adjusted as this emerging strategy is finalised and approved. See also Section 5.1.3.

The LP Working Group continues to engage with local stakeholders on OT's procurement process and opportunities. The 'Invest-Gobi' investor forum was held in OT partner soums, and two information sessions have been held, one in each of DZ and KB, with a focus on registeration in the OT Procurement database and to disclose upcoming calls for local procurement. Further to the previous audit, OT has commenced a joint assessment to identify potential tenderers across 10 categories (e.g. site services provision, tree nursery businesses). Operational spend for OT is described in Table 5-5; the IESC notes that OT has exceeded its target for in-country spend performance.

Table 5-5 OT 2024 Operational Spend (local, regional, national and international) through April

Operations Spend as of April 30, 2024			
	Spend value	**Target**	**Performance**
Khanbogd	$ 72m	20%	18.6%
Umnugovi	$ 90.5m	25%	23.4%
National	$ 273.7m	75%	70.8%
Incountry	$ 352.8m	90%	91.3%
International Tier 3	$ 33.5m		8.7%

5.4.4 Pastureland and Livelihood Improvement

The PLIMP seeks to identify the supporting role of OT in contributing to pastureland management and livelihood improvement programs and initiatives of the soum Government Office in conjunction with local herders. Support is on-going for local agribusiness to contribute to local economic diversification and community food safety and security under the Local Agribusiness Support Strategy (LASS, 2018-25).

Since the previous IESC audit, the IESC notes that the umbrella/joint herder cooperative has now been registered and launched. The umbrella cooperative is made up 4 member cooperatives and has almost 300 members (i.e., 71% of all herders in KB are members). The IESC commends this step as one measure in securing the future managing entity of the KB slaughterhouse.

The KB slaughterhouse itself is now undergoing revision in the design drawings for the facility and support infrastructure; this construction contract is being managed by OT.

The KB soum animal husbandry development program is progressing, through engagement with the TPC on the delivery of various program commitments. These include preparation of initial feasibility studies on a cattle feeding farm, camel milk farm, and wool washing and processing facility.

Other actions include progress on animal health and veterinary services, winter preparedness support and training for local SMEs.

5.5 Community Health

Community health programs are supported under the operations CHSS MP as well as indirectly through DSF and wider partnership programs. The IESC notes the increase in smallpox cases since the previous audit, up from 11 to 24; treatment programs have been put in place. There is a rising trend in adolescent pregnancy. Partnership programs implemented since the last audit include 'Health tips for teens' training

held in KB soum, and OT is working with the Youth Development Centre on other data gathering and responses.

The repairs to the soum hospital façade financed under the Catalyst Fund have now been completed, and the strategy for health sector development in KB soum has now commenced.

