REPORT OF THE:

INDEPENDENT ENVIRONMENTAL & SOCIAL CONSULTANT

OYU TOLGOI MINE PROJECT

MONGOLIA

Interim Report: July-August 2014

Prepared by:
D'AppoloniaS.p.A.

Prepared for:
OyuTolgoi LLC

REPORT OF THE:

INDEPENDENT ENVIRONMENTAL & SOCIAL CONSULTANT

ENVIRONMENTAL & SOCIAL COMPLIANCE MONITORING

OYU TOLGOI MINE PROJECT

Mongolia

Interim Report: July-August 2014

Prepared by: D'Appolonia S.p.A.
Via San Nazaro, 19
16145 Genova, Italia
www.dappolonia.it

Audit Team Members:

Giovanni De Franchi: Project Manager and Team Leader – Environmental Health & Safety Specialist
Robert Snow: Senior Reviewer – Health & Safety and Mining Specialist
Dana Strength: Environmental / Hydrologist Specialist
Angela Reeman: Social/Community Specialist
Joanna Treweek: Biodiversity Specialist

Report Version	*Date of Issue*
I Draft	August 15
II Draft	September 10
Final	September 30

Document No: 13-391-H3

TABLE OF CONTENTS

TABLES

FIGURES

ACRONYMS

AEMP	Atmospheric Emissions Management Plan
AI	All Injuries
AQMP	Air Quality Monitoring Plan
BAP	Biodiversity Action Plan
BMEP	Biodiversity Monitoring and Evaluation Programme
BMP	Biodiversity Management Plan
BOMP	Biodiversity Offsets Management Plan
CAO	Compliance Advisor Ombudsman
CBMP	Core Biodiversity Monitoring Plan
CH	Cultural Heritage
CHMP	Cultural Heritage Management Plan
CHP	Central Heating Plant
CMTU	Confederation of Trade Unions
CSETS	Community and Stakeholder Engagement Tracking System
CSP	Communities and Social Performance
CSP MS	Communities and Social Performance Management System
CWG	Compensation Working Group
EBRD	European Bank for Reconstruction and Development
EC	Electrical Conductivity
ECAs	Export Credit Agencies
EDC	Export Development Canada
EFIC	Export Finance and Insurance Corporation
EHT	Elected Herder Team
EPRP	Emergency Preparedness and Response Plan
ER	Employee relation
ERP	Emergency Response Plan
ERM	Environmental Resources Management
ESAP	Environment and Social Action Plan
ESIA	Environmental and Social Impact Assessment
FFI	Flora and Fauna International
GHGs	Greenhouse Gas Emissions
GIIP	Good International Industry Practice
HR	Human Resources
HSE MS	Health, Safety and Environment Management System
IA	Investment Agreement
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
IFIs	International Financial Institutions
IMP	Influx Management Plan
IOM	Organisation for Migration
ITRB	Independent Technical Review Board
KCB	KlohnCrippen Berger, Ltd.
KPI	Key Performance Indicator
LBAP	Lender Biodiversity Action Plan
LMP	Land Use Management Plan
LTI	Lost Time Injury
LTIFR	LTI Frequency Rate
LUIP	Land Use Implementation Plan
LUMP	Land Use Management Plan
MEGD	Ministry of Environment and Green Development
MIGA	Multi-lateral Guarantee Agency
MLA	Mine License Area
MoC	Management of Change
MoH	Ministry of Health

MWMP	Mineral Waste Management Plan
NAF	Non-acid forming
NAMEM	National Agency of Meterological and Environmental Monitoring
NPI	Net Positive Impact
OMP	Operational Management Plan
OT	Oyu Tolgoi
OT-GS	Oyu Tolgoi – Gashuun-Sukhait
OT-KB	Oyu Tolgoi – Khanbogd
PAF	Potentially acid forming
PEM	Participatory Environmental Monitoring
PR	Performance Requirement
PS	Performance Standard
RAP	Resettlement Action Plan
RECB	Research and Experiment Center for Boilers
RT	Rio Tinto
RTBS	Rio Tinto Business Solutions
SC	Standard Chartered Bank
SEP	Stakeholder Engagement Plan
SHCF	Stakeholder Coordination Function
SOW	Scope of Work
TBC	The Biodiversity Consultancy
TDS	Total Disolved Solid
TPD	Tonnes per day
TSF	Tailings Storage Facility
UG	Underground
US EXIM	Export-Import Bank of the United States
WMC	Waste Management Centre
WMP	Water Monitoring Plan
WRD	Waste Rock Dump
WRMP	Water Resources Management Plan

EXECUTIVE SUMMARY

The Oyu Tolgoi Project ("the Project" or "OT Project") is a world-scale copper/gold mine located in the South Gobi region of Mongolia, approximately 600 km south of the capital city, Ulaanbaatar, and 80 km north of the Mongolia-China border. The mineral resources consist of a series of deposits containing copper, gold, silver and minor amounts of molybdenum. The project is being developed by Oyu Tolgoi LLC (the "Project Company" or OT), a joint venture between Turquoise Hill Resources (66 per cent) and Erdenes Oyu Tolgoi (34 per cent), a company wholly owned by the Government of Mongolia. Rio Tinto (RT) is a major shareholder in Turquoise Hill Resources and since 2010 is formally managing the Project on behalf of all shareholders.

Since September 2013, D'Appolonia S.p.A. (D'Appolonia), located in Genoa, Italy, has been appointed to act as the Independent Environmental and Social Consultant (IESC) on behalf of the Senior Lenders[1] group planning to provide financing for the OT Project.

Because of the limited time to demonstrate progress on the items identified since the last IESC site visit (March/April 2014) and as the next site visit is scheduled for November 2014, the Project Company and the Senior Lenders agreed to conduct this audit as a desktop exercise. The scope was to review the most recent environmental, social, health and safety documentation/data associated with Project operation, to highlight any impacts/incidents reported by the Project since the last IESC site visit and to identify whether the Project mitigation measures are being implemented as required.

The audit has not covered topics for which it would be necessary to observe performance through "standard" site visit. The information included in the document is based on the review of documentation provided by OT and on correspondence with OT staff responsible for HSE and social aspects. The report provides follow-up on the status of non-conformances (see Issues Table in Section 3) with respect to the Project commitments as included in the Operational Phase Management Plans (OMPs), the Environmental and Social Impact Assessment (ESIA), the Environmental and Social Action Plan (ESAP)and other reference documents.

Topics not covered in this report will be addressed during the next site visit expected to take place in November 2014 when the entire IESC team will be mobilized.

The main observations of this field visit are summarized as follows.

Environmental and Social Management System

The Environmental and Social Management System provides for administering the project and meeting the Project Standards, the laws and regulations of Mongolia, permit conditions, Investment Agreement of 6 October 2009, as well as the environmental, health & safety and social policies, standards and requirements of the IFC and EBRD. The management system includes planning, operations, reporting checks, and review elements with a focus on continual improvement. Specific operating plans define the project commitments, key performance indicators and monitoring parameters, and reference specific implementation documents. Also included in the system is a Management of Change (MoC) process, which has been implemented by the Project to address modifications of project plans and commitments, as discussed in associated sections of the report. Some of these have been accepted by the Lenders, while others have issues to be resolved.

Water and Wastewater Management

OT has implemented the Undai River Partial Adjustment and Protection project as a result of being unable to implement the full Undai Diversion as described in the ESIA. The delay in issuing a Land Use Permit currently prohibits OT from constructing aspects of the Undai River Diversion project that were to take place outside of the fenced Mine License Area (MLA). Diverted groundwater is being discharged to an injection bore within the MLA. This injection bore is not functioning as anticipated and groundwater is partially discharging to the surface creating an artificial spring. The current Undai River Partial

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.*

Adjustment and Protection project does not fully reflect design specifications as set out in the ESIA, specifically with respect to return of groundwater to the subsurface and replacement of BorOvoo Spring.

The ESIA MoC procedure, as identified in the ESMP, was implemented by the Project on May 20, 2014 (Notice of Change 2014-001). The purpose for implementation of the MoC procedure was to (a) address non-conformance of the existing Undai River Partial Adjustment and Protection project with commitments of the ESIA; and (b) address inconsistencies in the ESIA with respect to design and construction of the full Undai River Diversion project (i.e., works to occur outside of the MLA). The submitted Notice of Change 2014-001 has not been accepted by the Lenders as detailed technical review of available information is pending. A workshop to undertake a critical review of the *Undai River Diversion – "New BorOvoo Spring" Water Resource Affects Evaluation"* memo, as well as all other available hydrogeologic information, has not taken place since the March-April 2014 IESC recommendation. This review is currently scheduled for November 2014.

Three of the six known bores exhibiting interconnection of hydrogeological units in the Gunii Hooloi borefield have been sealed and are being monitored to ensure the efficiency of the implemented sealing procedure. In May 2014 the Project issued an SOW that includes the sealing of interconnecting bores both within and outside of the MLA. The IESC recommends that an estimate of spring surface area using visual observations and pace be entrenched within the Standard Work Procedure "*Conduct Spring Photograph*". The WMP and WRMP discuss additional studies and works that will be undertaken by OT to address commitments made in these plans. Auditing of the completion of works will be tracked by the IESC to ensure timely conformance with the commitments made in the WMP and WRMP.

Mineral Waste Management

Mineral waste management associated with the Open Pit, Waste Rock Dump (WRD), and Tailings Storage Facility (TSF) is continuing under the Project strategy. The MoC procedure has been employed to address rock stockpiles associated with the underground mine development: Notice of Change 2014-003 addresses the disposition of Shaft 1 rock stockpile, and Notice of Change 2014-004 addresses other underground development rock stockpiling and the siting of a permanent potentially acid forming (PAF), integrated waste rock dump in the vicinity of the current Shaft 2 stockpile. Key Management Controls (MW05 and MW06) have been changed to reflect the planned disposition of PAF waste rock; updating of the WMP to reflect monitoring requirements for long term stockpiles and a permanent, integrated PAF rock dump is required. In the interim, current monitoring for containment and drainage is continuing.

Cell 1 of the TSF continues to be operated, with construction of embankments to achieve the design freeboard. While some increase in the deposited tailings density and beach slope has been reported, it remains below design estimates and flocculent reagent trials are planned. To accommodate the tailings density and beach slope, design modifications for the TSF embankments have been prepared, addressing the stability. In addition to demonstrating the stability of the TSF under the design modifications, engineering evaluations should also demonstrate that PAF materials designated for use in downstream zones of the TSF embankment will be protected from contact with tailings seepage water.

Non-Mineral Waste Management

The Project continues to implement the waste management strategy defined in the management plans and related operating procedures. Despite the challenges associated to the remote location of project areas, the effort to identify off-site recyclable options continues.

Disposal of waste at the permanent Waste Management Centre (WMC) commenced on 24 June 2014. The use of the interim WMC will be progressively discontinued and waste accumulated will be either recycled/treated or transferred to the new WMC. The Project is now working to develop an interim landfill decommissioning, decontamination and rehabilitation plan to manage the process of transferring existing waste from the interim site to the new facility and to identify the actions needed to rehabilitate/decontaminate the site to the original conditions.

Air Quality

The south Gobi is an arid and windy region, with dust storms periodically causing elevated concentrations of airborne particulates. Due in part to the overall dry and windy environment there are historic and current exceedences of ambient air quality Project Standards. OT has made good progress in addressing the causes of these exceedences and in working with project operational areas to develop appropriate mitigations. There are high levels of dust intermittently generated at the coarse ore stockpile location. OT has identified

the use of a foam suppressant as the best mitigation and installation is in progress. It is currently estimated that the dust suppression foam system will be completed and operational by September 2014.

Additional monitoring equipment is required to allow more robust analysis of ambient air quality conditions, and to allow full analysis relative to Project Standards. It is estimated that this necessary equipment will be available on site and ready for installation by November 2014. The Central Heating Plant (CHP) has returned stack emission sampling data indicating emissions do not meet Project Standards. Stack emission sampling at the CHP currently does not meet the monthly periodicity identified in the Air Quality Monitoring Plan (AQMP). OT is currently preparing a Scope of Work (SOW) for a third party vendor to perform the required monthly testing. In addition a different third party contractor is undertaking a complete inventory of all site emission sources, including recommendations for improvements and updating the site air dispersion model. Identification and assessment of greenhouse gas reduction and energy efficiency improvement opportunities will be undertaken per Rio Tinto procedures by December 2014.

The Project incinerator has required significant repairs to address damages to the unit including emissions controls. A SOW has been developed to return the manufacturer to the site to ensure that the incinerator is operating at full capacity, within engineered design parameters, and within Project Standard emission limits. It is expected that this work will be executed in August 2014. Because the stack emission sampling equipment is inoperable the IESC is unable to assess incinerator emission quality with the guidance provided in Appendix C of the AQMP.

Emergency Preparedness & Response

The Emergency Response Team operating under the Emergency Preparedness and Response Plan (EPRP) is well staffed and equipped, and conducted a full scale exercise in May to test and evaluate airport emergency procedures. Scenarios describing potential events and response actions, as cited in the Emergency Response Plan (ERP), have been prepared for approximately 18 of 25 identified scenarios. The identified scenarios need to be completed or developed and reviewed relative to the management commitments. Among those scenarios yet to be developed are procedures and an Emergency Action Plan for a TSF failure scenario. As the TSF is developed to significant height, and should its failure have the potential to affect mine operations, infrastructure and communities, an Emergency Action Plan should be in place.

Transport Management

Control over transport vehicles is effectively managed as shipments have continued to increase toward full production. A mandatory induction training summary for transport service providers includes HSE, legislation and regulation, alcohol and drug policy, general behaviour and discipline, but does not specifically document measures associated with community awareness and livestock/wildlife road crossings that were previously recommended by the IESC and planned by the Outbound Logistics Team. It is understood that the Communities Team has provided targeted inductions to logistics contractors however it is necessary for the *Communities Induction* to be included as an element of the mandatory inductions for all employees and contractors.

Ecological Management and Biodiversity

OT's Biodiversity Management Plan (BMP) and a set of associated management plans form the basis for implementing the project's mitigation actions for biodiversity and ecosystems. Following a period of consolidation involving OT, its biodiversity consultants and Lenders, the BMP has now been updated. A comprehensive independent review of the updated BMP is planned to ensure that it incorporates all the commitments and requirements identified in the ESIA, prior to final approval/ sign-off.

Requests for changes (Notice of Change 2014-006 and 2014-007) to timelines for some BMP actions have been notified to the Lenders as well as a request to remove a Lender BAP Commitment to install barriers along OT roads to prevent off-road driving. Implications of these changes are reviewed in the report. They have not all received Lender approval at this stage and some need further review and discussion.

Planned interventions to manage threats and pressures affecting populations of endangered species so that a net positive impact is achieved have not yet been designed in detail. Results of aerial and ground-based surveys to track movements of Khulan and Gazelle have become available since the previous IESC audit, however, as well as results of studies in which carcases of wildlife species were counted as a basis for monitoring levels of hunting in the region. These extensive studies were designed and implemented by

experienced specialists, and have covered large areas and multiple seasons. The results are expected to provide an improved evidence base for OT's efforts to control illegal hunting and off-road driving and to maintain landscape connectivity, amongst other measures towards conservation gain, though specialists also identified some issues which need to be followed up with further survey effort. A further workshop is planned to discuss measures for maintaining landscape connectivity across roads is planned in November 2014 due to lack of consensus regarding the most effective approach.

The need to ensure that an effective planning process for internal and external stakeholder engagement is in place remains a priority. Revision of the timeframe for submitting its Stakeholder Engagement Plan has been requested by OT, but several activities have taken place which should improve scope for development of an effective plan. These include a series of meetings with Government regarding its policy on biodiversity offsets and a review of biodiversity-related capacity building and stakeholder engagement requirements undertaken on behalf of OT by Flora and Fauna International (FFI).

Aspects not reviewed in detail in this audit include staffing and resourcing for the biodiversity-related research and monitoring needed to underpin efforts towards Net Positive Impact (NPI). It was not possible to review rehabilitation efforts on the ground, but further discussions were held regarding clarification of objectives and targets for restoration.

Labour & Working Conditions

As at the end of June 2014 there were around 6,800 workers on the OT operation. Around 2,700 are OT LLC employees. The total workforce is 94% Mongolian nationals.

Since the last audit a workforce review has been conducted and a number of workers have been made redundant from OT LLC and contractor companies. This exercise was part of the planned "right sizing" of the OT workforce for its current operations. The planning process began in March 2014 and notice was given to workers at the end of May. An HR Management Plan was developed and implemented by OT and an advance copy was provided to Lenders/IESC. The plan contains the provisions required under Mongolian law for retrenchment processes and OT has cooperated with the OT Trade Union and contractor companies to implement the plan. Meetings have been held with contractor companies and also individually with many affected workers. However, further evidence is required from OT to demonstrate that this plan has been fully implemented by contractors and that all mitigation measures have been afforded to contract workers. The number of workers affected locally is relatively low: 11 in Khanbogd *soum* and a further 42 from other parts of Omnogovi *aimag.* A detailed summary of the final outcomes of the redundancy process should be provided as soon as available.

Manpower forecasts for the next 5-years were still being finalised as a result of the workforce review. The key metrics to report to communities and authorities on local content have been defined but reporting has not yet started and is outstanding. Regular monitoring and auditing of contractor HR and Employee Relations (ER) performance remains to be systematised by OT. It is the Procurement Department's responsibility to ensure that contractor performance is monitored and the IESC want to review an assurance schedule and scope for HR/ER compliance reviews, as well as results of any previous assessments at the next audit. The level of worker grievances reported were lower in the same period compared to the last audit. Notably, it appears there were no worker grievances in this period related to the most recent redundancies.

The temporary South camp will be closed by end August 2014. As at mid-July there were less than 40 workers reported on site and the camp is progressively being dismantled. OT intends to remove all infrastructure from the site and rehabilitate the area. All blocks in Manlai camp have now been sound-proofed and improvements have been made to the waste water treatment plant, which have reportedly reduced odour issues. OT confirmed that there are no plans to reopen the former CIS camp in Khanbogd *soum* centre, but there may be future accommodation requirements elsewhere which are not yet defined.

Resettlement, Compensation and Livelihoods Improvement

The Completion Audit for resettled herders is still being finalised. There have been some challenges collecting household level data to assess livelihoods, but OT is exploring other opportunities to enhance the draft report and make a further assessment of the affected households since resettlement. It is important that the Completion Audit is finalised based on the IESC recommendations and disclosed to stakeholders as relevant once completed.

The database of displaced herders could be further enhanced by incorporating socio-economic data and expanding it to include other Khanbogd *soum* herders (or a sample thereof); not only those directly compensated in 2011. All herder groups affected by loss of winter and summer grazing lands need to be monitored by OT. The outcome evaluation of herders from the 2011 program has not yet commenced. It is still being planned as part of the multi-disciplinary study with the EHT and CAO, however, agreement is proving difficult and unless it can be reached soon the outcome evaluation will need to proceed on its own. The number of complaints from herders has reduced in 2014. There remains an outstanding group complaint from a small number of herders who seek to be considered for compensation. OT has responded that the decision is the responsibility of the Compensation Working Group. OT advised the Soum Governor of this and is awaiting a decision on the reconvening of the Compensation Working Group. To date, the *soum* has not yet reconvened the CWG and OT may need to develop an alternative solution if this does not eventuate.

The pasture and livelihood improvement program is being implemented and recent/upcoming activities include participatory vegetation monitoring, expansion of the animal health study, the Khaliv area water exploration project and a carrying capacity assessment inside the OT lease area. Work is still required by OT to describe how the biodiversity conservation and ecosystem services activities will be synthesized with the pasture and livelihood improvement program. Recent and planned biodiversity and ecosystem services workshops, capacity building activities and studies should enable this to be progressed. As in the previous report, the IESC suggests that OT prepare a 'road map' or similar to describe how the strategy will be operationalised by the different implementation and monitoring plans and teams.