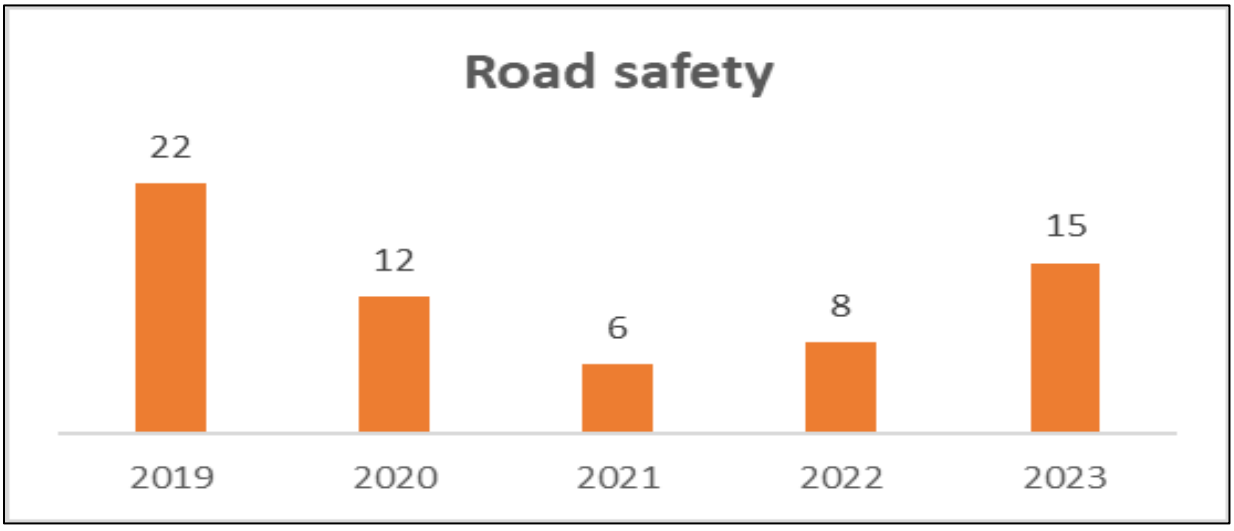
The Occupational Health Unit in the soum hospital has reached full staffing capacity (54 staff) and with it, increased the number of checks provided to KB-based workers and staff, with 875 employees receiving medical checks in Q1/24. Income generation from this unit has been reinvested into training on English language and soft skills, first aid and seasonal training by iSOS.

The IESC notes that 83 seats had been provided on OT's charter flights since the previous audit; see also Section 5.4 on regional development

5.6 Community Safety

Types of crime in KB remain similar, while numbers have increased by 28% since the same time last year, with 13% occurring in KB soum centre. While the number of cases of causing injury to others has decreased, road safety incidents in KB are increasing again following a decline over the Covid-19 period (see Figure 5-7). OT ERT has responded to local road traffic accidents (not involving OT), supporting the soum's Fire Rescue Unit.

Figure 5-7: Road safety incidents, Khanbogd soum, 2019-23



Surveys in the soum indicate an increase in domestic violence, and a joint working group with the Deputy Governor has been established to improve availability of services, including of psychologist support.

Incidence of online fraud continues, and programs to provide safety awareness for youth have been implemented, with a focus on tech safety and soft skills training for young people, parents/guardians and teachers.