Review of several support projects for herders in Khanbogd and their participation, has identified the need for further income enhancement and diversification opportunities to fulfil OT's commitment to implement a comprehensive sustainable pastureland management program. The micro-credit loan scheme, the camel shearing project, and a household-level animal health support project currently being considered would be appropriate to achieve this. Encouragement of herder cooperatives by OT is positive, but these projects need to be developed, funded, and implemented by the company regardless of herder cooperative development. A review of the supplemental fodder program was conducted and should enable improvements to be identified for the program in coming years.

The updated vulnerable people database shows that all vulnerable herder households have participated in at least the supplemental fodder program, but that the majority have not yet benefited from livelihood restoration or other assistance measures. It must be a priority for OT to review each case and develop a comprehensive vulnerable people program, including regular monitoring. Other support to vulnerable people generally (not only herders) continues as part of the community development program.

Stakeholder Engagement

Community engagement is being managed by a detailed calendar of engagement events coordinated by the Communities and Social Performance (CSP) team. A revised Communities and Social Performance SEP is still being developed to guide these activities and the implementation of any issue-specific engagement plans as they are developed. It is important that this plan is finalized and incorporates all existing commitments. One of the important issue-specific engagement plans required is for biodiversity; which will be developed by the Biodiversity team and coordinated with CSP through the internal Ecosystem Services Group. An information dissemination plan has been developed for the PEM program and if implemented as intended should contribute to maximizing the benefits of this very good program. There are some minor observations for finalizing the plan, and we look forward to hearing feedback from the community after further disclosure activities have commenced. The monthly community newsletter and other disclosure activities continue. The budget for the fit-out of Community Interaction Centre in Khanbogd has been approved and when completed, should enable a range of further materials and displays to be presented. A template for regular disclosure of social and environmental performance data has been developed and the key metrics agreed, but implementation remains outstanding.

The IESC has seen some of the results from joint meetings with the EHT and CAO over the past year. This is the main forum for engagement on the Undai River diversion. It is evident that the actions being agreed are recorded and their implementation status is tracked. Once the parties have received recommendations from the Independent Expert panel, a forward looking plan to ensure that future engagement activities for the Undai are documented should be prepared. The CAO process is ongoing. No further update was sought as part of this desk-top audit, but the IESC intends to follow-up the status of these activities at the next site visit and meet members of the EHT and others as relevant.

The number of community grievances to date in 2014 is less than for the same period in 2013. Engagement with the EHT and others appears to be having a positive influence on the relationship with Khanbogd herders. The complaints procedure has been revised and a draft provided to the IESC. The revised procedure reflects the current operation at OT, but could potentially be simplified to ensure it is readily implementable. The IESC can see the considerable effort the CSP team has made to improve how the complaints database is managed. There remain some issues with the resolution process to ensure that complaints are effectively closed out and all actions are fully recorded. The improvements made should enable more meaningful reporting to senior management. Regular reporting to communities on grievances is outstanding. A dedicated 'Community Grievance Officer' has now been appointed. Refresher training is due on complaints management.

Regional and Community Development

No significant issues or risks of concern were identified at the previous audit and this desk-based audit did not include a detailed assessment of regional and community development. Progress was reported by OT on a number of activities including the children's playground and public park design in Khanbogd. The budget for the Community Interaction Centre in Khanbogd has been approved and further work is understood to have commenced on the 5km of paved roads within the *soum* centre. These activities will be confirmed at the next visit. Further assessment of drafting of the cooperation agreement, implementation of the Khanbogd Interim Agreement, and influx monitoring and management will also be conducted.

Worker Health and Safety

The Health Team is a centralized entity under the HSE Department, and includes the main SOS clinic. Periodical medical assessments and follow-ups were performed under the continuing occupational health program.

Recent safety initiatives have included a site-wide incident Lessons Learnt review, support for implementation strategy for OT Phase II underground development, and emphasis on safety measures while working at heights. Workplace health and safety incidents are tracked within the RTBS system, reviewed and evaluated by management, and reported in monthly or quarterly reports.

Community Health and Safety

Several community health initiatives are ongoing or will be implemented for another phase in 2014. A number of stakeholder meetings were held at the Ministry of Health (MoH) on a Community-based HIV, TB and STI prevention project to be supported by OT in the target *soums*. The results of the herder health and livelihoods study were presented to *aimag* and *soum* stakeholders in Dalanzadgad in June. A Mongolian version of this study is now available and the report is currently being translated. It will be important for OT to utilise this data to inform the herder livelihood and health projects being implemented in Khanbogd and elsewhere.

Another awareness training event on human security and human trafficking was held with youth in the target *soums* in May 2014. Work has progressed on developing an MOU with the IOM to formalise an arrangement to co-fund human security and human trafficking prevention and awareness activities in local area. The IESC looks forward to seeing the next steps of this collaboration.

Cultural Heritage Management

No significant issues or risks of concern have been identified at the previous site visits and thus this desk-based audit did not include any further assessment of cultural heritage performance at the present time. The progress of implementation of the cultural heritage program and cultural awareness training of the workforce will be assessed at the next visit.

1 INTRODUCTION

Since September 2013, D'Appolonia S.p.A. (D'Appolonia), located in Genoa, Italy, has been appointed to act as the Independent Environmental and Social Consultant (IESC)[2] for the Oyu Tolgoi copper/gold mining Project ("the Project" or "OT Project") being developed by Oyu Tolgoi LLC (the "Project Company" or OT), a joint venture between the Government of Mongolia, through Erdenes Oyu Tolgoi, and Rio Tinto (RT), through Turquoise Hill Resources. Since 2012 RT has also been appointed as the manager of the project on behalf of the shareholders.

D'Appolonia's role as the IESC is to support the Senior Lenders by providing an external/independent monitoring evaluation of OT mine project activities with focus on HSE and social aspects during project operation that began on 1 September 2013. Within this role, the IESC reports periodically to the Lenders group on conformances with the environmental and social provisions contained within the Operational Management Plans (OMPs) which define how OT will implement the mitigation strategies set out in the Environmental and Social Impact Assessment (ESIA) and in the other relevant project documentation.

This report details the findings of the IESC during the July/August 2014 interim review of the documentation provided by OT. Since the last IESC site visit in March/April 2014, because of the limited time to demonstrate progress on the items identified and as the next site visit is scheduled for November 2014, the Project Company and the Senior Lenders have agreed to not conduct a full audit including a site visit. Nevertheless, in order to guarantee the audit frequency and to provide the Lenders with an update on key activities and to ensure compliance with the conditions of the loan agreement, the IESC Project original monitoring scope of work as been reduced to a desktop review.

This report represents therefore an interim review of the EHS and social documentation/data associated with Project operation made available by OT and provides an update on the Project status limited to some key topics and a follow-up of the status of the non-conformances with respect to the Project commitments as included in the OMPs, the ESIA, the ESAP and other reference documents.

Specific activities conducted included the following:

- Desktop review of the HSE and social documentation and other project-related reports provided by OT;
- Conference calls with the project teams responsible for HSE and social compliance monitoring and review relevant plans and procedures, scheduled between the 3rd and the 18th of July 2014;
- Evaluation of implementation of the commitments contained within the OMPs and the ESAP;
- Identification of deviations and/or gaps with respect to the OMPs and ESAP commitments, including recommendation for possible EHS improvements based on Good International Industry Practice (GIIP);
- Follow-up on outstanding issues from the April 2013 IESC Audit[3], if they are still relevant to current operations;
- Follow-up and closure of findings and observations identified in the March-April 2014IESC Audit[4]; and
- Drafting of an IESC report (this report) to be publicly disclosed.

Topics not covered in this report will be addressed in November during the next site visit when the entire IESC team will be mobilized.

The information, observations, and opinions presented in this report are those of D'Appolonia 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 *IESC Team members: Giovanni Battista De Franchi (Project Manager and Team Leader – EHS Specialist), Robert Snow (Senior Reviewer - HS and Mining Specialist), Dana Strength (Environmental / Hydrologist Specialist), Angela Reeman(Social / Community Specialist), Jo Treweek (Biodiversity Specialist).*

3 ERM, "Oyu Tolgoi Construction Phase Environmental, Social, Health & Safety Audit - April 2013 Audit Report", dated 18th July 2013.

4 D'Appolonia, "Independent Environmental & Social Compliance Monitoring Report–March-April 2014 Audit Report", dated June 2014.

2 PROJECT OVERVIEW

2.1 CONSTRUCTION AND OPERATIONS STATUS

The construction and operations status was previously updated for the April 2014 audit report, and based on information provided to the IESC for this desktop review, no significant changes have occurred in the interim. As indicated in the sections of the report that address mineral waste management and transport management, mine production and concentrate shipments are approaching planned production levels.

2.2 REPORT ORGANIZATION

Subsequent sections of this report are organized as follows:

- Section 3.0– Issues Table
- Section 4.0 – Environmental and Social Management
- Section 5.0 – Environment
- Section 6.0 – Social
- Section 7.0 – Health and Safety
- Section 8.0 – Cultural Heritage

The basic findings of the IESC review are presented in the form of observations, comments and recommendations that are generally described within this report. Throughout the text of each section, two types of recommendations are reported:

- Findings, which identify issues non-conformance with Project commitments included in the OMPs and/or GIIP; and
- Observations, which are suggestions for the proper implementation of required actions and closure of open issues and which are based on the collective experience and expertise of the IESC team members.

IESC's "observation" are not considered mandatory and therefore their implementation is not critical. 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. The action items throughout the report are also presented in the Issues Table provided in Section 3.0.

3 ISSUES TABLE

This chapter tabulates a summary of key non-conformances raised in this report based on observations made during the site visit, interviews with OT staff, as well as review of documentation provided during and after the site visit and consistent with our scope of work.

The table has been structured to provide a color-coding for strict non-conformances referenced with respect to Project commitments as included in the OMPs, in the ESAP and in the underlying OT monitoring documents and procedures which all together define how the OT operations comply with applicable Lenders' Environmental and Social Standards. The nomenclature of the color-coded categorizations is assigned based on the same non-conformance levels defined in the OT ESMP[5] which reflects the RT HSEQ Management System classification.

The following descriptions are provided:

- **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.

Action items are identified by the number of the mission (MX.Y), where X is the mission number and Y is the related action item number. It should be noted that the text description of the recommendations could be revised from one visit to the next to better reflect current field conditions; however the original item numbers are retained until closed as they refer to the same main issue.

Each non-conformance identified in the table will require actions from OT and will be followed-up by the IESC in subsequent site visits. 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 the collective experience and 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 audit are as follows:

- No Class IV non-conformances have been identified;
- One Class III non-conformance identified;
- Fifteen Class II non-conformances identified;
- Thirteen Class I non conformances identified; and
- One non-conformance against ESAP commitment identified.

Eight non-conformances identified during the October 2013 IESC site visit were closed during the March/April 2014 site visit and two during this audit.

[5] *Environmental and Social Management Plan (ESMP) - Doc. No. OT-10-PLN-0003 dated 01.09.2013.*