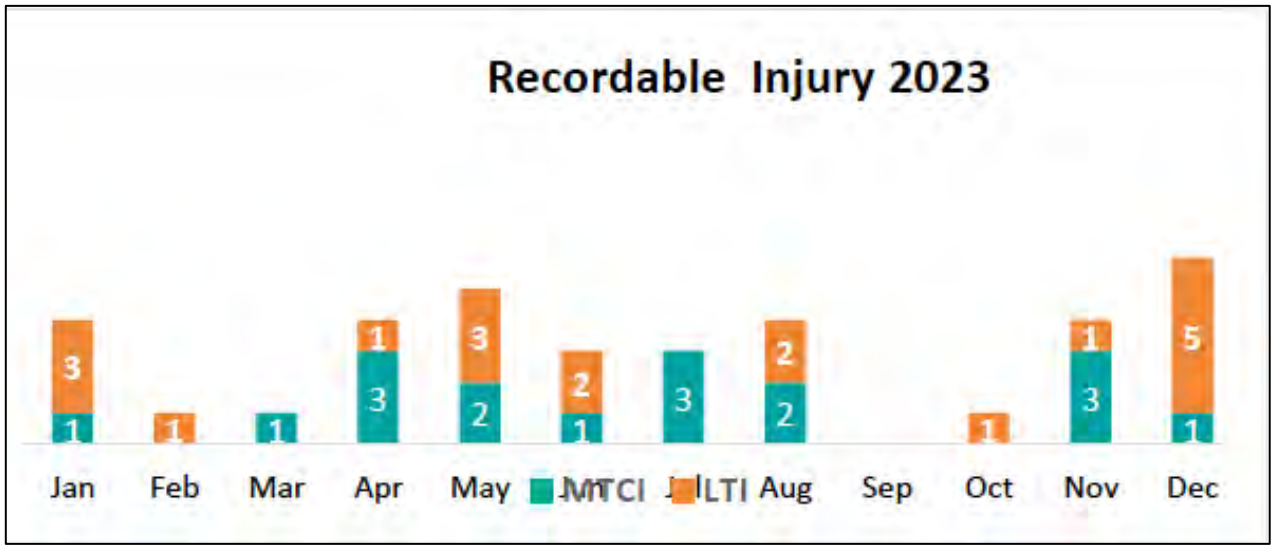
6 Worker Health and Safety

Occupational safety is managed under the OT HSESC Management System which is consistent with OHSAS 18001. General workplace health and safety is addressed in the ESMP and companion documents: Element 3 - Hazard and Risk Management; and Element 6 - Training, Competency and Awareness. These documents describe the framework for hazard and risk assessment, including tiered assessment levels to address a range of occupational and operational activities that support understanding of the hazards and controls. The ESMP was updated in 2021.

Contractors are required to have their own safety teams. Hazard identification and risk management processes are in place, and documented safe work procedures cover activities with significant risk. Assessments and inspections are performed to evaluate if objectives are being met and verify personnel training, certification and equipment. Internal audits are conducted to evaluate implementation of standards.

In 2023 and thus far in 2024 there have been no fatalities, although some serious and/or potentially fatal incidents have occurred. The All Injury Frequency Rate (AIFR) is a commonly used to metric to assess overall health and safety performance of an operation. For 2023 OT had a very strong AIFR of 0.20 per 200,000 hours worked which is within the internal target ratio of 0.23 per 200,000 hours worked. In Q1 of 2024 the AIFR was 0.11 per 200,000 hours worked with over 8.7 million hours total worked. There were a total of 19 Lost-Time Incidents (LTI's) in Year 2023, and 17 Medical Treatment Case Injuries (MTCI's), as shown on Figure 6-1.

Figure 6-1 Year 2023 Lost Time Incidents and Medical Attention Incidents



In 2023 there were approximately 1,145 major hazard Critical Control Verifications. OT is one of the safest performers across Rio Tinto operations. In 2023 OT executed a significant health exposure campaign. A total of 31 Similar Exposure Groups were sampled based on their health exposure profile. The most common exposure risks are dust and other airborne contaminants, as well as noise. From the campaigns a total of 43 dust and noise exposure reductions and improvements were identified. This SMM Program standardizes the management of safety and enables comparable evaluation and learning across the organization. In 2021 assessment for both the OT surface and underground projects resulted in meeting SMMR targets despite challenges of the pandemic.

In 2022 a total of 3,232 medical examinations were performed on staff and contractors. Common medical conditions include high blood pressure, high Body Mass Index, liver disease and diabetes. The 2023 Wellbeing Strategy focused more on respiratory and auditory risks. COVID-19 protocols at the OT site were removed beginning in late 2022.

As discussed in Section 4.2 Occupational Exposure Limits (OELs) for dust and silica levels are at action levels in the vicinity of the Coarse Ore Storage building. The IESC has identified a non-conformance related to this issue to ensure appropriate occupational health and safety conditions for shift employees, who typically work two week rotations.

7 Cultural Heritage

Cultural heritage management is set out in the OT Cultural Heritage Management Plan[24] (CHMP), which was last reviewed in 2021, and complementary Cultural Heritage Management System (CHMS) procedures including the Chance Find and Land Disturbance Procedures (OT-10-E9-PRC-0003-E). This applies to all OT activities including those of contractors. Overall responsibility for cultural heritage lies with the GM Communities.

OT reported no cultural heritage incidents since the previous audit. Site monitoring was conducted 4 times at 3 locations, with zero breaches detected. Since the previous audit, 35 land disturbance permits have been approved (28 on site and 7 offsite). This is an increase since previous audit, with the requirement to move infrastructure as part of the MPZ expansion. Engagement was conducted with 23 herders regarding drilling and roads, and zero journey management breaches have been recorded.

Numbers participating in community induction training has ramped up since the previous audit, with the start of the construction season. Training has been completed by 353 employees from across 11 companies, while the Chance Find induction was completed by 12 employees from the geology team.

Assessment is continuing of cultural heritage associated with the railway. Two archaeological sites have been located along the railway route, to be excavated by the Mongolian Academy of Sciences Institute of Archaeology. Cultural heritage items are to be received by the soum.

A study on water as a cultural resource is currently being tendered for completion by a consultant team. This study is the result of an action identified by the independent cultural heritage management audit, and will seek to deepen knowledge base on traditional water use and associated cultural heritage value within local communities in Umnugobi.

The 100-year anniversaries of a number of Umnugobi soums are to be celebrated in 2024. OT partner soums: KB, Manlai, Bayan-Ovoo, and Tsogtsetsii, will celebrate with a 3-day festival to be held in August. A document recognising local histories is to be published in recognition of the occasion.

24 Cultural Heritage Management Plan - Doc. No. OT-10-PLN-0002 v 1.4

8 Non-Conformance Table

This chapter tabulates a summary of non-conformances identified in this report based on the desktop review (Table 8 - 1). The table identifies non-conformances with respect to associated commitments as included in the ESIA, Operational Management Plans, the ESAP, and internal procedures which altogether define how the OT operations manage applicable Lenders' Environmental and Social Standards. The categorization of non-conformances is based on the same non-conformance levels defined in the ESMP which also reflects the RT Health, Safety, Environment and Community (HSEC) Management System classification.

These include the following descriptions:

- **Class IV** – A critical non-conformance, materially inconsistent with the Project Standards or Management Plans, resulting in or reasonably likely to result in irreversible impacts to sensitive receptors or important resources or significant damage or irreversible harm or damage to an ecologically or socially sensitive resource or has the potential for an extreme health and safety incident;
- **Class III** – A material non-conformance, materially inconsistent with the Project Standards or Management Plans, that has not resulted in clearly identified impacts to sensitive receptors or important resources or material damage or irreversible harm or damage to an ecologically or socially sensitive resource or have the potential for an extreme health and safety incident, but it is reasonably likely to have such effects;
- **Class II** – A material non-conformance with the Project Standards or Management Plans, but not reasonably likely to result in impacts to sensitive receptors or important resources or material damage or irreversible harm or damage to an ecologically or socially sensitive resource or have the potential for an extreme health and safety incident;
- **Class I** – An incident not materially consistent with the Project Standards or Management Plans and not reasonably likely to present a threat to the environment, community or worker health and safety.

Each non-conformance identified in the table will require actions from OT and will be followed-up by the IESC in subsequent audits. The table includes a description of the finding, the level of non-conformance assigned, the reference to the Project commitments and/or relevant project document as well as recommendations for improvement based on collective experience and the expertise of the IESC. Please also note that non-conformances not sufficiently addressed, according to IESC opinion, could result in a level increase, independent from the actual material consequences due to the conditions, unless an explanation is provided to justify the decision to avoid any corrective action.

Overall, results of the present audit are as follows:

- no Class IV non-conformances have been identified;
- Three Class III non-conformances identified;
- Five Class II non-conformances identified; and
- One Class I non-conformances identified.