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Health, Safety, Environment and Social Performance Management System							
M2.1	April 14	Desktop Audit Aug. 14	Improvements to implementation of the community grievance procedure are ongoing. A single responsible person is required to coordinate implementation of the procedure and to ensure consistency in its implementation.	I	Stakeholder Engagement Plan Sections 5.7, 5.8, Annex F	**Closed**	See Section 4.2.3. A dedicated 'Community Grievance Officer' is understood to have been appointed by OT as planned.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environment – Water and Wastewater Management							
M1.1	Oct.13 April 14 Desktop Audit Aug. 14		The Undai River Diversion has not been completed in accordance with the ESIA due to a delay in issuance of a Land Use Permit. A temporary approach (the Undai River Partial Adjustment and Protection Project) has been completed to divert surface flow and to capture and re-route groundwater flow from the Undai River and around the zone of influence of the open pit. The current Undai River Partial Adjustment and Protection Project does not fully meet all requirements of the ESIA. However consideration needs to be given to the equivalence of the current temporary arrangement with commitments contained in the ESIA and WRMP.	III	IESC - April 2013 Audit Water Resources Management Plan (WR12)	Open	See Sections 5.1.2.1, 5.1.2.3 and Issue M1.18.Planned Undai River Diversion works outside of the Mine License Area (MLA) are pending regulatory approval (a requisite Land Use Permit). Although the current system is considered temporary it is not known when the requisite Land Use Permit will be issued allowing for works to be implemented as detailed in the ESIA. Some inconsistencies exist in design criteria for the Undai River Diversion as presented in the ESIA. The ESIA MoC procedure, as identified in the ESMP, was implemented by the Project on May 20, 2014 (Notice of Change 2014-001), including the Lender Group change notification requirement. The purpose for implementation of the MoC procedure was to (a) address non-conformance of the existing Undai River Partial Adjustment and Protection project with commitments of the ESIA; and (b) address inconsistencies in the ESIA with respect to design and construction of the full Undai River Diversion project (i.e., works to occur outside of the MLA). The submitted Notice of Change 2014-001 has not been accepted by the Lenders as detailed technical review of available information is pending. A workshop to undertake a critical review of the *Undai River Diversion – "New BorOvoo Spring" Water Resource Affects Evaluation"* memo, as well as all other available hydrogeologic information, has not taken place since the March-April 2014 IESC recommendation (*Note: this review is currently planned for November, 2014).* This item remains a Level III Non-conformance due to the current non-conformance with ESIA descriptions, and implementation of a precautionary approach in assessment of likely impacts to the Undai River groundwater system.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M1.5	Oct.13 April 14 Desktop Audit Aug. 14		Mitigations are required in the event of interconnection of hydrogeological units. These mitigations have not yet been implemented in all instances. OT is progressing efforts to abandon or convert to productive use these interconnecting bores.	II	IESC - April 2013 Audit Water Resources Management Plan (WR04, 14)	Open	See Section 5.1.2.7. Evidence exists of exploration bores interconnecting hydrogeological units within the GuniiHooloi borefield and within the Mine License Area. Three of the six known bores exhibiting this interconnection have been sealed and abandoned. Sealing of the three remaining known interconnecting bores outside of the MLA is currently under evaluation by a workgroup established with the Khanbogd soum. In May 2014 the Project issued an SOW that includes the sealing of interconnecting bores both within and outside of the MLA. Best efforts are being made to progress the sealing of any interconnecting bores outside of the MLA; however the issue is outstanding.
M1.7	Oct.13 April 14	Desktop Audit Aug. 14	Drinking water and treated effluent are currently not assessed against the full suite of determinants (regulatory parameters) as adopted in Project Standards. No laboratories currently exist in Mongolia that would allow sampling of all identified parameters, creating challenges to meeting all adopted Project Standards.	I	Water Resources Management Plan (WR07)	**Closed**	See Section 5.1.2.9. After investigation it has been determined that all wastewater and potable water parameters of analysis cannot be tested for using available domestic laboratory capacity. The ESIA MoC process was initiated by the Project in June 2014 to address the issue (Notice of Change 2014-002). Parameters that cannot be sampled for using available laboratory capacity are not considered key indicators and the MoC has been approved. Most recent wastewater and potable water sampling results indicate conformance with revised Project Standards.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M2.2	April,14 Desktop Audit Aug. 14		The monthly monitoring of springs located on the Undai River channel, and down gradient of the MLA, is not performed in accordance with the specific procedures described in the Water Monitoring Plan.	I	Water Monitoring Plan Section 3.4.3	Open	See Section 5.1.2.6. The WMP describes the procedures that will be used to monitor natural springs that occur along the Undai River channel and down gradient of the MLA. In June 2014 OT began implementation of a Standard Work Procedure entitled "*Conduct Spring Photograph*". The Standard Work Procedure identifies monthly photographs to be taken from a fixed reference point. Deepest water level depths are measured using a linear ruler as the installation of a graduated and fixed reference within springs is discouraged by community members. An estimation of spring surface area using visual observations and pace should also be entrenched within the Standard Work Procedure.
M2.3	April 14 Desktop Audit Aug. 14		The drilling and installation of supplementary monitoring bores, as discussed in the WMP, has not yet been implemented. Erosion monitoring at culverts, springs, herder wells and ephemeral stream crossings has not to date been implemented.	II	Water Monitoring Plan, Section 3.2.6, 3.3.5 Water Resources Management Plan (WR14, WRm06)	Open	See Section 5.1.2.8. The WMP and WRMP discuss additional studies and efforts that will be undertaken by OT address commitments made in these plans. OT has developed SOW documents to address these commitments. Although awarded the contracts have not yet been executed. Actions in the SOWs include the drilling and installation of supplementary monitoring bores; erosion monitoring at culverts, springs, herder wells and ephemeral stream crossings; and general hydrogeologic consulting assistance in the review of monitoring results, QA/QC assurance, and the oversight of supplementary monitoring bore installation. Auditing of the completion of works detailed in the SOWs will be tracked to ensure timely conformance with the commitments made in the WMP and WRMP.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environment – Mineral Waste Management							
M1.8	Oct.13 Desktop Audit Aug. 14		The Operational Mineral Waste Management Plan (MWMP) cites that Shaft 1 development rock will be processed through the concentrator during start-up. The material remains stockpiled as operations are initiated and the Project expects that it will not be processed, but ultimately handled as PAF material and disposed in the TSF or WRD. Containment and monitoring of the stockpile has been implemented to address this temporary circumstance associated with mine development.	I	IESC - April 2013 Audit Mineral Waste Management Plan (MW04, MW05, MW13, MWM5)	Open	See Section 5.2.2. The stockpile for Shaft 1 may be used for construction of the TSF, in designated PAF zones, or transferred to designated PAF Open Pit rock dump areas. The disposition of the stockpile for Shaft 2 which may contain PAF material, as well as future underground mine development rock, will be in an integrated, permanent rock dump that is managed and monitored in accordance with PAF standards. Containment has been placed around the stockpile to contain the material and drainage, and monitoring for drainage is performed. The MoC procedure was initiated by the Project in June 2014 to address the disposition issue associated with the Shaft 1 stockpile (Notice of Change 2014-003), and other underground development rock stockpile requirements, including the disposition of the existing Shaft 2 stockpile (Notice of Change 2014-004). The issue has been retained as a Level 1 Non-Conformance pending review of groundwater monitoring requirements and updating of the Water Monitoring Plan as necessary.
Environment – Air Quality							
M1.11	Oct.13 April 14 Desktop Audit Aug. 14		Significant dust (particulate) emissions are generated intermittently at the coarse ore stockpile, due in part to lower than anticipated moisture levels.	II	Atmospheric Emissions Management Plan (AQ05)	Open	See Section 5.5.2.1. There is significant dust generation at the Coarse Ore Storage (storage) facility. A foam dust suppressant and the system to spray this material have been procured and installation is in progress. It is currently estimated that the dust suppression foam system will be completed by September 2014. The Project should monitor results of implementation to assess the effectiveness of this measure or determine if other mitigations are warranted.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M1.12	Oct.13 April 14 Desktop Audit Aug. 14		There are limitations to the existing ambient air monitoring network available on site. The AQMP describes needed necessary equipment at the OT site to monitor ambient air conditions to Project Standards. Contrary to what was reported in the October, 2013 Audit this equipment has not yet been procured primarily due to the significant associated expense.	II	Atmospheric Emissions Management Plan (Section 1.5; Air Quality Monitoring Plan – Appendix A; AQ-KPI02)	Open	See Section 5.5.2.1. Additional monitoring equipment is required to allow more robust analysis of ambient air quality conditions, and to allow full analysis relative to Project Standards. It is estimated that this necessary equipment will be available on site and ready for installation by November 2014.
M1.13	Oct.13 April 14 Desktop Audit Aug. 14		Emission stack sampling currently not performed at the Central Heating Plant (CHP).	II	Atmospheric Emissions Management Plan (AM03) Air Quality Monitoring Plan – Appendix B)	Open	See Section 5.5.2.2. The CHP currently lacks monitoring equipment to allow direct sampling of stack emissions in conformance with the monthly periodicity identified in the AEMP. OT is currently preparing a Scope of Work for a third party vendor to perform the required monthly testing. In addition a different third party contractor is undertaking a complete inventory of all site emission sources, including recommendations for improvements and updating the site air dispersion model. A single sampling event was performed in February, 2014, with results showing exceedences of Project Standards at the CHP for NO_x, SO_2, and particulate matter.
M1.14	Oct.13 Desktop Audit Aug. 14		Greenhouse gas emission reduction and energy efficient improvement analysis not yet completed, although planned for in 2013 planned activities.	I	Atmospheric Emissions Management Plan (AQ09)	Open	See Section 5.5.2.3. Identification and assessment of greenhouse gas reduction and energy efficiency improvement opportunities will be undertaken per RT procedures by December 2014.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M2.4	April 14 Desktop Audit Aug. 14		Emission stack sampling currently not performed at the hazardous waste incinerator.	II	Atmospheric Emissions Management Plan (AM06) Air Quality Monitoring Plan – Appendix C	Open	See Section 5.5.2.2. The Project incinerator has required significant repairs to address damages to the unit including emissions controls. An SOW has been developed to return the manufacturer to the site to ensure that the incinerator is operating at full capacity, within engineered design parameters, and within Project Standard emission limits. It is expected that this work will be executed in August, 2014. Stack monitoring should be completed as soon as possible following these repairs to assess performance of the unit.
Environment – Emergency Preparedness & Response							
M1.15	Oct.13 Desktop Audit Aug. 14		The Emergency Preparedness and Response Plan references the Site Emergency Response Plan, which identifies scenarios for development of response procedures. The response procedures are incomplete.	I	Emergency Preparedness and Response Plan (ERP02, 02b, 02c)	Open	See Section 5.7.2. Development of response procedures has been prioritized based on risk assessments, and approximately 18 of 25 identified incident scenarios have been drafted. Incident response plans and procedures should be complete, identify and inform communities that may be affected, with response measures tested with potentially affected communities and local Authorities. Among the scenarios to be drafted are procedures and an Emergency Response Plan for a potential TSF failure.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environment – Biodiversity and Ecological Management							
M1.16	Oct.13 April 14 Desktop Audit Aug. 14		Bird Flight Diverters must be "maintained as necessary to minimize wildlife mortality throughout operations".	II	Biodiversity Management Plan (B08, B09) Lender Biodiversity Action Plan (ID1) Core Monitoring Plan (BMEP)	Open	Section 5.9.2.1. There are ongoing problems with functioning of alternating flapper-type bird flight diverters needed to manage risks of birds colliding with power lines. Efforts are being made to understand the reasons and consequences of malfunction, but there has been no change to monitoring activities this year, meaning that the scale of undetected collisions of birds with powerlines is not known. It is important to move quickly towards resolution, given that there are regular incidences of mortality of species of conservation concern, including Houbara Bustard and Saker Falcon. The proposed approach to developing practical solutions needs to be developed unless it can be shown with good evidence that impacts are not significant.
M1.17	Oct.13 Apr. 14 Desktop Audit Aug. 14		The Biodiversity Management Plan (BMP) requires measures to control disturbance of animals and mortality from hunting and collecting. The BMP also includes the installation of structures or barriers at sensitive areas to prevent vehicles from leaving the OT-GS, OT-KB and OT-airport roads.	II	Biodiversity Management Plan (B04) Lender Biodiversity Action Plan (ID6)	Open	Section 5.9.2.2. In October 2013, OT proposed to the Lenders that this mitigation measure should be removed from the BMP (and the Lender BAP). OT followed its internal Management of Change procedure to remove this measure and then submitted a similar request to Lenders in July 2014 (through Notification of Change 2014-7). Given general consensus amongst specialists concerning the unsuitability of hard physical structures or barriers to prevent vehicles from leaving the road, the Lenders support removal of this measure from the BMP and the Lender BAP. However, OT needs to propose alternative measures to prevent vehicles from leaving the road in sensitive areas on the Gashuun Sukhait, OT to Khanbogd or OT airport roads, or to manage associated impacts. Scope to track contractors' vehicles should be assessed as a first step.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M1.18	Oct.13 Apr. 14		Ecological equivalence of Replacement BorOvoo Spring.	I	ESIA Ch B7a Table 7.1	Open	Section 5.9.3 of IESC Doc. No. 13-391-H2, Section 5.1.2.1, and issue No. M1.1. The replacement BorOvoo spring should "mimic" the characteristics of the BorOvoo spring as closely as practicable - taking into consideration the extent of inundation and catchment size, establishing vegetation and rocky outcrop habitats" (ESIA Ch B7a Table 7.1). The target plant community for the replacement spring needs to be defined, together with ecological requirements of plants during establishment and thereafter so that they can be incorporated into the replacement spring. Progress will be reviewed in the next IESC visit. Meanwhile wildlife monitoring data suggest that the temporary spring is providing drinking water for wildlife and can be considered a satisfactory temporary solution in this regard while final design and location is confirmed.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M2.5	Apr. 14 Desktop Audit Aug. 14		Installation of underpasses. Measures to maintain habitat connectivity for wide-ranging wildlife species with critical habitat affected by the Project.	II	BMP ID B16 and Annex C, ID 5	Open	Section 5.9.2.4.OT undertook to develop a workplan for installation of underpasses to include activities and timelines for stakeholder consultation, design, locations, engineering and environmental assessment consistent with expert advice. An initial workplan was due to be agreed with the Lenders by Q4 2013 (BMP Annex C, ID 5) and is now overdue. The OT – GS Road upgrade could experience increased traffic volumes which could make the road a functional barrier to movement of species such as Khulan and Goitered Gazelle. Levels of traffic are currently low and results of baseline surveys suggest that Khulan are able to cross the road frequently to access water. However OT has committed to demonstrate best practice to manage its residual impacts on critical habitat for such species. A further workshop is planned to discuss options in November 2014, and the results will be used to finalize a workplan and identify the practical measures that will be taken to ensure that habitat connectivity is maintained. Meanwhile monitoring of traffic levels should be progressed and monitoring of wildlife movements should continue so that any emerging trends in barrier effects can be detected.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M2.6	Apr. 14 Desktop Audit Aug. 14		Stakeholder Engagement Plan for biodiversity and ecosystem services.	I	Biodiversity Management Plan (B05) LBAP ID 24, (BMP Annex C)	Open	Section 5.9.2.3. OT has committed to develop a "targeted Stakeholder Engagement Plan"…"under the scope of the Ecosystem Services Group". This provision for ensuring effective integration of biodiversity-related stakeholder engagement requirements with OT's systems is significantly behind schedule. OT has requested an extension of timeframe for completion of this process to Q4 2014 through Notice of Change 2014-006. OT commissioned Flora and Fauna International (FFI) to review its Biodiversity Capacity Building and Stakeholder Engagement requirements. In line with the recommendations in the resulting report, it is suggested that OT's biodiversity-stakeholders should be mapped as a basis for developing a targeted engagement plan and that appropriate actions to mainstream biodiversity commitments and requirements into OTs planning systems for stakeholder engagement should be identified, e.g. through the SHCF. Stakeholder engagement underpins many biodiversity commitments and is particularly important to the design and delivery of OT's biodiversity offsets management plan (B28). OT has committed to "substantial stakeholder engagement and consultation to ensure that its biodiversity offset programme is consistent with national conservation priorities and stakeholders' interests and that it is technically, politically and administratively feasible over the long term". OT has taken measures towards meeting this commitment and has been engaged in consultation with the Government of Mongolia concerning its new Biodiversity Offsets Policy, but further dialogue is needed with the Government and several other stakeholders to ensure that OT's approach will meet applicable standards and requirements. This should be achievable within the extended timeframe that has been requested.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M2.7	Apr. 14 Desktop Audit Aug. 14		Land Use Implementation Plan or equivalent.	II	LBAP ID 18c (BMP Annex C)	Open	Section 5.9.2.4. OT committed to submit a LUIP or equivalent plan to the Lenders by Q1 of 2014, with a view to presenting a clear indication of OT's proposed commitment in terms of vegetation or habitat rehabilitation. This is required to provide a framework to monitor OT's success in meeting PS 6 requirements with respect to "no net loss" of natural habitat and also OT's Biodiversity Strategy regarding net positive outcomes for priority plant species. OT is proposing to incorporate its commitments relating to equivalence of restored vegetation into its Rehabilitation Procedure and will update other associated plans and procedures accordingly. Removal of the commitment to produce the LUIP has been requested through a Notice of Change submitted to Lenders and this is likely to be acceptable to Lenders, provided that biological aspects of rehabilitation are incorporated into the Rehabilitation Procedure as planned.
M2.8	Apr. 14 Desktop Audit Aug. 14		Procedures to implement the Illegal Wild Plants and Animal Products Policy (OT-10-E9-PLC-1001) in draft and suggested replacement Illegal Wild Plant and Animal Procedure (OT-10-E9-PRC-0005-E).	II	LBAP ID 18d (BMP Annex C)	Open	Section 5.9.2.5. The Illegal Wild Plants and Animal Products Policy (OT-10-E9-PLC-1001) included a prohibition on illegal hunting, to be communicated through induction and training to all personnel, whether employees or contractors. OT submitted a request to Lenders in a formal Notice of Change (2014-006) to replace the Policy with procedures (OT-10-E9-PRC-0005-E) which identify OT's approach to management of this issue. However these WCS identified lack of awareness of required protocols in its review and training. Revised procedures are needed which will provide a clear basis for monitoring and these need to be re- submitted for review (LBAP ID 18d, BMP Annex C).

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Social - Labor& Working Conditions							
M2.9	April 14 Desktop Audit Aug. 14		The South camp is temporary camp in operation outside of the fence. It is currently accommodating around 80 workers but may need to host up to 200 workers. In general, the camp was observed to be not of the same standard as the lodgements at the OT site. There were some housekeeping issues observed (e.g. waste management, stagnant water, fire extinguisher missing or expired), as well as potential issues with the density of residents per room, spaces between beds, and bathrooms separate from sleeping facilities. This camp is expected to close before next winter. Nevertheless, there are concerns the camp would not be able to adequately house this many workers without improvements.	I	Labour Management Plan Section 5.1.5, 5.1.8, L08	Open	Section 6.2.2. The closure of the South camp is reported to have occurred as planned by 11 August 2014. The closure and rehabilitation works will be verified at the next audit as required.
M2.10	April 14 Desktop Audit Aug. 14		Regular reporting on local content to communities is an important part of demonstrating that preferential recruitment, training and other processes are being effectively implemented. Prioritising local content is also a key mitigation measure for managing influx and therefore performance against this measure should be reported.	I	Labour Management Plan Section 5.1.2 Influx Management Plan IMPm21	Open	Section 6.2.2. The key metrics have been agreed for reporting local content to communities and authorities and a template has been developed. Regular reporting on local content including employment, training, and other activities to communities in Khanbogd and Omnogovi *aimag* now needs to commence

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Social –Resettlement, Compensation and Livelihoods Improvement							
M1.21	Oct.13April 14 Desktop Audit Aug. 14		A Completion Audit of herder households resettled as part of the 2004 resettlement compensation program is a specific commitment of the Resettlement Action Plan. The Completion Audit was conducted in March 2014 and a draft report has been prepared.	I	Resettlement Action Plan (Sections 10.1, 10.2 and 10.4)	Open	Section 6.3.2. The draft Completion Audit report is still being finalised. There have been some challenges in obtaining recent household level data on livelihoods and consumer goods ownership from affected herder households. However, OT is exploring opportunities to use the census results and other available data to make a comparison of resettled herders' livelihoods and standards of living over time. The Completion Audit report needs to be finalised as per the recommendations of the IESC (as outlined in this and the previous report).
M1.23	Oct.13April 14 Desktop Audit Aug. 14		An Outcome Evaluation of affected herders is a specific commitment in the Resettlement Action Plan and is due to be conducted for economically displaced and other affected herders in Khanbogd*soum*.	I	Resettlement Action Plan (Sections 10.1, 10.2 and 10.4)	Open	See Section 6.3.2. The outcome evaluation of herders affected by the 2011 program is still being considered as part of the multi-disciplinary study being planned by OT with the EHT and the CAO. There continues to be delays in implementing this study and as such, OT needs to decide whether or not to proceed with the outcome evaluation separately. The IESC/Lenders are available to review a proposed scope and methodology should this approach be needed. The outcome evaluation should be initiated before the end of 2014.
M1.24	Oct.13 April 14 Desktop Audit Aug. 14		A Pastureland and Livelihoods Improvement Management Plan is a commitment in the ESAP for Lenders (based on the existing Pastureland and Livelihood Improvement Strategy) and is also an important element of implementing an effective livelihood restoration program for all affected herders.	I	ESAP Item 7 Resettlement Action Plan, Entitlements Matrix Pastureland and Livelihood Improvement Strategy	Open	See Section 6.3.2. Clarify how OT intends to synthesise all of the pasture management, biodiversity conservation and livelihood improvement activities in accordance with the approved strategy. Build on the recent biodiversity workshops and other ecosystems services activities to prepare a 'road map' or similar to describe how the Strategy will be fully operationalised, including how the governance arrangements will work.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M3.1	Desktop Audit Aug. 14		Assistance to vulnerable people affected by economic displacement as a result of the mining operation is a key component of the RAP. Some support measures have been provided by OT to vulnerable herder households, however, a more comprehensive vulnerable people program is yet to be implemented.	II	Resettlement Action Plan (Section 6, Table 25 -R05, R11) Stakeholder Engagement Plan (SEP14)	Open	See Section 6.3.2.4. Some support has been provided to vulnerable herder households, however, additional assistance is required to fulfil the commitment in the RAP for a vulnerable people program. OT needs to review each vulnerable herder household, assess their current livelihood status and standard of living, and collaboratively develop a comprehensive vulnerable people program that incorporates specific livelihood and other support measures for each family. Support measures such as provision of healthcare, education support and income diversification opportunities should be considered. Implement the vulnerable people program and initiate regular monitoring of vulnerable herder households.
M3.2	Desktop Audit Aug. 14		The well rehabilitation program, supplemental fodder distribution, grazing access inside OT fence and others have contributed towards OT's commitment to implement a sustainable pastureland management program.[6] However, a review of these projects and participation by herders has identified the need for additional small scale enterprise development and income diversification opportunities for Khanbogd *soum* herders.	I	Resettlement Action Plan (Section 5)	Open	See Section 6.3.2.3. Develop and implement further opportunities for small scale enterprise development and income diversification for Khanbogd *soum* herders. Ensure contributions by OT are able to provide some immediate benefits and be self-sustaining in the future. Prioritise projects that have a combination of community-based training, provision of equipment/materials, and where appropriate, a revolving fund or equivalent access to credit. The micro-credit loan scheme, the camel shearing project, and a household level animal health support project being considered would be appropriate to further fulfil OT's commitments to implement the sustainable pastureland management program.

[6] *As described in Section 5.4 of the Resettlement Action Plan.*

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Social – Stakeholder Engagement							
M1.25	Oct.13 April 14 Desktop Audit Aug. 14		Some improvements have been made to the complaints management database and requests or enquiries are now recorded separately from complaints. The logging, allocation, and processing system for community grievances is working but OT has identified some improvements to the procedure which include classification of complaints, analysis of trends, resolution processes and defining a common understanding of what it means to resolve a complaint. The procedure is currently being revised to capture these identified improvements and OT has advised that it plans to have the revised procedure completed by the end of Q2 for implementation in Q3.	II	Stakeholder Engagement Plan (Sections 5.7-5.8, SEP09)	Open	Section 6.4.2. Finalise the community grievance management procedure based on IESC suggestions and implement. Continue to implement other improvements to the process, in particular the quality of resolutions undertaken and reported, and the management of the community grievance database.
M1.26	Oct.13 and April 14		The Stakeholder Engagement Plan includes specific commitments to regularly report on the results of the community grievance procedure to relevant communities and this is not currently being implemented by OT. The complaints management database has been strengthened which should allow this to now be readily achieved by OT.	II	Stakeholder Engagement Plan (SEP09)	Open	Section 6.4.2. Prioritise reporting of community grievances externally to communities on a regular basis. OT should consult communities on the most appropriate content and methods to do this and keep it simple but consistent.

Mission / Issue No.	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M2.11	April 14		A general Undai River community consultation plan was developed for the ESIA and included in the Stakeholder Engagement Plan (Annex E). Given the highly sensitive nature of the Undai River diversion project and the complex range of stakeholders, studies and issues, it is essential the community and other engagement on this topic is well coordinated.	II	Stakeholder Engagement Plan Annex E, SEP05	Open	Section 6.4.2. Upon receipt of the recommendation(s) from the Independent Expert Panel in relation to the Undai River, prepare/provide an issue-specific Undai River diversion project community engagement plan (or equivalent) to Lenders/IESC. Ensure that the various engagements by different OT teams and consultants are coordinated with stakeholders.

4 HEALTH, SAFETY, ENVIRONMENT AND SOCIAL PERFORMANCE MANAGEMENT SYSTEMS

Environmental and social management for the OT Project has been defined through a series of interlinked processes and documents. The first tier of these is the Framework Document – Environmental and Social Management Plan[7] (ESMP), Biodiversity Management Plan (BMP), and associated Operational Management Plans (OMPs). Additionally, the Pastureland and Livelihood Development Strategy document also provides commitments for Regional Development and Social Performance. These documents have been developed, reviewed and approved by the Project, Lenders and independent consultant. These management plans integrate the results of the Project ESIA and the Lenders' requirements, as well as cite relevant Mongolian laws and standards.

Specific measures to comply with the operational management plans have also been summarized in the ESAP, which has been prepared by the Project.

In addition to the management controls specified in its Operations BMP, OT has committed to a number of biodiversity management activities specifically required to meet Lender Standards. These are currently described in the Lender's Biodiversity Action Plan which is attached as Annex C to the Operations BMP.

The OT Project has reviewed and updated its Biodiversity Management Plan and it is now fully integrated with the OT HSE Management System. It articulates all the Project's biodiversity mitigation and offset objectives, actions and targets. A Core Monitoring Strategy is in place to ensure that requirements relating to critical habitat are progressed. A full Biodiversity Monitoring Plan will be in place by 2015. A Biodiversity Offset Management Plan (BOMP) is currently being developed and efforts are being made through extensive stakeholder engagement to ensure that this meets requirements of new Mongolian policy.

In support of the OMPs, other specific implementation plans, procedures, guidelines and policy documents have been prepared for implementation of management controls.

4.1 PROJECT STRATEGY

The Health, Safety and Environment Management System (HSE MS) framework for the OT Project is governed by the RT HSEQ MS, which is a mature system aligned with ISO 9001, ISO 14001, and OSHAS 18001 requirements and which is applied across the RT group. The Communities and Social Performance Management System (CSP MS) shares some elements with the HSE MS but is governed by the RT Communities Standards. These Management Systems were developed to manage the Project in compliance with RT, Mongolian and Lender requirements. OT's Management Systems document key components of how OT manages HSE including key management controls, performance indicators, and monitoring measures.

The OT ESMP is consistent with the RT standards, and reflects the identification and assessment of impacts and risks detailed in the integrated OT ESIA. The ESMP describes how the mitigation measures that have been identified to minimize the significant residual environmental and social impacts and risks have been incorporated into the HSE MS and CSP MS.

The Operations Management Plans (IESC March-April 2014 site visit report, Doc. No. 13-391-H2, Table 4.1) are based on the ESIA incorporating Lender requirements (mainly Performance Standards from the IFC, and Performance Requirements from the EBRD) as well as Mongolian laws and standards. The OMPs reference key implementation documents that provide additional guidance and procedures for management control, system performance or monitoring. The Pastureland and Livelihood Improvement Strategy is a key guidance document for the Communities and Social Performance (CSP) department[8], and addresses how interactions and competing interests with wildlife conservation of the same land areas as rangeland will be coordinated and resolved.