Figure 8-1 Non-Conformance Table

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2023 - current	Expansion of Mine License Area without NoC approval	ESMP 3.13 (Element 11) Management of Change	Open	II	**See Section 2**. The ESMP describes that Lender approval shall be obtained prior to activities requiring implementation of the Management of Change procedure. This includes activities that are of significant departure from the Project Description of the 2012 ESIA. The extension of the Mine License Area (MLA) north encompassing an additional 266 hectares is a departure from the 2012 Project Description, as is a redesign of the Dugat ephemeral river diversion. Both should be approved in advance with the Lenders through the Management of Change procedure. In Q3 2023 a Notice of Change was submitted to the Lenders, along with a supporting "Supplementary ESIA", to correspond with the existing 2012 OT Mine ESIA. The Supplementary ESIA was then reviewed by the both the Lenders and IESC with a formal response to the NoC provided to OT in Q4 2023. This feedback was accepted by OT, who then worked with their third-party consultant to revise the Supplementary ESIA. The revised ESIA was just recently completed in Q2 of 2024, and will be reviewed by the Lenders and IESC immediately following issuance of this Audit Report.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2023 - current	Closure Plan not updated	ESAP Item #4	Open	II	**See Section 3.3**. The current version of the Oyu Tolgoi Closure Plan was last updated in 2017 (AMEC). A revision is required to ensure the Closure Plan aligns with 2019 updates to *Mongolia National Regulation on Mine Closure and Rehabilitation* and Rio Tinto Closure Standard updates from 2021. OT has previously prepared a Gap Assessment of the current Closure Plan with these requirements. OT has previously represented that the updated Closure Plan would become available in Q4 of 2022. In Q2 2023 OT reported that procurement has been delayed but that an external consultant had eventually been retained to update OT's Closure Plan referencing overall OT closure requirements as detailed above. For this Audit it has been reported that the draft Closure Plan would become available for review by Q4 2023; however this over-arching Closure Plan is still in development. An updated 2023 Feasibility Study is in late stages of finalization, and this will drive updated closure costs. In discussions during this Audit it was reported that current overall mine closure reserving costs at estimated at USD$1.8 billion as of 2024. Overall OT closure lability lies within Rio Tinto's over-arching closure provisioning. The current overall OT Closure Plan is outdated, although TSF Cell#1 is under progressive reclamation. This reclamation is being undertaken following a specific Oyu Tolgoi TSF Cell#1 Closure Plan, which is draft form. The IESC has reviewed this document and considers it fit for purpose, although some costing information is still pending. OT has represented that the TSF Cell#1 Closure Plan will be finalized by the next Audit in Q3 of 2024. The TSF Cell#1 Closure Plan covers a five year closure period for the embankments beginning in 2024 and extending into 2029. A 10 m NAF cover layer has already been emplaced as part of progressive reclamation. Rock mulch and other revegetation trials are in progress and will be observed during the Q3 2024 site visit. TSF Cell#1 will be closed with a final top platform once no longer needed for emergency capacity.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q2 2022 – current	Environmental Incident causing potential impacts to water quality outside of the Mine License Area	WRMP WRm-02	Open	II	**See Section 4.2.6** In November 2021 OT identified an Environmental Incident at the TSF related to control of seepage from TSF Cell#1. Follow-on monitoring has identified migration of seepage beyond the MLA (i.e., outside of the OT fence line). A Detailed Water Review was held prior to this Audit. A short-term and long-term path forward were identified to mitigate existing impacts, and a formalized Remedial Action Plan (RAP) has been developed to further investigate and mitigate potential impacts from seepage of TSF Cell#1 to the east and beyond the Mine License Area (MLA) boundary. This RAP was finalized in Q4 2023. The status of implementation of the RAP is detailed in this Audit Report, and information is also publicly disclosed by OT on their website: https://www.ot.mn/media/otnew/content/EN_Progress_Report_to_ET_VJY4kKA.pdf Additional monitoring bores have been installed down gradient of the MLA, with potential seepage mapped at extending up to 300 m beyond the site boundary. OT has implemented a series of mitigations, including installation of a French drain trench down gradient of the cut-off dam to the east of the TSF Cell#1. The IESC is of the opinion that the RAP is in a satisfactory state of implementation given the limited ability to do field work over the winter of 2023 – 2024. More progress will be made over the summer 2024 season and details will be reported on in the next Audit Report.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q2 2021 – current	Shipment of hazardous materials offsite for contractor disposal is not anticipated in the ESIA	HWM 03, HWM 13	Open	III	**See Section 4.4.** Appropriate disposal of non-recyclable hazardous materials is a long-standing issue at the site. OT operates the only appropriately engineered Hazardous Waste Storage Facility in Mongolia. Use of this facility has been delayed indefinitely due to non-issuance of required domestic permits. This situation was described in detail in the prior Q2 and Q3 2023 Audit Reports. The IESC had previously recommended that full details of off-site hazardous waste disposal companies be provided to the Lenders prior to the delivery of these materials off of the OT site. There is a “Duty of Care” obligation to ensure that these facilities are in fact able to suitably manage all of the materials which they may receive. Potentially hazardous materials have been shipped to UB for disposal by licensed contractors. However the IESC reiterates this non-conformance and an NoC should be submitted to authorize the disposal of hazardous material in a different manner described in the 2012 ESIA.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q2 2024	Dust conditions at COS Building with Occupational Health and Safety Action Levels exceeded for particulates and silica	Air Quality Monitoring Plan, Section 7.2	Open	I	**See Section 4.5.1.** A Risk Assessment has identified exposure to respirable dust, including in particular silica, as a key concern in the vicinity of the Coarse Ore Storage building. Ambient air quality monitoring results are evaluated by OT relative to domestic regulation MNS 4990:2023 (Occupational Safety and Occupational Hygiene). Limited results do not show exceedances of applicable Occupational Exposure Limits (OELs), but are in some instances are above 50% of the OEL which is considered an action level. The IESC recommends an assessment of dust levels at and around the COS relative to World Health Organization Ambient Air Quality Guidelines, as contained in Table 1.1.1 of the World Bank Group's General EHS Guidelines. The objective of this assessment would be to ensure appropriate occupational health and safety conditions for shift employees, who typically work two week rotations. Excessively dusty conditions can be an occupational health and safety consideration at the OT site. This is considered a Level I non-conformance as there are action levels associated with the current levels of dust exposure to workers. The IESC has been informed that the Environment team is working with the Operations team on iniitiatves to reduce dust, with pre and post-monitoring planned to demonstrate effectiveness. It is also important to note that worker exposure to dust is sporadic with shift work and short-term projects.

Q3 2022 - current	OT is not making measurable progress in offsetting the loss of rangeland habitat caused by the mine footprint	Appendix 1: OT Biodiversity Strategy Appendix 4: Biodiversity Offsets Strategy (BOS)	Open	III	**See Section 4.9.2** The South Gobi Cashmere Project has been dropped as a biodiversity offset. An alternative offset is needed. In previous audits the IESC recommended the development of a new offset and theQ3 2022 audit registered a Level III non-conformance requiring that a new offset plan be presented by Q2 2023. OT stated it would tender a new design consultancy in the coming months. At this time, a new design has yet to be developed. OT expects to complete a feasibility study by Q1 2024 and will submit to lenders for review at that time. **The BOS states:** "*The aim of OT's biodiversity offsets strategy is: 'to achieve Net Positive Impact on biodiversity through the generation of gains in priority biodiversity features to offset residual project losses'. It is proposed to achieve this aim through a series of six objectives as summarised in the logical framework and detailed below: …, Improved rangeland management, …"* Rangeland is a natural habitat and supports priority biodiversity features in the landscape. BOS Section 4.3 Improved rangeland management describes the program and the committed outcomes of: • Reduced degradation of rangeland by livestock leading to improved habitat quality • Increased population of priority biodiversity features • Reduced disturbance to wild ungulates • Increased wild ungulate populations BOS Section 7.2 Socio-political risks and Section 7.3 Technical risks identify issues that have affected this program, such as difficulty in changing traditional herder culture and practices, inability to prevent non-participating herders from entering the area of intervention, and the effects of challenging climatic conditions such as periods of low precipitation. BOS Section 8 Recommendations includes a recommendation to exceed NPI targets by a sufficient margin to hedge for under-performance. **The NPI Workbook** (updated April 27, 2021) states: "As of the end of Q4 2020: 6410.5 ha [of rangeland] directly lost, which equates to 2435.99 QH (using Q=0.38: see Annex for how this was calculated) +

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
					unknown area around Khanbogd." The residual position, considering mitigation implemented to that date, was -2,251.65 QH. Currently the footprint of OT is expected to continue growing and is outpacing the rehabilitation and offset programs. In effect, the greatest biodiversity impact of this project is largely unmitigated at this time.