7 *Environmental and Social Management Plan – Doc. No.OT-10-PLN-0003 dated01.09.2013.*

8 *Formerly known as the Regional Development and Social Performance department.*

4.2 OBSERVATIONS

4.2.1 Status of OMPs

There have been no revisions to the OMPs, with the exception of the Biodiversity Management Plan and associated documents as discussed in the corresponding sections of this report. Additional updates regarding the Multi-year Community Management Plan and Pastureland and Livelihood Development Plan are also discussed in the corresponding sections of this report.

4.2.2 Development of Contractor Management Plans

The Contractor Management Framework document is part of the suite of OMPs to ensure contractors and suppliers involved in the project's operations implement OT standards and other requirements. The current audit did not focus on contractor management plans, and any observations regarding contractor management and coordination are addressed in the associated sections of this report.

4.2.3 Organization and Staffing

The HSE department includes five key manager positions under the general manager which are fully staffed by personnel with experience on the construction phase of the OT Project: HSE Risk and Management Systems; a Safety Manager position; Health; Environmental and Biodiversity Offsets managers. Each key manager position is supported by a team of professionals at a size appropriate to the team responsibilities. With the recent departure of one HSE Safety Manager responsible for emergency preparedness, his duties have been distributed among existing and new staff, both expat and Mongolian leaders. Continuing initiatives for building capabilities company-wide include: structured leadership skills programs; in-house training modules; and in-house coaching and mentoring.

The CSP department includes three key manager positions under the general manager. Two of these positions are staffed by personnel with experience on the construction phase of the OT Project: Manager of Regional and Community Development and Manager of the Dalanzadgad office, whilst the other manager position, Community Relations and Cultural Heritage, was filled in late 2013. This position is being filled as a consulting manager position, by an experienced RT expatriate community relations manager. Each manager position is supported by a number of staff ranging from 8 up to 21, depending on the team. Some of the support positions are currently vacant, and will be filled as necessary. It is understood that an internal review is still underway in the team since the appointment of a new Vice President of Communications in May 2014. The planned restructure is now expected to be completed by late-2014. An existing Community Relations officer is understood to have now been appointed as the dedicated complaints officer. This will be confirmed at the next site visit (See also Section 6.4.2.3).

Key roles for implementing the BMP are the Principal Advisor, Biodiversity Offsets and the OT Environment Department Biodiversity Team Leader. The team is supported by a number of high capacity consultants and external partners including The Biodiversity Consultancy (TBC), Flora and Fauna International (FFI) and the Wildlife Conservation Society. Key interfaces are clearly identified in the OT BMP as well as responsibilities of all employees and contractors.

4.2.4 Management of Change

An internal OT Management of Change (MoC) process is described in the ESMP and is applicable for instances of significant changes in Project operations. To determine if an internal MoC is required OT evaluates a proposed change using an internal Change Assessment and Management Guideline. The results of this internal evaluation determine if implementation of a formal internal MoC is required, or if the proposed modification represents normal and/or minor modifications expected during routine operations. All employees and contractors are trained to identify what constitutes a change and how to initiate the internal MoC process.

For instances in which a material change to the ESIA is required, including modification to Project Standards or Management Plans, the Project Lenders will be notified and consulted in accordance with the requirements of Table 3 of the ESMP. This external communication is referred to in this audit report as the ESIA MoC process. Although the two described processes (i.e. OT MoC process and the ESIA MoC process) have similar terminology they are distinct in that the internal MoC process is internal to OT, whereas the ESIA MoC process includes notification and consultation with external stakeholders.

The ESIA MoC procedure has been implemented by the Project, including the requisite Lender Group change notification requirement. Each "Notice of Change" submitted by OT to the Lenders outlines the description of the proposed change, reason for change, assessments undertaken and any mitigation required. Per clause 30.18 of Common Terms of Agreement if no objection notice is received by OT within 20 days from the date of submission of a Notice of Change the MoC process is completed and the ESIA updated accordingly.

The Notice of Change requests submitted to the Lenders, to date, and their current approval status are listed in the table below.

Table 4.1: Project Notice of Change

Notice of Change No.	Notice of Change Title	Date of Submission to Senior E&S Representative	Status
2014-001	Update Descriptions for the Undai River Diversion Project	20 May 2014	Rejected. Undai River Workshop on November 2014 to resolve
2014-002	Update Water Quality Testing Parameters of Water Monitoring Plan	24 June 2014	Accepted
2014-003	Update Shaft 1 Waste Rock Dump Disposition	26 June 2014	Accepted
2014-004	Update Ongoing Underground Mine Waste Rock Dump Disposition	26 June 2014	Accepted
2014-005	Update Spill Response Procedure	8 August 2014	Accepted
2014-006	Update to Biodiversity Management Plan and Annex C Biodiversity Action Plan ESIA Chapter C6	17 July 2014	Under Discussion. Notice of Objection provided by Lenders. OT preparing response.
2014-007	Update Lender BAP Commitment Regarding Barriers along OT Roads (Biodiversity Management Plan Annex C id 6 Off road traffic)	7 July 2014	Under Discussion - Accepted in principal with one objection provided by Lenders

Additional information on the submitted MoCs is contained in relevant sections of this report.

4.2.5 Monitoring and Reporting

The Project has an annual reporting requirement to Lenders for the 2013 calendar year which was provided to the IESC following the March 2014 audit, providing key highlights and developments for the operational management plans, along with performance indicators.

Quarterly Environmental and Social Updates have been prepared as quarterly reports on the Project which summarize activities and progress on initiatives in each OMP. The Q2 2014 quarterly report has been submitted by OT. These reports provide a valuable record on the focus of activities and will be useful for advance review in future audits. Additionally, the HSE Monthly Report summarizes incidents, including classification and descriptions, and addresses health, safety, environment, biodiversity, and risk management activities completed in the previous month and planned for the succeeding month. The last July 2014 monthly report has been submitted by OT on August 8th.

4.3 APRIL 2013 AUDIT NON-CONFORMANCE

No changes since the previous March-April 2014 IESC site visit.

4.4 FINDINGS AND OBSERVATIONS

Findings – HSE and CSP Management Systems
Nil

Observations– HSE and CSP Management Systems

1. Update the context of the Multi-year Communities Plan in light of these recent activities and determine how, if at all, it should be integrated into the CSP MS. It will be important for the multi-year plan to add value to, and be consistent with, these other plans and elements of the CSP MS if it is to be developed.
2. Complete the restructure of the CSP department and provide Lenders/IESC with a revised organizational chart.
3. Ensure levels of expertise and capacity to implement the OMPs commitments are maintained when key expats leave the Project.

5 ENVIRONMENT

5.1 WATER AND WASTEWATER MANAGEMENT

5.1.1 Project Strategy

Chapter C5 of the OT ESIA describes the potential environmental and social impacts related to surface and groundwater resources which could result from the construction and operation of the project. The general strategy for management of water resources, including the management of effluent streams, is described in the Operations Phase Water Resources Management Plan[9] (WRMP). This management plan cross-links with other management plans that have water resources implications. Water resource related aspects of these associated management plans are briefly summarized below:

- The Community Health Safety and Security Management Plan, in relation to potential impacts on surface and groundwater resources used by herders or the local communities;
- The Emergency Preparedness Response Plan, in relation to accidental contamination of surface and groundwater resources;
- The Mineral Waste Management Plan, in relation to waste rock management and the protection of surface and groundwater;
- The Stakeholder Engagement Plan, in relation to potential impacts on surface and groundwater resources used by herders or the local communities;
- Hazardous Materials Management Plan, in relation to control of potential contamination of surface and ground waters;
- Biodiversity Management Plan, in relation to potential impacts on springs and shallow water resources utilized by wildlife and flora; and
- Influx Management Plan, in relation to water requirements for Khanbogd, and OT's support in the identification of a suitable groundwater supply for this community.

The intent of the WRMP is to ensure efficient, safe and sustainable management and protection of limited water resources by OT departments and their contractors. The WRMP encompasses all water used by OT from the point of abstraction through its loss from the system, either within the tailings management facility or elsewhere, and emphasises the need to maximize the recycling of water to minimize volumes abstracted from local aquifers. The principal implementation procedure of the WRMP is the OT Water Monitoring Plan[10] (WMP). This WMP outlines the protocol for gathering and interpretation of data related to potential surface and groundwater impacts, as well as geomorphology impacts associated with erosion. Both the WRMP and WMP include information on the monitoring of potential impacts to the Undai River system. The WMP presents methodologies for data assessment, including criteria to be used for development of any necessary mitigations or adaptive management changes.

The ESIA MoC procedure, as identified in the ESMP, was implemented by the Project on May 20, 2014 (Notice of Change 2014-001), including the Lender Group change notification requirement. The submitted Notice of Change 2014-001 has not been accepted by the Lenders as detailed technical review of available information is pending. More information on the submitted MoC is contained in Section 5.1.2.3.

5.1.2 Observations

Findings in this section are based on a desktop review of information provided in an electronic data room and in correspondence with Environment department staff. Monitoring data related to water resources are compiled in internal quarterly Environmental Management Reports that are intended to inform management of any developing trends in environmental performance of the project, and help guide any resultant initiatives. Data from the quarterly Environmental Management reports are consolidated in an Annual Report on the Implementation of the Environmental Protection Plan. This latter report is submitted to the Mongolian Ministry of Nature, Environment and Green Development. Results of the Annual report, in conjunction with the environmental protection and monitoring requirements derived from the DEIAs and ESIA, are used to guide the following year's Environmental Protection Plan and Monitoring Program.

9 *Water Resources Management Plan - Doc. No. OT-10-E10-PLN-0001 dated 01.09.2013.*

10 *OyuTolgoi Water Monitoring Plan – Doc. No. U25Z\015e dated 09.09.2013.*

5.1.2.1 Undai River Partial Adjustment and Protection Project

Of foremost concern to OT are impacts to the Undai River system, including those to both surface water and groundwater resources. Commitments from construction phase management plans include implementation of mitigation measures in the event impacts to Undai River subsurface alluvial flows are realized. Historic water level data reflect localized impacts to the Undai River system, partially as a result of open pit development and usage of construction camp water supply wells (now no longer in use). Potential impacts of open pit development were evaluated in the Project ESIA and an Undai River Diversion Project was developed to re-route both ephemeral surface flow and continuous subsurface flow around the zone of influence of the open pit. Final engineering details of the Undai River Diversion Project are presented in the 2011 OT Project River Diversion Detailed Design Report – Final, as referenced in the ESIA. However there are some contradictions within the ESIA regarding the ultimate final design of the Undai River Diversion Project, as described later in this section.

OT is unable to implement the entirety of the planned Undai River Diversion Project, which has been indefinitely delayed due to lack of a required Land Use Permit. The Khanbogd soum Governor has the authority to issue the Land Use Permit. To date the soum governor has not provided the authorization pending resolution of a request by the soum governor for infrastructure improvements in the community of Khanbogd. This situation has been the status quo for some time and it is not known when the issue will be resolved. The lack of the requisite Land Use Permit prohibits construction activity from taking place outside of the Mine License Area (MLA). Due to this constraint the Project has completed construction activities within the MLA, including modifications to the Undai River Diversion Project to allow routing of surface and subsurface river flows around the open pit zone of influence (Phase 1 activities). OT plans to complete components of the Undai River Diversion Project outside of the MLA (Phase 2 activities) when the necessary Land Use Permit is issued, and upon finalization of on-going consultations with local herders. To address this division of works OT has implemented a new "Undai River Partial Adjustment and Protection Project", which consists of the Undai River Diversion project separated into Phase 1 and Phase 2 activities. The Undai River Partial Adjustment and Protection Project was undertaken as an interim measure until such time as the full Undai River Diversion can be completed in its entirety.

Phase 1 of the Undai River Partial Adjustment and Protection Project was completed in September 2013. Components of Phase 1 include completion of upstream (northern) and downstream (southern)Undai River channel cut-off dams. These dams are designed to prevent movement of groundwater and occasional flood waters from entering the open pit, and to help prevent any off-site migration of contamination. A surface flood diversion channel has been constructed to convey flood waters from the upgradient (north) cut-off dam to an adjacent "Western Channel" alluvial system. From the Western Channel flood waters will rejoin the Undai River downstream of the OT mine site. No significant flood events have occurred in the Undai River wince the construction of the surface flood diversion channel.

In addition a groundwater diversion system has been constructed to enable capture of groundwater flow upgradient of the north cut-off dam, and to convey these waters via a buried pipeline to a location in the Undai River alluvial channel and just within the MLA. When and if the requisite Land Use Permit is issued, and upon finalization of on-going consultations with local herders, OT plans to complete the outstanding components of Undai River Diversion Project including discharge of diverted groundwater flow to a location approximately 400 meters south of the MLA.

The two groundwater intake bores upgradient of the north cut-off dam appear to be functioning as anticipated. There has been no ponding of groundwater upstream of the northern cut-off dam which would suggest that groundwater is successfully captured for diversion. The temporary discharge location of diverted groundwater is to two outfall bores located just within the southern fence line of the MLA. The 2011 OT Project River Diversion Detailed Design report describes the routing of subsurface flow to a "splitter box", from which flow would surface during the summer months to create an artificial spring. This spring was designed to have features that replicate the original BorOvoo spring. During the winter months the artificial spring was designed to freeze, forcing diverted subsurface flow to infiltrate Undai River sands and gravel at a lower level and below the depth of freezing (i.e., without surface expression).

It should be noted that the ESIA describes conflicting criteria for both the intake and outfall groundwater diversion designs. Specifically, Chapter C5, Section 5.4.4 of the ESIA describes:

- "a perforated section of pipe extending across the width of the river at both the upstream and downstream ends of the pipeline. The pipeline incorporates a self-flushing system, and the perforations comprise a series of 50 mm diameter inlets instead of slots to provide adequate hydraulic capacity"; and
- "a gravel zone with a cobble core (nominal 150 mm) surrounding the perforated section of pipe; the zone would have a permeability substantially greater than the 10^{-4} m/s of the alluvium".

However, the same section also describes the aforementioned "splitter box" design, which consists of a vertical outfall bore instead of the horizontal configuration described above.

Similar language is provided in Section A4.11.2 of the ESIA which describes:

- "*The inflows and outflows [of the groundwater diversion pipeline] will be through a perforated pipe extending across the width of the river with 50 mm diameter inlets. This will have a gravel packer with a higher hydraulic conductivity than the alluvial sediments and the inlet will be set into the base of the sediments to ensure it captures all flow in the sediment. The gravel pack will be encased in a filter to minimise sediment load in the pipe*."

It is important to note that the ESIA and the *OT Project River Diversion Detailed Design Report* were both completed in 2011, prior to development of a full understanding of the nature of the Undai River alluvial system and in particular the behaviour of the groundwater flow regime. A more precise understanding of the system was presented in a 2013 report entitled *Oyu Tolgoi: Hydrogeological Conditions Near the Mine Site.* Two key findings from this report are as follows:

- Prior to completion of any Undai River Diversion works alluvial groundwater flow between the upstream (northern) and downstream (southern) Undai River channel cut-off dams naturally "leaked" or recharged the weathered bedrock unit that underlies the Undai River shallow alluvium unit. This connectivity between units is principally constrained to an area of the Undai River channel located near the active open pit, between the mapped Western BAT and Solongo Faults; and
- The thickness of the Undai River channel alluvial unit decreases from approximately 5 – 6 meters at the location of the northern cut-off dam location to approximately 2 meters immediately below the southern cut-off dam location. This effectively decreases the capacity of the alluvial unit below the southern cut-off dam to receive diverted groundwater and return it to the subsurface, as described in the ESIA.

Historic rate of groundwater flow in the Undai River at the northern cut-off dam location is estimated at between 2 – 5 l/s. Some of the groundwater flow historically "leaked" into the underlying weathered bedrock unit in the vicinity of the open pit, and therefore did not continue to flow down gradient in alluvial sediments. This leakage has been diminished as the corresponding reach of the river has been isolated from the overall system. This should result in an increase in the volume of alluvial flow available south of the MLA than had been previously available prior to construction of the Undai River Diversion Partial Adjustment and Protection Project. However some seepage occurs through the north cut-off dam, resulting in a loss to the system.

5.1.2.2 Current Undai River Partial Adjustment and Protection Project System Performance

Regardless of the specifics of design criteria the current outfall bores are not performing as anticipated. The two outfall bores consist of the intended injection well (the "Undai Diversion Discharge Well") and an adjacent well used for dewatering purposes in the construction of the southern cut-off dam. The Undai Diversion Discharge Well was intended to recharge diverted groundwater back to the subsurface. Instead some flow from the subsurface diversion pipeline is travelling up the gravel packs of Undai Diversion Discharge Well and adjacent dewatering well and then flowing at the surface. This is likely due to a combination of several factors:

- The presence of a thin unsaturated zone immediately below the southern cut-off dam, ranging from only 0.96 to 1.2 m below ground surface;
- The lack of concrete seals above the gravel pack of the Undai Diversion Discharge Well and adjacent dewatering bore.
- The injection of diverted groundwater into vertical outfall bores instead of injection occurring across a wider horizontal distribution of the Undai River alluvial channel; and

– The possibility that the current rate of diverted groundwater flow at the outfall location (estimated at 1 – 1.2l/s) exceeds the historical rate of groundwater flow in the alluvial channel of the Undai River at this same location.

Since September 2013 OT has monitored surface flow rate at the outfall bore location via two constructed V-notches. An in-line flow meter has recently installed in the groundwater diversion pipeline, with May 6 – June 15, 2014 data indicating an average diverted groundwater flow rate of 1.18 l/s. Previously this flow rate was very close to the approximately 1 – 1.2 l/s surface flow rates measured at the constructed V-notches near the outfall bores, suggesting saturation of the alluvium at this location. However recent data surface flow rate at the constructed V-notches show a declining trend with the most recent surface flowrates at approximately 0.34 l/s (Figure 5.1). This data indicates a significant portion of the diverted groundwater flow is now being returned to the subsurface as originally intended, with the balance of diverted groundwater still manifesting as surface flow.

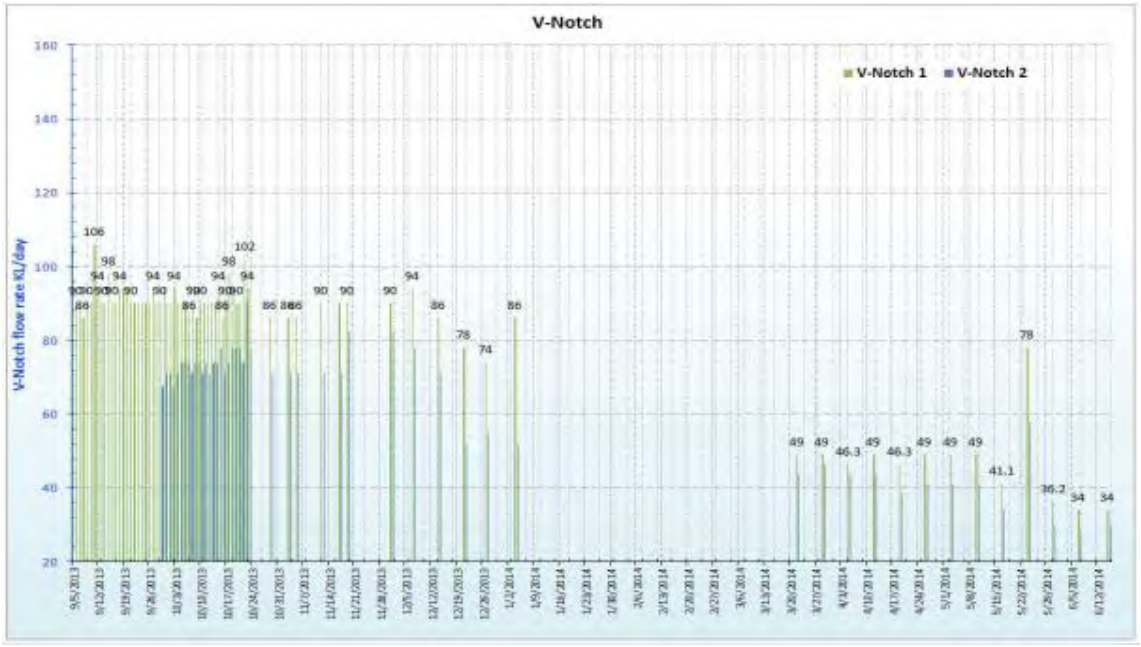

Figure 5.1: Surface flow measurements as recorded at constructed V-Notch 1 and V-Notch 2

Although not intended the surface flow at the MLA fence line has created an artificial spring that is being used by wildlife as well as herders and their livestock. In March 2014 this spring had an overall surface area expression of approximately 17,000 m^2. However recent data show a pronounced decline in the surface area of the spring to approximately 1,095 m^2(Figures 5.2 and 5.3). The 2011 *OT Project River Diversion Detailed Design Report – Final* estimated the surface area of the historic BorOvoo Spring at approximately 40 m^2. The surface area and morphology of the newly created spring appears variable dependent on climatic factors and principally freezing and thawing cycles. Groundwater diverted during winter months may "perch" on the frozen ground during winter months, with this water gradually freezing and creating an expanding ice sheet. In the spring this accumulated ice thaws likely resulting in a slug of water entering the system which in turn causes a temporary rise in water levels.