Q3 2022 - current	OT is not making measurable progress in offsetting the loss of rangeland habitat caused by the mine footprint	Appendix 1: OT Biodiversity Strategy Appendix 4: Biodiversity Offsets Strategy (BOS)	Open	III	**See Section 4.8** The South Gobi Cashmere Project has been dropped as a biodiversity offset. An alternative offset is needed. In previous audits the IESC recommended the development of a new offset and the Q3 2022 audit registered a Level III non-conformance requiring that a new offset plan be presented by Q2 2023. OT stated it would tender a new design consultancy in the coming months. At this time, a new design has yet to be developed. OT expects to complete a feasibility study by March 2024 and will submit to lenders for review at that time. The BOS describes that the aim of OT's biodiversity offsets strategy is "*to achieve Net Positive Impact on biodiversity through the generation of gains in priority biodiversity features to offset residual project losses*". It is proposed to achieve this aim through a series of six objectives as detailed below. Rangeland is that natural habitat and supports priority biodiversity features in the project area of influence. BOS Section 4.3 describes the rangeland management program and the committed outcomes of: • Reduced degradation of rangeland by livestock leading to improved habitat quality; • Increased population of priority biodiversity features; • Reduced disturbance to wild ungulates; and • Increased wild ungulate populations. BOS Section 7.2 Socio-political risks and Section 7.3 Technical risks identify issues that have affected this program, such as difficulty in changing traditional herder culture and practices, inability to prevent non-participating herders from entering the area of intervention, and the effects of challenging climatic conditions such as periods of low precipitation. BOS Section 8 Recommendations includes a recommendation to exceed NPI targets by a sufficient margin to hedge for under-performance. **The NPI Workbook** (updated April 27, 2021) states: "*As of the end of Q4 2020: 6410.5 ha [of rangeland] directly lost, which equates to 2435.99 QH (using Q=0.38: see Annex for how this was calculated) + unknown area around Khanbogd*." The residual position, considering mitigation implemented to that date, was -2,251.65 QH.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
					Currently the footprint of OT is expected to continue growing and is outpacing the rehabilitation and offset programs. In effect, the greatest biodiversity impact of this project is largely unmitigated at this time.
Q3 2023 - current	OT is not meeting time-bound commitments in the Priority Plant Corrective Action Plan.	Appendix 1: OT Biodiversity Strategy	Open	II	**See Section 4.9.5.** The IESC opened a non-conformance in 2018 for insufficient progress in mitigating impacts to plant species for which the project area is Critical Habitat. The IESC closed the non-conformance in 2020 based on the development of a Priority Plant Corrective Action Plan. However, time-bound commitments in that plan are not being met therefore the IESC is opening again a non-conformance. **The OT Biodiversity Strategy states** Oyu Tolgoi's goal is to have a net positive impact on biodiversity of the southern Gobi region. **The NPI Workbook** (updated April 27, 2021) shows 31,632 priority plants lost and a net position (lost plants minus propagated and re-planted) of 30,897 as of Q4 2020. Information presented by OT in the Sept. 2023 audit, not yet updated in the NPI Workbook, indicates an additional 87,676 to be lost in the Mine Protection Area (subsidence zone of the underground mine). The Priority Plant Corrective Action Plan commits to determining habitat requirements for priority plants, GIS mapping of transplanting areas for priority plants, determination of propagation methods for all priority plants, and research and determination of effective transplanting methods. Commitments are not being fully met for determining habitat requirements for priority plants and GIS mapping of transplanting areas for priority plants.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2022 – current	The OT ESIA describes development and implementation of a Worker accommodation strategy, however this is not evident	ESAP: Worker Housing Development / ESIA C8, s.8.1.1	Open	II	**See Section 5.1.3.** The IESC opened a NOC in 2022, noting that a Worker Accommodation Strategy should identify existing gaps in bed numbers, and forward-looking demand for beds that can be reasonably anticipated, and satisfying 'Everyday Respect' commitments. Context at that time was that worker accommodation is at capacity, and some of the existing camps are at the end of their life expectancy. Solutions to provide adequate beds for the permanent workforce appear ad hoc. OT stated that a pre-feasibility study is to be prepared by December 2023, however this responds only to meet bed requirements for 'Everyday Respect' program commitments (i.e. one worker per room per shift) through on- and/or off-site accommodation options. The OT ESIA described that OT is developing and implementing a long-term worker housing strategy (§4.12.4), however a strategy, incorporating both current and anticipated future demand, is not evident. The IESC finds that this commitment has not been met by OT in planning for worker accommodation, and recommends that a strategic plan be developed to demonstrate that potential E&S risks have been fully considered. If off-site accommodation is preferred, the ESAP requires that an ESIA is prepared, which also addresses water requirements of the accommodation and measure to mitigate any impacts to herder wells. In May-24, a new target of securing 50% residential employment in KB by 2035 was set. However, a Worker Accommodation Strategy for the coming ten years remains outstanding. Additional demands for worker accommodation were described for a shutdown activity in July-24, with offsite accommodation proposed as a solution. No NOC has been submitted describing and assessing E&S risks and proposed avoidance and mitigation measures.

Non-Conformance Date	Non-Conformance Observation	ESIA Reference	Status	Non-Conformance Class	Report Reference/IESC Comments
Q3 2022 – current	The RAP commits OT to conducting the RAP Completion Audit in 2020	RAP, v3.0, s.9	Open	II	**See Section 5.2.1.** The IESC opened a non-conformance in 2022 for lack of progress in engaging a suitably qualified consultant to conduct a Completion Audit, to close out 2011 impact mitigation measures. In May and September 2023, the NC remained open; the procurement of consultant services had, at the time of the audit, not been concluded and additional support requirements identified by the Outcome Evaluation of 2018 has been implemented and concluded since 2022. The lengthy period to complete the RAP CA is potentially confusing how OT will step out of RAP implementation and into wider, ongoing support to herder households in KB more broadly. As at May 2024: the consultant has been engaged and the fieldwork completed and report drafted, but not yet finalised.

Table 8 – 2 summarizes the status of non-conformances starting from the October 2013 IESC review, and since the beginning of OT operations.

Figure 8-2 Non-Conformances Identified by IESC Over Operations

Mission No.	Site Visit	New Non-Conformances Identified	Non-Conformances Closed	Non-Conformances remaining Open
M1	October 2013	26	N.A.	N.A.
M2	April 2014	11	8	29
M3	August 2014	2	3	28
M4	November 2014	7	10	25
M5	April 2015	0	3	22
M6	September 2015	4	6	20
M7	April 2016	1	9	12
M8	August 2016	4	2	14
M9	May 2017	1	6	9
M10	October 2017	0	3	6
M11	April 2018	1	3	4
M12	September 2018	1	1	3
M13	May 2019	1	1	4
M14	May 2020	1	2	3
M15	December 2020	1	1	3
M16	December 2021	0	0	2
M17	May 2022	2	1	3
M18	September 2022	3	1	2
M19	May 2023	0	3	4
M20	September 2023	4	0	4
M21	May 2024	1	0	9

Prepared By:

STRENGTH GEOLOGICAL AND ENVIRONMENTAL CONSULTING, LLC

Phone: +1 (202) 630-8585

Email: Dana@StrengthGEC.com | URL: http://www.StrengthGEC.com