A monitoring point in the Undai River channel is located approximately 400 meters to the south of the southern cut-off dam(OTMB11-45). The alluvium immediately below the southern cut-off dam is relatively thin (2 – 3 m), although there is a limited data set with which to make conclusive determinations on the overall thickness of alluvial sediments for a broad reach below the MLA. Available information for alluvium thickness below the MLA consists of data retrieved from boring logs at one location within the alluvial channel (at OTMB 11-22/23/45). The IESC recommends that additional investigation be performed below the MLA to provide a larger database of depths of alluvium in this reach. This will be necessary to ensure adequate performance of the full Undai River Diversion, as described in the ESIA.

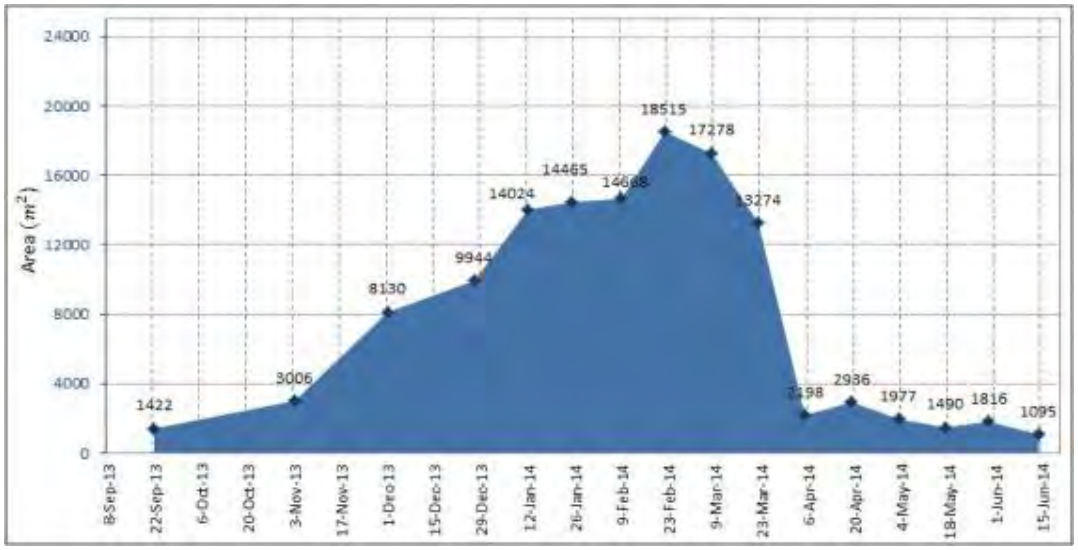

Figure 5.2: Surface area over time of spring created below the MLA

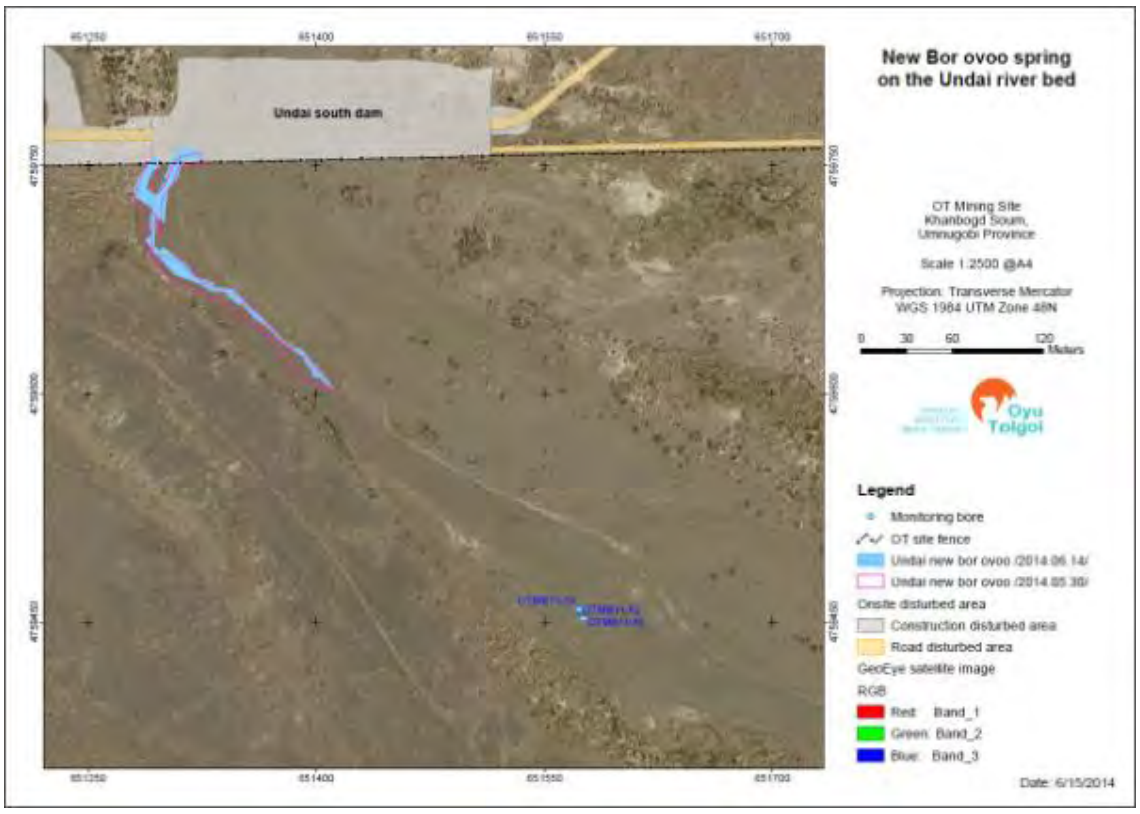

Figure 5.3: June 2014 extent of artificial spring below the MLA. This surface area of the spring has significantly declined since March-April 2014(from approximately 17,000 m^2 to 1,095 m^2).

As previously mentioned fortnightly reviews are undertaken by the Environmental department to evaluate monitoring results associated with the Undai River Partial Adjustment and Protection Project. Available monitoring data from OTMB11-45 is presented in Figure 5.4 (from May 2012 – current). A sharp increase in water level is observed beginning in April 2013 at the initiation of construction works. At that time subsurface flow from the Undai River alluvial channel was diverted up-gradient of the north cut-off dam, routed through a subterranean pipeline, and ultimately discharged through an overland hose to the Undai River alluvial surface at a location just south of the MLA. Initial dewatering discharge rates during

construction were approximately 6 l/s, peaking at approximately 54 l/s in May, 2013. There were also multiple precipitation events during the summer/autumn construction season. Data from the winter of 2013-2014 reflect stabilization of groundwater levels at approximately 1 meter below ground surface. A spring 2014 increase in OTMB45-11 water levels likely reflects thawing of surface ice which created a temporary slug of additional recharge to the alluvial aquifer. Recent trends show a gradual decline in water level followed by relative stabilization at approximately 1 m below ground surface.

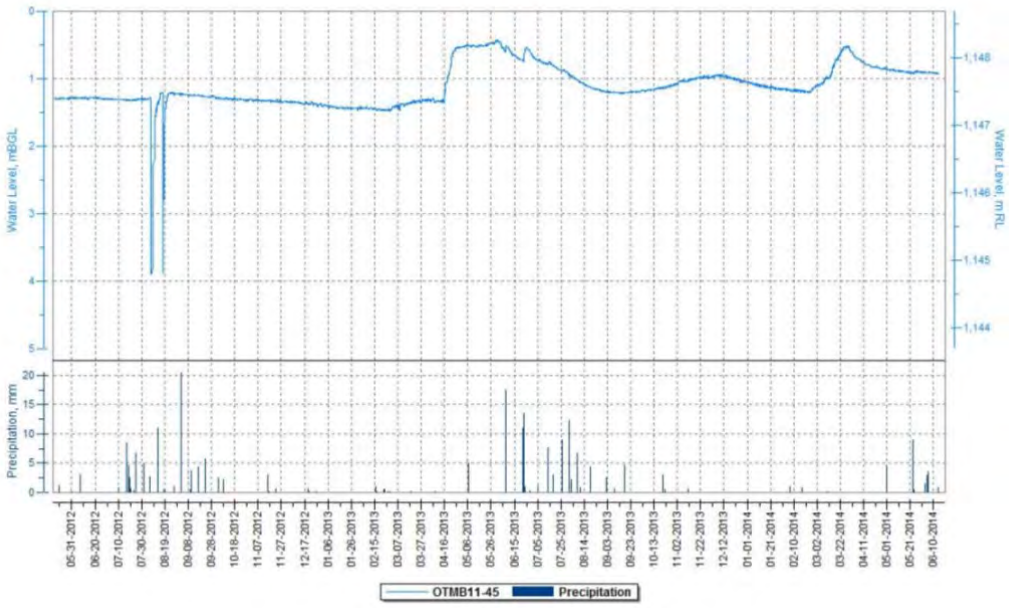

Figure 5.4: OMB11-45 - water level data (May, 2012 – June, 2014)

The next monitoring point down gradient of OMB11-45 is the KhuhkKhad natural spring which is located approximately 4 km south of the MLA. Available water level depth data for this spring are shown in Figure 5.5. The data set is somewhat limited due to gaps in record keeping and the difficulty in obtaining valid measurements during the winter months due to the freezing conditions.

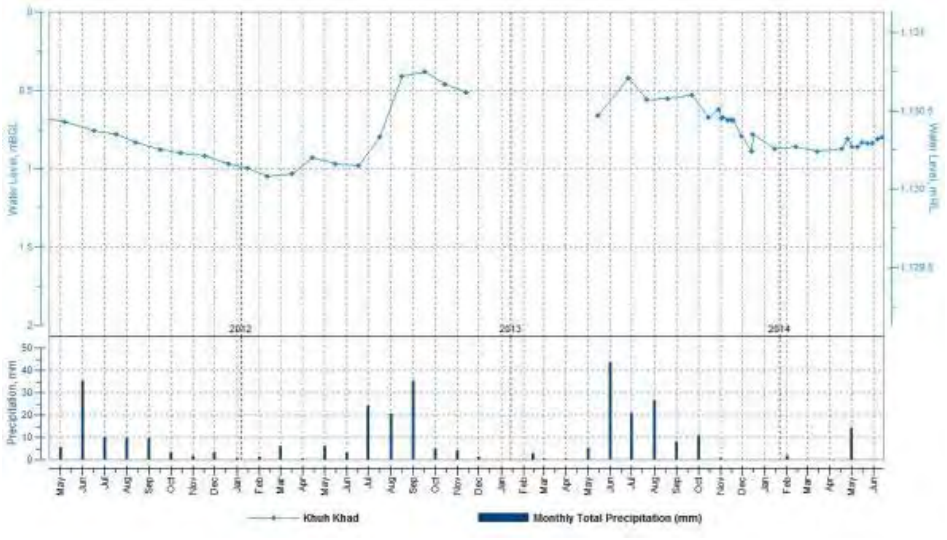

Figure 5.5: Water Level data from KhuhKhad (May, 2012 – June, 2014)

Beyond KhuhKhad the next shallow alluvial monitoring points in the Undai River channel are OMB11-22/OMB11-23, both located approximately 5 km south of the MLA. These data points are located below the confluence of the Undai River with the Western Channel and are therefore subject to recharge from regional flood events. Data from the OMB11-23 well, which behaves similarly to OMB11-22, are shown on Figure 5.6.

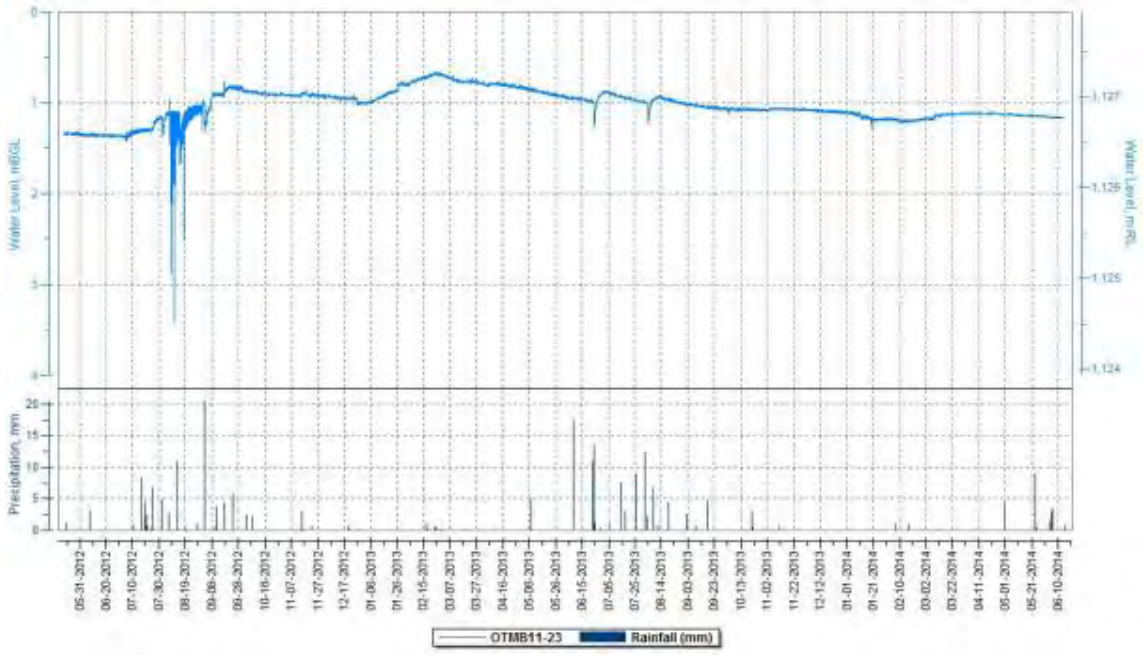

Figure 5.6: Water Level data from OTMB 11-23 (May, 2012 – June, 2014)

OT has implemented monthly water quality monitoring at the surface spring created south of the MLA and results shows general conformance with Mongolian Drinking Water Standards (MNS 900-2005). Total Disolved Solid (TDS) and Electrical Conductivity (EC) values that are lower than those associated with the original BorOvoo spring, suggesting overall improvement in surface water quality.

Table 5.1: General water quality of original BorOvoo Spring relative to current interim spring

Parameter	Original BorOvoo spring	Current interim spring south of the MLA [1]
Total Disolved Solids (TDS) – in mg/L	470 [2]	343
Electrical Conductivity (EC) – in ms/cm	1,500	540

[1] *Average of sampling results*

[2] *Based on two laboratory results; possibly historically higher based on typical TDS/EC correlation factors in mine site groundwater and surface waters.*

5.1.2.3 Current Undai River Partial Adjustment and Protection Project Impact Analysis

Chapter C5, Section 5.4.2 of the ESIA contains the following language:

- "*The overall objective of the design of the diversion is to minimise and manage the impact of the diversion by ensuring that the diverted flows are returned efficiently to the river bed downstream so as to maintain surface and subsurface water flows within the local ephemeral watercourse network. In particular the design of the subsurface flow ensures that there are no groundwater losses through evaporation caused by the diversion between the inlet and replacement spring.*"

The Undai River Diversion Partial Adjustment and Protection Project has been completed for approximately one year. In March, 2014 Rio Tinto's Technology and Innovation Group prepared an internal memoradum entitled *Undai River Diversion – "New BorOvoo Spring" Water Resource Affects*

Evaluation". This memo summarized existing information and provides key conclusions for use by Project management. In the March-April 2014 audit the IESC recommended that a stakeholder critical review of this memo be undertaken to verify the key findings and interpretations.

The MoC procedure, as set out in the Environmental and Social Management Plan of the ESIA, was implemented by OT on May 20, 2014 (Notice of Change 2014-001). The MoC procedure was initiated by OT to (a) address inconsistencies in the ESIA with respect to design and construction of the full Undai River Diversion; and (b) address non-conformance of the Undai River Partial Adjustment and Protection and Protection Project with commitments in the ESIA (relating to works described to occur outside of the MLA). In response on June 6, 2014 the Lenders issued a Category 1 Objection Notice to the Notice of Change 2014-001 based on technical concerns related to conformance of the existing Undai River Partial Adjustment and Protection Project with commitments of the ESIA and associated Operational Management Plans.

A workshop allowing stakeholder critical review of the Rio Tinto *Undai River Diversion – "New BorOvoo Spring" Water Resource Affects Evaluation"* memo, as well as all other available hydrogeologic information, has not taken place since the March - April 2014 IESC recommendation (*Note: this review is currently planned to take place in November, 2014*). The memo forms the basis for a submitted ESIA MoC regarding ultimate construction details of the full Undai Diversion project. The IESC recommends that in particular findings related to the volume of groundwater currently available in the Undai River system relative to pre-OT construction activities be critically reviewed to ensure definitive agreement. The Undai River groundwater system is a very sensitive environmental resource and a precautionary approach is required to ensure there is not a reasonable likelihood of negative impact to the system relative to the pre-OT construction timeframe.

As shown on Figure 5.4water levels in the nearest down gradient monitoring point (OTMB 11-45) are slightly higher than historic pre-diversion values, with that data set beginning in the summer of 2012 (approximately 1.0 meters below ground level (mBGL) now relative to ~ 1.2 mBGL in the summer of 2012). However, at this time construction activities for the Project had already commenced, with pumping from the Undai River groundwater system taking place to provide water supply for the OT construction camp. Negative impacts to the Undai River system had by that time already been realized as evidenced in the gradual drying of the BorOvoo spring. Therefore the available data set for depth to water levels below the MLA may not necessarily reflect pre-OT construction baseline conditions. There has also been a gradual declining, but now recently increasing, trend in water level at the ephemeral KhuhKhad spring (Figure 5.5). This spring has historically gone dry during sustained dry climatic conditions. A slightly declining trend is apparent at OMB11-23 monitoring point located 5 km south of the MLA, which may again reflect the recent dry conditions in the region.

The data presented in Figure 5.4–Figure 5.6 suggests that although initial groundwater level response has been favourable, more time is needed to arrive at full conclusions regarding the efficacy of the current Undai River Diversion Partial Adjustment and Protection Project in maintaining long-term subsurface water flows within the Undai River channel. There is a lack of pre-OT construction baseline data for the Undai River below the southern cut-off dam location, a lack of detailed information on alluvium thickness below the MLA, and approximately one year of post-construction data from a single monitoring point below the MLA (OTMB11-45). A recent and unanticipated decline in water levels at OTMB11-45 reinforces the need to increase the understanding of how the groundwater diversion system is functioning over time. The ultimate success of the Undai River Diversion Partial Adjustment and Protection Project (and the fully constructed Undai River Diversion) will be assessed based on the long-term viability of KhunKhad spring and other springs located down gradient of the OT site, and long-term depth to groundwater data provided from Undai River monitoring points.

See also Section 5.9.3 for discussion of biodiversity and ecosystem services implications of the artificial spring and Section 6.4.2.1 for discussion regarding engagement with stakeholders in relation to Undai River diversion works.

5.1.2.4 Water Use in the South Gobi

OT has committed to working with the Government of Mongolia, non-governmental organizations, and other public and private water users in the South Gobi region to assist in the development of a sustainable model for water use in the region. OT participates in a number of initiatives to further this objective and most recent undertakings are briefly described below:

- *2030 Water Resources Group*. OT participated in the April, 2014 pre-meeting and workshop concerning recommendations of the PwC and Deltares report entitled "*Targeted Analysis on Water Resources Management Issues in Mongolia*".
- *Umnugobi Province/DZ Government roundtable meeting in KB*. Participation in the April 2014 meeting with government officials to discuss regional water management.
- *IFC South Gobi Water, Mining and Communities Industry Roundtable*. OT participated in the May 2014 sixth South Gobi Water, Mining and Communities Industry Roundtable event. The event included the discussion of establishment of a coordinated mission/vision statement and a voluntary code of practice by mining companies operating in the south Gobi.
- *IFC South Gobi Water, Mining and Communities Senior Leadership Roundtable*. The Project participated in the May, 2014 leadership training and roundtable event held in Terelj.
- *IFC Sustainability Exchange*. OT attended this event held in Washington DC, including participation as a panel speaker for a session with the theme of collective action for water stewardship by the mining industry in Mongolia.
- *Mongolia Ministry of Environment and Green Development (MEGD)*. OT participated in a conference held by the MEGD on environmental management at mine concentrating facilities.
- *Erdenes MGL*. Erdenes MGL is a state-owned company that is a 34% shareholder to the OT project. Representatives from this organization visited the OT site in June 2014, in part to discuss environmental and water considerations.

5.1.2.5 OT Water Usage and Conservation

The OT Project is permitted to withdrawal water from 28 production wells installed in the regional GuniiHooloi aquifer, which is brackish, at a rate of 870 l/s (approximately 75,000 m^3/day). Total groundwater extraction by OT in year 2013 was 11,392,209 m^3, or approximately 31,200 m^3/day. By far the biggest use of water by the Project is within the concentrator circuit at which water recovery efforts are undertaken to recycle a large percentage of water used. Overall, the Project is achieving an 83.58% recycling efficiency rate, above the 80% threshold minimum criteria included in key performance indicators but below the 90% target rate. Overall water usage and recycling rates have increased in the February – May 2014 time period and are related to the spring melt of accumulated ice at the TSF. Ongoing success is being realized in optimizing water management at the TSF, with recent notable improvement in tailings solids density being achieved following repairs to the tailing thickener rakes. OT site-wide water consumption is currently 547 l/ton of ore produced, less than half of the global average usage rate of 1,220 l/ton-ore.

5.1.2.6 Water Monitoring

The Project maintains a water monitoring program that encompasses 378 boreholes, 125 herder wells and 10 natural springs. These monitoring points include locations in the Khanbogd, Manlai and Tsogttsetsii soums of Umnugobi aimag, and the Ulzii soum of Dundgobi aimag. No direct or indirect OT Project impacts to herder wells or natural springs have been identified in current environment department analysis, although the department is continuously monitoring water level data to identify any possible correlation. Any observed water level decreases or changes in water quality triggers an assessment of the subject herder well, including a physical investigation and organization of a meeting with the owner of the well. OT has committed to taking corrective actions should any project impacts be realized.

In 2013 some herders expressed concern over the condition of three shallow herder wells installed in the ephemeral Khaliv River alluvial system, which passes through the south western corner of the GuniiHooloi aquifer. Herder wells in the Khaliv River alluvium are located upgradient of the portion of the Khaliv River that cross the GuniiHooloi borefield. These wells are highly susceptible to climatic variation as the alluvial sediments in the upper Khaliv River are thin, and the drainage basin much more limited in aerial extent than other systems such as the Undai River drainage basin. After assessment of the data associated with the three Khaliv herder wells it was determined that water level variation is a factor of herder well use and recent dry conditions in the region.

Currently 23 herder families are involved in the Participatory Monitoring Program encompassing a total of 30 wells. Data collected through this program is evaluated in conjunction with data collected by the Project. Over the past three years the project has rehabilitated approximately 60 herder wells with plans to rehabilitate an additional 29 wells identified as priority locations in community bag meetings. These

include wells in the Khanbogd, Bayan-Ovoo and Manlai soums. Results of the rehabilitation efforts are communicated to the public in written disclosure materials, and IESC Audit Team discussions with herders and government officials indicate positive stakeholder feedback (see Section 6.3.2.3 for more details).

The monitoring of flood events, to the extent possible, is an important part of the Water Monitoring Plan . The OT Project has installed eight flood gauge posts with automated water level measurement equipment within the MLA, outside of the MLA along the Undai River channel, and in the GunniHooloi region (Figure 5.7). Fixed concrete flood monitoring reference points have been installed at these locations. A Standard Work Procedure has been developed to ensure consistent measurements across flood events. The Standard Work Procedure includes methodologies for the recording of flood velocities via use of floats tethered to ropes, and corresponding measurement of distance travelled over time. The Open Pit Survey Team will provide survey information for the cross-section morphology of each flood monitoring location. This information will be used to estimate the overall discharge of flood events.

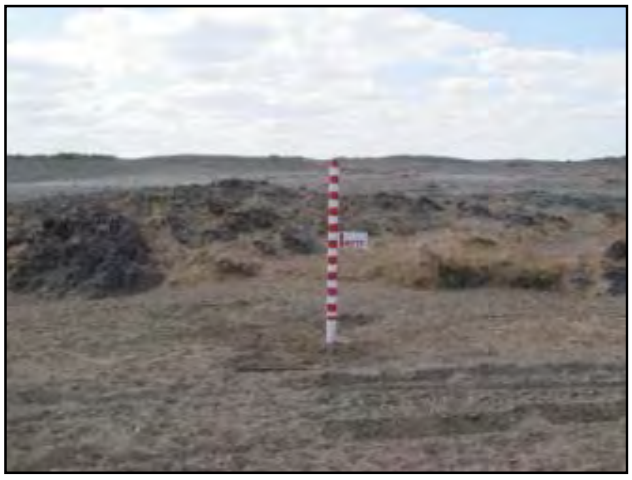

Figure 5.7: Installed flood gauge post on Budaa River, a tributary of the Undai River

Section 3.4.3 of the WMP describes the procedures that will be used to monitor natural springs that occur along the Undai River channel, and down gradient of the MLA. In June 2014 OT began implementation of a "Conduct Spring Photograph" Standard Work Procedure. The Standard Work Procedure identifies monthly photographs from a fixed reference point (Figure 5.8).

Figure 5.8: Fixed monument location for spring photography.

Deepest water level depths are measured using a linear ruler as the installation of a graduated and fixed reference within a spring is discouraged by community members. The IESC recommends that an estimation of spring surface area using visual observations and pace also be entrenched within the Standard Work Procedure.

5.1.2.7 Shallow and Deep Aquifer Interconnection

The implementation of mitigation measures in the event of aquifer interconnectivity is a requirement of the Water Resources Management Plan (WR-04). Due to degradation over time of installed steel stack pipes and gravel packs there is recognized cascading behaviour at a collection of exploration boreholes located in the vicinity of the GuniiHooloi regional aquifer. Following extensive community consultation regarding the method of abandonment to be employed three of the known six cascading boreholes were successfully sealed in 2013 (sealed boreholes include GHW5x1, GHW6x1, and GHEB-02). Boreholes that exhibit cascading behaviour and which remain to be sealed include GHW14x1, GHEB-08, andCGHW4x6. A working group has been established by the Khanbogd soum Governor to investigate the possibility of additional hydrogeologic communication in exploration bores located in the GuniiHooloi region and also to make recommendations as to how any identified cross-communicating bores should be abandoned. There are approximately 300 exploration bores in the GuniiHooloi region, 37 of which have similar construction specifications as the recognized cascading boreholes.

Interconnecting boreholes have also been identified within the ML in the vicinity of the Undai River. As discussed below a Scope of Work has been developed by OT to abandon all interconnecting bores, or otherwise convert them to productive use (e.g., conversion of these bores to piezometers).

5.1.2.8 Hydrogeology Studies

A groundwater model update for the GuniiHooloi borefield was completed in December, 2013. In June 2014 an *Open Pit Hydrogeology and Pit Slope Depressurization Update* was completed as follow on to the 2011 report: *Open Pit Hydrogeology and Pit Depressurization Feasibility Study*. The more recent study updates the conceptual model for the open pit and describes ongoing piezometer monitoring, and planned in-pit vibrating wire and piezometer installation that are intended to refine understanding of pit inflows. Information from this report will also be used to improve the existing pit water management strategy. To date inflows into the pit have been less than 8 l/s and are typically in the range of 1 – 3 l/s. The study highlights a need for a dedicated booster and pipeline system to negate the need for storage and management of storm water in the working areas of the lower pit.

Hydrogeology studies investigating development of a sustainable water supply for Khanbogd soum continue to progress. In December 2013 the *Groundwater Model and Borefield Development Scenarios – Khanbogd Basin* report was finalized. This report includes the groundwater model used to guide borefield installation. Two favorable areas have been identified for supply – north-northeast of Khanbogd and in the far west of the Khanbogd basin. A SoW has recently been developed for the drilling and construction of up to four production wells to provide a water supply for the Khanbogd soum.

In May 2014 OT issued a SOW with an external consultancy for an over-arching *Hydrogeology Consultancy Services* contract. This contract will commence in August 2014 and encompasses a number of distinct tasks including:

- General hydrogeological support and assistance, as requested;
- Upgrading of the OT regional hydrogeological model;
- Assistance in implementation of the WRMP, including database management, QA/QC, training and reporting requirements;
- Supervision of supplementary monitoring bore installation; and
- Annual review of hydogeologic monitoring results.

Also in May 2014 a separate *Additional Water Monitoring Bore Installation – GuniiHooloi and Oyu Tolgoi* SOW was developed for the drilling and installation of supplementary monitoring bores at the locations described in the WRMP. It is estimated that a total of 37 monitoring points will be installed in the GuniiHooloi region, within the MLA, and within the OT active mining operations footprint (i.e., at the open pit, in drainage channels, and upstream/downstream of the TSF). This SOW also includes the sealing of interconnecting bores in the GuniiHooloi region and sealing of interconnecting bores along the Undai River, as discussed in Section 5.1.2.7.

An internal *Erosion Monitoring Report* was prepared by OT in June 2014 to address WRMP erosion and sedimentation monitoring requirements. The report describes erosion/sedimentation monitoring at the following locations:

- Undai River including the Western channel;
- Undai River springs located downgradient of the MLA including Khukhkhad, Bural and Maanit;
- Road crossings of drainage channels located within the MLA; and
- Road crossings of drainage channels located outside of the MLA including the road to KB (OT – KB road), along the water supply pipeline road from GuniiHooloi, and the OT – GS road.

Over 470 photographs were taken a 100 m intervals along the Undai River channel, beginning at the point at which the Undai River channel enters the OT site, and ending at the confluence of the Western channel with the Undai riverbed. Over 200 photographs were taken at road crossings of drainage channels located outside of the MLA (9, 46 and 4 crossings along the OT – KB, OT – GS, and GuniiHooloi water supply pipeline roads, respectively). As these are the first photographs taken for the purpose of documenting erosion and sedimentation over time they will be considered baseline information to track any future erosion impacts. A *Soil Degradation and Landscape Change Study* has been awarded to an independent consultant, with fieldwork in progress. This study will also include erosion monitoring at culverts, springs, herder wells and ephemeral stream crossings. The IESC recommends that later effort include consideration of any potential impacts to surface water flow and recharge to alluvial sediments from the road that has been constructed across the Undai River channel leading to the OT Central Heating Plant. It is anticipated that the *Soil Degradation and Landscape Change Study* will be completed by the end of 2014.

5.1.2.9 Potable Water and Treated Effluent

The Project has committed to meeting Project Standards for both potable water and for treated effluent. These Project Standards are identified in Tables A1 and A2, respectively, of Annex A of the Water Management Plan. OT has completed an Accredited Laboratory analysis of available domestic laboratories, and confirmed that the full suite of determinants (regulatory parameters) identified in these tables cannot currently be sampled for with instrumentation available at the national laboratories. The use of laboratories in other countries is problematic due to shipping times and associated holding times for samples.

An ESIA MoC was submitted on June 24, 2014 to update the water quality testing parameters of the WRMP based on capabilities of Mongolian laboratories (Notice of Change 2014-002). The parameters that are not currently sampled for are not considered key indicators and the MoC has been approved.

Most recent wastewater and potable water sampling results indicate conformance with Project Standards. No pathogenic bacteria were detected in scheduled testing. OT continue to investigate the use of a single laboratory or range of laboratories that will allow full testing of all parameters identified in the sampling suites identified in the WRMP.

5.1.3 Findings and Observations

Findings- Water and Wastewater Management

M1.1 Planned Undai River Diversion works outside of the Mine License Area (MLA) are pending regulatory approval (a requisite Land Use Permit). Although the current system is considered temporary it is not known when the requisite Land Use Permit will be issued allowing for works to be implemented as detailed in the ESIA. Some inconsistencies exist in design criteria for the Undai River Diversion as presented in the ESIA.

The ESIA MoC procedure, as identified in the ESMP, was implemented by the Project on May 20, 2014 (Notice of Change 2014-001), including the Lender Group change notification requirement. The purpose for implementation of the MoC procedure was to (a) address non-conformance of the existing Undai River Partial Adjustment and Protection project with commitments of the ESIA; and (b) address inconsistencies in the ESIA with respect to design and construction of the full Undai River Diversion project (i.e., works to occur outside of the MLA). The submitted Notice of Change 2014-001 has not been accepted by the Lenders as detailed technical review of available information is pending. A workshop to undertake a critical review of the *Undai River Diversion – "New BorOvoo Spring" Water Resource Affects Evaluation"* memo, as well as all other available hydrogeologic information, has not taken place since the March-April 2014 IESC recommendation (*Note: this review is currently planned for November, 2014).*

M1.5	Evidence exists of exploration bores interconnecting hydrogeological units within the GuniiHooloi borefield and within the Mine License Area. Three of the six known bores exhibiting this interconnection have been sealed and abandoned. Sealing of the three remaining known interconnecting bores outside of the MLA is currently under evaluation by a workgroup established with the Khanbogd soum. In May 2014 the Project issued an SOW that includes the sealing of interconnecting bores both within and outside of the MLA. Best efforts are being made to progress the sealing of any interconnecting bores outside of the MLA; however the issue is outstanding. The sealing of potentially interconnecting bores within the MLA should take place upon execution of the referenced SOW. (IESC April 2013 Audit; WR04, WR14).
M2.2	The WMP describes the procedures that will be used to monitor natural springs that occur along the Undai River channel, and down gradient of the MLA. In June 2014 OT began implementation of a Standard Work Procedure entitled "*Conduct Spring Photograph*". The Standard Work Procedure identifies monthly photographs to be taken from a fixed reference point. Deepest water level depths are measured using a linear ruler as the installation of a graduated and fixed reference within a spring is discouraged by community members. An estimation of spring surface area using visual observations and pace should also be entrenched within the Standard Work Procedure.(WMP Section 3.4.3).
M2.3	The WMP and WRMP discuss additional studies and efforts that will be undertaken by OT address commitments made in these plans. OT has developed Scope of Work (SOW) documents to address these commitments. Although awarded the contracts have not yet been executed. Actions included in the SOWs include the drilling and installation of supplementary monitoring bores; erosion monitoring at culverts, springs, herder wells and ephemeral stream crossings; and general hydrogeologic consulting assistance in the review of monitoring results, QA/QC assurance, and the oversight of supplementary monitoring bore installation. Auditing of the completion of works detailed in the SOWs will be tracked to ensure timely conformance with the commitments made in the WMP and WRMP.(WMP 5.2, WR14, WRm06, WRm11).

Observations–Water and Wastewater Management

1. It is recommended that annual reporting contain a specific subsection that discusses any identified potential impacts to herder wells, and that describes efforts undertaken to investigate any observed downward trends.
2. It is recommended that fortnightly reviews of Undai River Partial Adjustment and Protection Project performance include evaluation of rates of diverted groundwater measured as surface flow relative to the rate presumed to be returned to the subsurface. Causes of seasonal variation in the surface area of the created surface spring should also be discussed.
3. It is recommended that the access road to the boiler house, which crosses the Undai River channel, be evaluated to determine any potential impacts to surface water flow and recharge to alluvial sediments. This could be included in the pending scope of work for the *Soil Degradation and Landscape Change Study*.
4. It is recommended that additional investigation be performed in the Undai River channel below the MLA to provide a larger database of depths of alluvium and depths to groundwater for this reach.

5.2 MINERAL WASTE MANAGEMENT

5.2.1 Project Strategy

The Mineral Waste Management Plan[11] (MWMP) addresses environmental conditions associated with the waste rock, overburden, tailings and combustion ash. Key elements of the Project strategy are documented in previous IESC audit reports. Since the April 2014 IESC audit and report, two Management of Change (MoC) notices dated 26 June, 2014 have been received relating to mineral waste management and implemented without Lender comment: MoC 2014-003 Update Shaft 1 Waste Rock Dump Disposition; and MoC 2014-004 Update Ongoing Underground Mine Waste Rock Dump Disposition. MoC 2014-003 provides recognition that Shaft 1 development rock is unsuitable for processing through the concentrator due to mixed waste/ore content and the presence of construction metal and other objects that could damage equipment, and that this material will be managed in conformance with the design and monitoring requirements of a Potentially Acid Forming (PAF) mineral waste. During the course of underground mine development, the rock material in the Shaft 1 stockpile will be transferred to established open pit PAF waste rock dump or will be used in designated PAF zones of the Tailings Storage Facility (TSF). Key Management Control MW05 contained in the MWMP has been changed to reflect this action.

MoC 2014-004 provides recognition that the waste rock encountered during development of Shaft 2, 3, 4, and 5, as well as access incline CS2, will be segregated to establish temporary non-acid forming (NAF) rock stockpiles for reuse as construction / closure materials, and PAF rock placed in an integrated (servicing all shafts and inclines), permanent rock dump that is managed and monitored in accordance with PAF standards. The permanent rock dump will be established in the vicinity of the current Shaft 2 waste rock dump. Management and monitoring standards are contained in the OT Integrated Mineral Waste, Acid Rock Drainage and Dump Management Implementation Plan. Key Management Control MW06 contained in the MWMP has been changed to reflect this action. The TSF design and MWMP are consistent with the IFC Environmental, Health and Safety Guidelines for Mining (2007), as summarized in the following paragraphs. In the absence of specific Mongolian design criteria, Canadian standards (CDA, 2007) were adopted for guidance in selecting design criteria for the TSF. . The TSF design as documented in the KlohnCrippen Berger, Ltd (KCB) 2010 TSF Design report, is undergoing modification to address observed tailings deposition conditions. The following design changes are being prepared by Golder Associates for the TSF embankment dam, as documented in their 21 May 2014 report: (1) elimination of upstream and centerline embankment raising along the north, west and south perimeters, and employment of downstream embankment raising along all sides (similar to the original design for the east perimeter along the reclaim pond); and (2) designation of multiple filter zones within the upstream portion of the TSF embankment dam along all perimeters.

The Site Emergency Response Plan identifies the tailings dam failure scenario among the types of incidents for preparation of procedures. Emergency Response Procedures for this failure scenario have not been prepared. Cell 1 of the TSF is expected to be constructed to a height of more than 40 meters over the next 5 years, which could represent an inundation hazard to structures on the MLA and conditions downstream and warrants a breach analysis to evaluate the extent of impacts and preparation of appropriate emergency preparedness and response procedures.

The Mine Closure Plan (2012) includes measures to implement reclamation upon permanent closure and in response to temporary closure, post closure monitoring, and financial feasibility. The plan is assessed by OT on an annual basis as part of closure cost estimate reporting, and reviewed and updated once every five years in order to reflect changes in mine planning or closure strategies, and changes in costs. The Mine Closure Plan was reportedly updated in 2014 to reflect IESC April 2013 report comments.

5.2.2 Observations

MoC 2014-003 incorporates planned disposition of Shaft 1 stockpile rock and changes Management Control MW05. The stockpile is founded on naturally occurring clay, is contained within a berm, generally consistent with the requirements of PAF rock dump under the Integrated Mineral Waste, Acid Rock Drainage and Dump Management Implementation Plan. A feasibility study (updated 27 June 2014) provides information on the tentative schedule for additional use of the Shaft stockpile (May 2015-September 2018) and assumes that adequate space is available to expand the stockpile if required. The

11 *Mineral Waste Management Plan- Doc. No.OT-10-E8-PLN-0001 dated 01.09.2013*

feasibility study also assumes that the stockpiled materials may be recovered for ore processing or relocated to a permanent PAF waste storage location at the end of the project. There is no reference to monitoring or the duration that the Shaft 1 stockpile will be maintained before relocation, but the proposed change to Management Control MW05 indicates that it will be managed as a PAF stockpile until final disposition, which would include associated monitoring plans for rock spillage, stability, erosion, and drainage. PAF standards include containment of drainage and monitoring, such that the groundwater monitoring under the Water Monitoring Plan for the Shaft 1 stockpile containing PAF rock should be reviewed and updated as necessary. Issue M1.8 will be retained as a Level 1 non-conformance until the Water Monitoring Plan for the Shaft 1 stockpile containing PAF rock is reviewed and updated as necessary.

MoC 2014-004 incorporates planned disposition of other shaft and incline development rock, including the current Shaft 2 waste rock dump, creating an integrated permanent waste rock dump in accordance with PAF management and monitoring requirements. The existing Shaft 2 stockpile is founded on naturally occurring clay, is contained within a berm, beyond the influence of Undai River flood events, and generally consistent with the requirements of a PAF. A feasibility study (updated 27 June 2014) provides information on the required capacity for a proposed Central Stockpile to be established in the vicinity, and possibly integrated with, the Shaft 2 stockpile. The feasibility study indicates material handling and management during underground development during the tentative schedule of May 2015 to June 2019. The proposed change to Mineral Waste Management Control MW06 indicates that underground development rock will be segregated between NAF and PAF rock, and PAF rock will be placed in an integrated (servicing all shafts/inclines) underground rock dump, managed and monitored in accordance with PAF standards. The Proposed Change states that NAF rock may be placed in temporary stockpiles for other use or placed in the proposed integrated underground mine rock. PAF standards include containment of drainage and monitoring, such that the groundwater monitoring under the Water Monitoring Plan for the proposed integrated underground development PAF rock dump should be reviewed and updated as necessary.

Monitoring of stockpiles and mineral waste rock dumps is managed under the Geotech Open Pit Key Performance Indicator Program, which demonstrates the monthly inspection scheduling, and a completed inspection checklist for 17 July 2014 confirms that records of inspection for stability, erosion and drainage are being maintained. Should drainage be detected from stockpiles or rock dumps, the checklist includes contact of the Environment Department for sampling and testing. Stockpile maintenance including removal of rock spillage over the containment berm has been reported.

Tentative concepts for reclamation of the Waste Rock Dumps (WRDs) is addressed in the Integrated Mineral Waste, Acid Rock Drainage and Dump Management Implementation Plan. A plan for implementation of a trial reclamation plot on some initial lifts of the Waste Rock Dump is scheduled to be prepared before the end of 2014, with implementation in 2015. Monitoring of the trial plot over several years will aid in establishing reclamation procedures. The timing for reclamation of completed surfaces of the WRD would be dependent on establishment of final dump limits.

Cell 1 of the TSF is being raised to accommodate continuing tailings disposal under a quality control inspection and testing program conducted by Golder Associates, and subject to quarterly quality assurance review and reporting by KCB. The KCB reports include tabular summary of issues that remain open and the current status. OT reviews the QA reports with their Construction Team and QC Engineer to address issues, and the RT Internal Tailings Expert also receives copies of the KCB reports. TSF construction meetings include the topic of unresolved QC and QA issues. Based on the recent KCB QA Report (23 July 2014), 5 of 17 outstanding issues from their previous visit in March have been resolved, with progress made toward resolution of 5 of the remaining 12 issues. Concerns relating to acceptability of materials placed in embankment zones identified from November 2013 and March 2014 (e.g., Items 53, 56, 63, 64) remain open, with significant improvement reported for placement of gravel filter zone materials (Item 64), while no reported progress on other open items.

Monitoring testing and reporting of tailings deposition in the TSF is continuing, indicating density and beach slopes which are less than anticipated in the original design (density of 1.2 t/m^3 vs. 1.4 t/m^3, and slope of 0.4-0.5 % vs. 1%). The tailings density will affect the TSF capacity requirements, and the beach slope will affect the drainage from the tailings and freeboard and dike raising requirements of the perimeter embankment dam. OT is planning to implement a flocculent trial program between July and September 2014 to increase density and beach slope. The minimum freeboard reported in July at the reclaim pond met or exceeded 3.3 meters, consistent with the design requirement.

The TSF Operations, Maintenance and Surveillance Manual provides guidance for monitoring, including seepage emanating to collection ditches. As part of the Water Monitoring Plan, a surface geophysical survey employing Electrical Resistivity Tomography was completed outside the perimeter of the TSF with the intent of establishing a baseline water quality conditions as well as contributing to the definition of bedrock geology in the area. Subsequent surveys may detect changes in electrical resistivity, which could infer information about TSF seepage and groundwater quality changes. The results of the initial geophysical survey and baseline information is contained in the 5 May 2014 Report on Electrical Resistivity Tomography Study of TSF area at Oyu Tolgoi Copper Mine, by Geophysics and Drilling Service Company.

Golder Associates is performed engineering analyses considering design modifications to the TSF to accommodate lower density and flatter beach slopes by employing downstream construction in embankment areas which were previously planned for upstream or centreline construction, as documented in their 23 May 2014 report. The design modifications maintain established freeboard requirements to meet the design flood, and employ embankment zoning generally consistent with the original design to control seepage water from the tailings into downstream TSF embankment zones. Static and seismic loadings, including consideration of liquefaction, are addressed in the report, which presents computed factors of safety consistent with the original criteria established for the TSF. Seepage analyses were conducted to determine piezometric levels and support the slope stability evaluations, but the report does not address the seepage analyses, computed rates, and performance of upstream embankment zones to protect the planned use of PAF material in downstream zones (Zone 3C and 3D).

The Independent Technical Review Board (ITRB) was previously briefed on the TSF construction and operation in March 2013. KCB, while acting as the QA Engineer, report on embankment construction but have refrained from addressing tailings disposal operations. IFC guidance recommends that an independent review be undertaken at design and construction stages with ongoing monitoring of both the physical structure and water quality during operation.

5.2.3 Findings and Observations

Findings – Mineral Waste Management

M1.8 The stockpile for Shaft 1 may be used for construction of the TSF, in designated PAF zones, or transferred to designated PAF Open Pit rock dump areas. The disposition of the stockpile for Shaft 2 which may contain PAF material, as well as future underground mine development rock, will be in an integrated, permanent rock dump that is managed and monitored in accordance with PAF standards. Containment has been placed around the stockpile to contain the material and drainage, and monitoring for drainage is performed. The MoC procedure was initiated by the Project in June 2014 to address the disposition issue associated with the Shaft 1 stockpile (Notice of Change 2014-003), and other underground development rock stockpile requirements, including the disposition of the existing Shaft 2 stockpile (Notice of Change 2014-004). The issue has been retained as a Level 1 Non-Conformance pending review of groundwater monitoring requirements and updating of the Water Monitoring Plan as necessary (IESC April 2013 Audit, MW04, MW05, MW13, MWM5).

Observations– Mineral Waste Management

1. Groundwater monitoring requirements within the Water Monitoring Plan for the Shaft 1 and 2 stockpiles as well as the proposed integrated, permanent PAF underground development rock dump associated with MoC 2014-004 should be reviewed and updated as necessary (MW04, MW13, MWM5).
2. Develop implementation strategy, as part of the plan for implementation of a trial reclamation plot, for progressive reclamation of rock dumps, establishing final slopes and cover in response to drainage and seepage conditions when observed. The strategy should address the basis for determining the timing and tentative procedures for reclaiming areas of the WRD during operations to protect water runoff quality, minimize infiltration, control wind erosion and allow vegetation establishment (MW12).

3. TSF construction QA issues raised in quarterly reports need to be addressed, in support of meeting design criteria (MW14).
4. TSF tailings density and deposition beach slope is not within design criteria (MW14). A variety of measures to improve tailings deposition has been implemented or is scheduled for trial including use of flocculent reagents. If the low density and flat beach slope persists, changes in the design for raising of the TSF dam and in the construction schedule are being prepared. In addition to demonstrating integrity and stability of the TSF under the design modifications, engineering evaluations should also demonstrate that PAF materials used in downstream zones (Zones 3C and 3D as presented in the Golder Associates 23 May 2014 report) of the TSF embankment will be protected from contact with tailings seepage water (MW14).
5. Review and update TSF Risk Assessment considering observed tailings density and deposition conditions if the flat beach slope persists, along with any TSF design modifications being considered relative to safety and environmental protection systems (MWMP Section 5.3 with reference to Element 3 - OT Hazard Identification and Risk Management; MWMP Section 4.4 – Reference to IFC Environmental, Health, and Safety Guidelines for Mining, Section 1.1 Tailings).
6. Review and clarify the TSF Operations, Maintenance and Surveillance Manual with respect to design modifications which may be implemented, as well as Operations (Section 9) hydrologic and freeboard criteria, and Table 9 Triggers and Actions under Adaptive Management for Tailings Management (clarify or insert parameter values) (MWMP Section 5.3). Consider developing threshold levels for piezometers and underdrain/seepage flow measurements based on design analyses and tied to response actions (MWM2, MWM3).
7. Initiate independent technical review of the design modifications for the TSF, through involvement of the ITRB or other independent consultant. (MWMP Section 5.3 with reference to OT Integrated, Mineral Waste, Acid Rock Drainage and Dump Management Implementation Plan; MWMP Section 4.4 – Reference to IFC Environmental, Health, and Safety Guidelines for Mining, Section 1.1 Tailings).

5.3 NON-MINERAL WASTE MANAGEMENT

5.3.1 Project Strategy

The overall Project strategy for the management and disposal of non-mineral waste generated by the Project is outlined in the Non-Mineral Waste Management Plan[12] developed by OT, which sits under the overarching OT ESMP Framework and outlines the general strategy to ensure the effective management of non-mineral waste generated throughout the OT Project operation lifecycle.

The Waste Management Plan has been supplemented by a General Waste Collection and Transfer Procedure and a WMC Operating Procedure which provide details on specific aspects of the day-to-day waste management activities at OT including indications on how waste should be managed from initial collection, segregation, and temporary storage up to final disposal.

5.3.2 Observations

According to a desktop review of information and update provided by OT, the Project continues to work towards the implementation of the waste management strategy defined in the Non-Mineral Waste Management Plan. Despite the challenges such as the remote location of project areas and the difficulties in identifying reliable recycling options throughout Mongolia, the effort to identify recyclable options for hazardous and non-hazardous waste continues. At the time of the last IESC visit, OT was working to identify a company to carry out periodic independent audits at all third party facilities and/or contractors engaged to recycle project waste to ensure they fulfil project requirements.According to the latest information provided, this process continues and OT is developing a detailed scope of work for independent audits of third party facilities.

At the time of the April site visit the Project was still using the interim WMC and waiting to start operating the new permanent WMC whose construction was completed and permits from the *soum* Governor to operate the facility received. The facility is an engineered landfill designed to comply with US EPA CFR

12 *Non-Mineral Waste Management Plan - Doc. No. OT-10-E7-PLN-0001 dated 01.09.2013.*

258 standards and includes two cells for waste disposal and two evaporation lagoons to collect leachate from the cells.

From the information received, disposal of waste at the permanent WMC officially commenced on 24 June 2014. With the operation of the new facility, the use of the interim WMC will be progressively discontinued and waste accumulated will be either recycled/treated or transferred to the new WMC. An interim landfill decommissioning, decontamination and rehabilitation plan needs to be developed to manage the transfer of waste from one site to the other. The scope of work has been defined and includes a review of the current landfill condition to confirm/identify the volumes of the different wastes currently disposed at site, the extent of decommissioning as well as the actions needed to rehabilitate/decontaminate the site to the original conditions. According to the information provided, the project is targeting to initiate the decommissioning activities in 2015, once the work plan will be finalized and approved.

5.3.3 Findings and Observations

Findings – Non-mineral Waste Management
Nil

Observations– Non-mineral Waste Management

1. Continue the effort to identify realistic off-site disposal solutions for specific waste categories such as tires, batteries, air filters and ensure that third party facilities identified are periodically audited (WMM4).
2. Continue the effort to identify viable solutions to neutralize some of the chemicals and solvents accumulated at the interim WMC to allow their treatment as non-hazardous waste (IESC October 2013 Audit, WM09, General Waste Collection and Transfer Procedure[13]).
3. Continue to monitor that routine inspections on general housekeeping are carried out by area HSE superintendents/supervisors, to ensure the new permanent WMC is properly operated according to design specifications (WMM2, WMM3).

5.4 HAZARDOUS MATERIALS MANAGEMENT AND POLLUTION PREVENTION

There are no substantial changes on this topic since the previous site visit in April 2014. This subject will be updated in the next IESC report based on observation made in the field.

5.4.1 Findings and Observations

Action Items – Noise and Vibrations
Nil.

5.5 AIR QUALITY

5.5.1 Project Strategy

Chapter C2 of the OT ESIA describes the potential environmental and social impacts related to air quality that could result from the construction and operation of the project. The general strategy for management of particulate and gaseous emissions is described in the Operations Phase Atmospheric Emissions Management Plan[14] (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 Use Management Plan.

The intent of the AEMP is to outline applicable Project Standards, define commitments, define monitoring and reporting procedures, and state key performance indicators (KPIs). The principal implementation procedure of the AEMP is the OT Air Quality Monitoring Plan[15] (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. There have been no modifications to the AEMP.

13 *General Waste Collection and Transfer Procedure - Doc. No.OT-10-E5-PRC-0001-E dated05.06.2013.*

14 *Atmospheric Emissions Management Plan- Doc. No.OT-10-E2-PLN-0001 dated 01.09.2013.*

15 *Air Quality Monitoring Plan – Doc. No.OT-10-E2-PLN-0002.*

5.5.2 Observations

Findings in this section are based on a review of information provided in an electronic data room and in correspondence with Environment department staff. Monitoring data related to air quality are consolidated in an Annual Report on the Implementation of the Environmental Protection Plan. This report is submitted to the Mongolian Ministry of Nature, Environment and Green Development. Results of the Annual Report are used to guide the following year's Environmental Protection Plan and Monitoring Program.

5.5.2.1 Ambient Air Quality

The Environment department reports on results of ambient air quality monitoring in quarterly reports. The dry environment is subject to dust storms during windy conditions, which impacts ambient air quality and especially particulate matter concentrations. The most recent monitoring report (Q2) contains the following summary ambient air quality information:

- $PM_{2.5}$ – Within the MLA 32 exceedences over 70 measurements, 28 of which were directly attributed to windy and dry conditions. Outside of the MLA two exceedences were registered in the GuniiHooloi region and 5 exceedences along the OT-GS road – these results also likely due to overarching climatic influence.
- PM_{10}– Within the MLA 13exceedences over 70 measurements, seven of which were directly attributed to windy and dry conditions.
- Gaseous emissions – No exceedences of Project Standards were noted for gaseous emissions.

Significant sources of dust generation on site include the TSF, open pit, coarse ore storage facility, Khaliv sand quarry, and fuel farm. Although no air quality incidents have been recorded the number of non-compliances exceeds the five per year threshold identified in key performance indicator AQ-KPI02 of the AEMP. The Environment department maintains a rolling Action Plan to address identified ambient air quality concerns. Watering of access roads at the TSF, open pit, Khaliv sand quarry, and other location is frequently used to mitigate dust generation.

There remains significant dust (particulate) generation at the coarse ore stockpile (COS) facility. In June 2013 the Environment department prepared a summary report detailing dusty ambient conditions at the COS and suggesting possible causes. A detailed engineering study was completed to address the concern with the use of a dust foam suppressant on coarse ore identified as the best mitigation. A Dust Suppression Foam System has been procured and is available on site. Installation of the unit is in progress with construction 80% complete of the underlying concrete foundation and pads. Mechanical, electrical and piping configuration is scheduled to start at the end of July, with an overall scheduled completion date of September, 2014.

There are limitations to the existing ambient air monitoring network available on site. The AQMP describes needed equipment to monitor ambient air conditions to Project Standards. A third party contractor has been retained by OT to upgrade the available ambient air quality monitoring equipment on site. Currently the contractor is compiling an equipment list that will outline the types of monitoring stations required. Once completed this equipment will be procured and installed. The Project estimates that this necessary equipment will be available on site and ready for installation by November 2014.

Ambient air quality monitoring results are to be evaluated by the Project with reference to Mongolian National Standard MNS 4585:2007 and guidance provided in EU Directive 2008/50/EC on Ambient Air Quality, as described in the AEMP. The IESC recommends that the Project evaluate all ambient air quality monitoring results against both criteria to avoid incorrect conclusions regarding the status of overall compliance.

5.5.2.2 Stack Emission Quality

Since October of 2013 all generators in use on site have been turned off and are on stand-by. As a result most of the sources have gaseous emissions have been removed from use. There are three remaining boilers on the site – the most significant of these is at the Central Heating Plant (CHP), with much smaller boilers present at Shaft #1 and at the airport. The Project has not yet procured dedicated monitoring equipment to allow continuous direct sampling of stack emissions in conformance with the monthly periodicity identified in AQMP.OT is currently preparing a SoW for a third party vendor - the Mongolian National Agency of Meterological and Environmental Monitoring (NAMEM) - to perform the required monthly testing. In

addition a different third party contractor is undertaking a complete inventory of all site emission sources, including recommendations for improvements and updating of the site air dispersion model.

Most recent stack emission sampling was performed by NAMEM in February, 2014. The CHP has two 29-MW and two 7-MW boilers, with a combined capacity of 72 MW. Stack emission sampling was performed by NAMEM at Boiler 4, to represent the 29-MW boiler, and Boiler 2 to represent the 7-MW boiler. This was done as the weather had been unusually warm, requiring less demand load of the CHP. Sampling results are evaluated against Project Standards as identified in Appendix B of the AQMP. Data show exceedences of NO_x, SO_2, and particulate Project Standards at the 7-MW and 29-MW boilers (Table 5.2).

Table 5.2:Stack Emission Sampling Results - CHP

Parameter	NOx (mg/m^3)	SO_2 (mg/m^3)	Particulate Matter
29 MW Boiler #4	91	**303**	**80.8**
7 MW Boiler #2	**689**	**610**	**114**
Regulatory Guidance			
AQMP Project Standard	200	200	20
(MNS) 6298:2011	450	600	200

Table 5.2sampling results indicate NOx emissions exceed Project Standards at Boiler #2. SO_2 and particulate matter emissions exceed Project Standards at both boilers. As noted in the March-April 2014 Audit Report stack emission sampling results had previously been evaluated by the Project with reference to Mongolian National Standard (MNS) 6298:2011and not directly against Project Standard guidance provided in the EU Directive 2010/75/EU, as described in the AQMP. As recommended the Project should continue to evaluate all stack emission sampling monitoring results against both criteria to avoid incorrect conclusions regarding the status of overall compliance.

In early 2014 extensive testing and study of water boiler performance at the CHP was undertaken by the Research and Experiment Center for Boilers (RECB) of the Mongolian University of Science and Technology (MUST). Testing was done for cold, firing and operational scenarios at minimum, medium and maximum capacity outputs. The summary report from this study: *Test of CFB Hot Water Boilers of Central Heating Plant in Oyu Tolgoi* – provides recommendations to ensure these units are operated as efficiently as possible while also improving stack emission quality. Recommendations of the study include coating of the bag at the bag house with limestone and addition of 6 – 7% limestone per unit weight of Hunnu coal. The addition of limestone to the feedstock will be undertaken in the autumn of 2014 when the heat load of the CHP increases. Currently only one 7 MW boiler is operating at less than 1 MW of demand heat load. Additional engineering works are scheduled for the summer shutdown of 2015; these improvements to the 29 MW boilers are anticipated to reduce NO_x and CO emissions.

5.5.2.3 Incinerator

An incinerator procured to Project Standard design criteria is operating at site. The manufacturer of the unit (Incinco) visited the site in January 2014 to assess overall performance of the unit. The inspection found the overall condition of the incinerator to be very poor, with lack of general maintenance and servicing. The unit showed signs of frost damage to the air blast cooler and heat exchanger, and inappropriate after-market modifications. The manufacturer assessment concluded that the incinerator was being used outside of its specification and the quantities of hazardous materials produced on site and processed through the incinerator were greater than the machine could successfully handle.

OT has since undertaken repairs to the incinerator to allow commissioning of the unit in accordance with the original design parameters. A SoW was developed by OT in July 2014 entitled "*WMC Incinerator Repairs and Training*". The SOW includes Incinco returning to the site to ensure that the incinerator is operating at full capacity, within engineered design parameters, and within Project Standard emission limits. In addition Incinco will train a Mongolian third party firm in the operation and maintenance of the unit. The Project expects that this work will be executed in August, 2014. Because the stack emission

sampling equipment is not yet inoperable the IESC is unable to assess incinerator emission quality with the guidance provided in Appendix C of the AQMP.

5.5.2.4 Greenhouse Gas Accounting and Energy Efficiency

OT records greenhouse gas emissions (GHGs) and reports a total of 1,066,279 tonnes $CO_{2\ (eq)}$ generation in 2013. Monthly GHG emission accounting began in July, 2013 (previously only annual reporting was completed). Year to date GHG emissions in 2014 are 401,385$CO_{2\ (eq)}$. OT has established a Scope of Work (SOW) with a third party contractor that includes the identification and assessment of GHG reduction and energy efficiency improvement opportunities. It is expected that this work will be completed by December 2014. The Environment department does engage on the purchase of new equipment for the mine site to ensure emissions controls are included in design specifications.

5.5.3 Findings and Observations

Findings – Air Quality

M1.11 There is significant dust generation at the Coarse Ore Storage (storage) facility. A foam dust suppressant and the system to spray this material have been procured and installation is in progress. It is currently estimated that the dust suppression foam system will be completed by September 2014. The Project should monitor results of implementation to assess the effectiveness of this measure or determine if other mitigations are warranted (AQ05).

M1.12 Additional monitoring equipment is required to allow more robust analysis of ambient air quality conditions, and to allow full analysis relative to Project Standards. It is estimated that this necessary equipment will be available on site and ready for installation by November 2014(AQMP Section 1.5; AQMP Appendix A; AQ-KPI02).

M1.13 The CHP currently lacks monitoring equipment to allow direct sampling of stack emissions in conformance with the monthly periodicity identified in the AEMP. OT is currently preparing a SoW for a third party vendor to perform the required monthly testing. In addition a different third party contractor is undertaking a complete inventory of all site emission sources, including recommendations for improvements and updating the site air dispersion model. A single sampling event was performed in February, 2014, with results showing exceedences of Project Standards at the CHP for NO_x, SO_2, and particulate matter. (AM03, AQMP Appendix B).

M1.14 Identification and assessment of greenhouse gas reduction and energy efficiency improvement opportunities will be undertaken per RT procedures by December 2014(AQ09).

M2.4 The Project incinerator has required significant repairs to address damages to the unit including emissions controls. A SoW has been developed to return the manufacturer to the site to ensure that the incinerator is operating at full capacity, within engineered design parameters, and within Project Standard emission limits. It is expected that this work will be executed in August, 2014. Stack monitoring should be completed as soon as possible following these repairs to assess performance of the unit (AM06, AQMP Appendix C).

Observations – Air Quality

8. The Ambient Air Quality Assessment should be updated when ordered ambient air quality monitoring equipment has been installed on site, and after collection of sufficient data to allow analysis.

9. Recommendations of the Research and Experiment Center for Boilers (RECB) of the Mongolian University of Science and Technology (MUST) 2014 report: *Test of CFB Hot Water Boilers of Central Heating Plant in Oyu Tolgoi* should be implemented. The addition of limestone to the feedstock will be undertaken in the autumn of 2014 when the heat load of the CHP increases.

5.6 NOISE AND VIBRATION

5.6.1 Project Strategy

There are no substantial changes on this topic since the previous site visit in April 2014. This subject will be updated in the next IESC report based on observation made in the field.

5.6.2 Findings and Observations

Action Items – Noise and Vibrations
Nil.

5.7 EMERGENCY PREPAREDNESS & RESPONSE

5.7.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit

5.7.2 Observations

The IESC received a summary of emergency response incidents through mid-July 2014, indicating call-outs and responses pertaining to fires and other incidents (excluding false smoke and fire alarms). Fourteen call-outs have been recorded, generally relating to fire or vehicle accident within the MLA, at the South Camp, or on public roadways. One incident related to a drowning in the Khanbogd soum. Potential hazards and incident scenarios that warrant emergency response procedures have been identified within the Site ERP (dated 1 January 2013), for surface and underground mine conditions, airport, as well as scenarios with potential community impact. Approximately 25 scenario events have been identified in the Site Emergency Response Plan, and Procedures have been drafted in approximately 18 to date in the Site Emergency Response Procedures. Incident response plans and procedures should be complete, identify and inform communities that may be affected, with response measures tested with potentially affected communities and local Authorities. Among those yet to be developed are procedures and an Emergency Action Plan for a TSF failure scenario. As the TSF is developed to significant height, and should its failure have the potential to affect mine operations, infrastructure and communities, an Emergency Action Plan should be in place.

A separate Underground Mine Emergency Response Plan, associated with care and maintenance period for the underground mine, has been updated (March 2014) ongoing inspection activities and maintenance of fixed and mobile equipment.

Contractor personnel receive induction training, being made aware of procedures for contact of the OT Main ERT Response Center. Some Contractors such as MAXAM, responsible for the management of the Explosives Plant, have HSE staff and maintain an ERP for their facility and activities. As an example of review and cross-training of ERTs with Contractors, the IESC was provided with documentation of a joint firefighting drill conducted on 6 October 2013 at the Explosives Plant.

OT conducted a major emergency response exercise on 13 May 2014 to test and validate airport emergency management procedures that included a mock aircraft crash event that required fire suppression, casualty triage and evacuation. The objectives of the exercise included tests of the OT Site Incident Management Team and Business Resilience Team, Site ERT capabilities, and introduce and facilitate liaison with the Mongolian agencies (National Emergency Management Agency of Mongolia, Mongolian Civil Aviation Authority, and local Mongolian Police). Although invited, the NEMA could not attend, and only the MCAA and Mongolian Police were present. A post-exercise report documents the success of the exercise, with an evaluation of exercise lessons, including the value of including SOS participation.

The surface emergency response team has 26 personnel over two shifts, and operates emergency trucks from a temporary fire house which houses ERT support equipment, and at the airport. With the recent departure of the ERT manager, responsibilities have been transitioned to others and continuing attention given to building capabilities of Mongolian leaders within the ERT. Company-wide initiatives include: (1) Inspirational Leadership Program on leadership skills conducted in UB; (2) In-house training modules; and (3) department coaching and mentoring.

5.7.3 Findings and Observations

Findings – Emergency Preparedness and Response

M1.15 Development of response procedures has been prioritized based on risk assessments, and approximately 18 of 25 identified incident scenarios have been drafted. Incident response plans and procedures should be complete, identify and inform communities that may be affected, with response measures tested with potentially affected communities and local Authorities. Among the scenarios to be drafted are procedures and an Emergency Response Plan for a potential TSF failure (ERP02, ERP02b, ERP02c).

Observations – Emergency Preparedness and Response

1. Ensure that response procedures for scenarios identified in EPRP have been developed, reviewed, and fully meet the associated management controls and intent of the Project Standards (EPRP Section 4.4 and 5.1; ERP02, ERP02b, ERP02c; Site Emergency Response Plan).
2. Evaluate the failure scenario and potential impact for the TSF relative to mine operations, infrastructure and communities, and prepare an Emergency Action Plan (Site Emergency Response Plan; EPRP Section 4.4, IFC Guidelines and EBRD Performance Standards, and Section 4.6 UNEP APELL Guidance).

5.8 TRANSPORT MANAGEMENT

5.8.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

5.8.2 Observations

The IESC desktop review efforts relative to Transport Management were restricted to review of information on transport service provider fleet management, including key performance indicator tracking, and concentrate shipments. The summary of mandatory induction training for transport service providers includes HSE, legislation and regulation, alcohol and drug policy, general behaviour and discipline, but does not specifically identify measures associated with community awareness and livestock/wildlife road crossings that were previously planned for inclusion in April. It is understood that the Communities Team has provided targeted inductions to logistics contractors however it is important for the *Communities Induction* to be included as an element of the mandatory inductions for all employees and contractors. Incidents associated with breaches of HSE Policy, Alcohol, Speeding, Personnel Behaviour are tracked, and reported to have diminished significantly in 2014 with increased Project standards.

Monthly export of concentrate from OT has increased steadily, reaching 157 Lots (45,056 Bags) in June 2014, and is projected to be about 174 Lots/month through the balance of the year. Since the previous audit, one roadway accident involving an empty truck striking the trailer of another empty truck was reported. No injuries were sustained, and the convoy stopped and reported the incident to supervisors. Review by OT HSE Management identified response actions associated with updating convoy procedures, communication arrangements, and driver rules.

5.8.3 Findings and Observations

Findings – Transport Management

Nil.

Observations – Transport Management

1. Prepare details of additional training to be provided in the OLT Induction Training program, and implement associated planned actions (TMP13). Implement participation of Communities Team in scheduled monthly meetings to ensure ongoing awareness of safety and community issues.

5.9 BIODIVERSITY AND ECOLOGICAL MANAGEMENT

5.9.1 Project Strategy

As described in previous audit reports, OT implements its biodiversity mitigation and monitoring measures through the Project's Operational Biodiversity Management Plan*16* (BMP) and OT Environment Management System so that all biodiversity-related actions can be planned, implemented and tracked in an integrated manner. Management activities specifically required to meet Lenders Standards are described in the Lender's Biodiversity Action Plan (LBAP) included as Annex C to the BMP. Other management plans also include biodiversity-related commitments and requirements.

The BMP has been reviewed and updated in a joint activity involving OT, Lenders and supporting biodiversity consultants. As a result of this process, OT has submitted two formal "Notifications of Change" to Lenders:

- Biodiversity Management Plan and Annex C Biodiversity Action Plan (Notice of Change 2014-006), including Change 1 (updates to the Biodiversity Management Plan) and Change 2 (adjustments to the status and timeline for measures included in the Biodiversity Action Plan).
- Lender BAP Commitment Regarding Barriers along OT Roads: Biodiversity Management Plan Annex C id 6 off road traffic (Notice of Change 2014-7).

Requests include extension of timelines for some BMP actions as well as removal of a Lender BAP Commitment to install barriers along OT roads to prevent off-road driving. Amendment of some procedures is also proposed, notably the Rehabilitation Procedure (OT-10-E9-PRC-0002) and the Illegal Wild Plants and Animal Products Procedure (OT-10-E9-PLC- 1001). Observations regarding the implications of these changes are reviewed in relevant sections below. A comprehensive independent review of the updated BMP is planned prior to final approval/ sign-off and this will take account of any findings arising from this audit.

The Project's "Core Biodiversity Monitoring Plan" (CBMP) has recently been finalized and monitoring activities are taking place for priority biodiversity features. A fully comprehensive Biodiversity Monitoring and Evaluation Programme (BMEP) is planned to be in place by 2015. OT has invested considerable resources in monitoring and its surveys are beginning to generate robust evidence.

As described in previous IESC Reports, the BMP has explicit links with several other OT Management Plans, to "ensure that OT's Biodiversity Strategy is communicated to and aligned with all other OT environmental and social/community strategies". OT's strategy for embedding biodiversity-related stakeholder engagement (internal and external) in its Project-wide strategy was a key area for review in this audit (see further observations below under "Stakeholder Engagement"), following delays in finalization of a biodiversity-related Stakeholder Engagement Plan.

5.9.2 Observations

Findings in this section are based on observations made during teleconferences and phone calls in July 2014, involving environment department staff (in particular the biodiversity and land use management teams), as well as review of documentation provided.

5.9.2.1 Managing Impacts Associated with Power Lines

One of the BMP key management controls is the use of bird Flight Diverters on power lines to minimize mortality due to collisions (B10 and LBAP) with and electrocution by power transmission lines. Diverters must be "maintained as necessary to minimize wildlife mortality throughout operations". There are ongoing problems with functioning of some bird flight diverters and the process of investigating causes of failure is incomplete. Assessments were carried out in January, February and September 2013 to study samples of 600 bird flight diverters installed on 12 sample areas with a length of 1km along various stretches of power line inside and outside the OT site. Preliminary data from these suggest that a high proportion of diverters are still functioning (approximately 90%). However monitoring data from power line inspections show deaths of at least 10 Cinereous Vultures during 2013, three Houbara Bustards and one Saker Falcon, due to collisions with power lines, as well as large numbers of Pallas's Sand Grouse.

16 *Biodiversity Management Plan - Doc. No. OT-10-E9-PLN-1001 dated 01.09.2013.*

Detailed investigations of carcass decay-rates using introduced carcasses are planned, so that results of routine, monthly carcass counts under power lines can be interpreted more effectively but these will not take place until next year. Meanwhile the possibility of significant impacts on sensitive bird species remains.

The procurement process for insulation of medium-voltage power line poles and dead ends has been initiated and installation is now planned to be complete by September 2014.

5.9.2.2 Managing Impacts related to Traffic and Transport

The ESIA identified risks to wildlife from induced increases in levels of hunting and disturbance caused away from roads by vehicles driven off-road. The BMP therefore requires measures to control disturbance of animals caused by off-road driving and any associated increases in mortality from hunting and collecting. A report presenting the results of radio-tracking surveys was available for review as part of this IESC Audit and this should enable development of a programme of effective measures. Although baseline-monitoring data are now available, they have not yet been interpreted to confirm specific, sensitive areas where traffic speed regulation is particularly important for wild animal species. This will be discussed in the next IESC visit, by which time it may have been possible for the Biodiversity Team to update maps of areas considered to be particularly sensitive to effects of off-road driving from a vegetation perspective or because of potential disturbance of wild animals.

In October 2013, OT proposed to the Lenders that the installation of structures or barriers at sensitive areas to prevent vehicles from leaving the OT-GS, OT-KB and OT-airport roads should be removed from the BMP (and the Lender BAP) due to the emergence of a general consensus view among specialists that such barriers were unlikely to be successful and could be counter-productive. OT has now submitted a formal request to lenders to remove this measure from the BMP through a formal "Notice of Change" (2014-7). Lenders are in support of the removal of this measure, but still require an explanation of OT's proposed alternative plans for mitigation of impacts associated with off road driving in sensitive areas on the GashuunSukhait, OT to Khanbogd or OT airport roads. The Notice of Change references OT's anti-poaching work, but does not address habitat loss or degradation, or the avoidance by wildlife of vehicles driving off road in cases where this is unrelated to poaching. Means of controlling OT contractor vehicles and those driven by local residents should be explored and recommendations made for inclusion in the Lender BAP or BMP.

OT still has to make provision to enable wildlife to cross roads in future, if increased traffic levels mean that roads become a barrier to free movement through the landscape. An initial workplan was due to be agreed with the Lenders by Q4 2013 (BMP, ID B16 and LBAP, ID 5, BMP Annex C), to include timelines for consultation, design, locations, engineering and environmental assessment provision for underpasses and this is not yet in place.. Following consultation with specialist advisors, consensus has not yet been reached concerning the suitability of underpasses as a measure or an alternative suitable design.

A further workshop is planned in November 2014 to reconsider available evidence and review alternatives, which might include wildlife crossing points, structures such as underpasses or periodic road closures. It should be possible to submit a workplan for assessment, design and implementation of measures to maintain landscape connectivity, with underpasses included if it is concluded (on the basis of further consultation).

5.9.2.3 Stakeholder Engagement

Integration of biodiversity-related commitments and requirements with OT's stakeholder engagement planning process is a Lender requirement (BMP Annex C ID 24). OT committed to "develop a targeted Stakeholder Engagement Plan" and this, or alternative provision for integrated planning of biodiversity-related stakeholder engagement had dropped well behind schedule at the time of the previous IESC report. Through its Notice of Change 2014-006, OT has requested an extension of the timeframe for delivery of a biodiversity-related Stakeholder Engagement Plan to Q4 2014.

Effective engagement with external stakeholders is essential and OT has developed strategic partnerships with national and international specialists and NGOs in order to pursue key strategic activities, including capacity building for management of ecosystem services, biodiversity monitoring and development of the Biodiversity Offset Strategy. Through LBAP item B26 OT committed to "substantial stakeholder engagement and consultation to ensure its biodiversity offset programme is consistent with national

conservation priorities and stakeholders' interests and that it is technically, politically and administratively feasible over the long term". Engagement with relevant regional bodies was envisaged, in advance of submission of options to Lenders. This engagement is well underway. OT and its consultants have been involved in extensive consultation with Government concerning Mongolia's new Policy on Biodiversity Offsets as well as discussions regarding alignment of government and lender requirements. An extension of the timeframe for submitting options to Lenders has been requested due to the need to review Mongolian policy and legislation when it is finalized and allow time for OT to integrate these requirements into its final programme. This is considered to be a sensible approach.

Recognising the importance of its various partnerships and the need for careful coordination of its stakeholder engagement, OT commissioned Flora and Fauna International (FFI) to review its biodiversity-related capacity building and stakeholder engagement requirements. The Mission Report was reviewed for the purposes of this audit. The need for further improvements in planning of stakeholder engagement was emphasized to minimize risk of mixed messages to communities and other external stakeholders and to promote internal coordination. In line with this and other recommendations in the FFI report, it is suggested that OT completes a comprehensive stakeholder mapping exercise for its biodiversity-related consultation and engagement and takes measures to ensure that biodiversity-related stakeholder engagement is mainstreamed into its planning system, possibly through the Stakeholder Coordination Function (SHCF).

The SHCF coordinates and records OT's stakeholder engagements. Each Department is responsible for developing its own stakeholder "influence and network" maps and for planning, implementing and tracking its stakeholder engagements, but the SHCF has a coordinating role between Departments. One of FFI's recommendations was to clarify and strengthen the role of the Environment Department and its constituent teams in this framework. Twenty stakeholder groups have been defined by OT under the SHCF and classified into five clusters according to the departments making the engagement: the Environment Department is not recognized within these clusters. Given the complexity of stakeholder engagement requirements on environmental issues and the critical importance of community relations, the role of the Environment Department in OTs overall stakeholder engagement system needs to be strengthened. OT's contractors are well placed to provide technical input to engagement on biodiversity and ecosystem services by the different departments and to help coordinate a process of integration. Comprehensive mapping of all biodiversity and ecosystem-related stakeholders is an important first step.

5.9.2.4 Land Disturbance Control and Land Rehabilitation

OT has indicated that it proposes to incorporate relevant commitments and measures in an updated Rehabilitation Procedure (OT-10-E9-PRC-0002), rather than producing a separate Land Use Implementation Plan (LBAP Action 18c). The biodiversity aspects of rehabilitation should be assessed jointly by the Land and Biodiversity Teams so that an integrated procedure is developed which is aligned with permitting procedures and with the Land Use Management Plan (LMP). As indicated in previous IESC Reports, a clear distinction needs to be made between rehabilitation and targeted biological restoration, to specific plant community-types, some of which is needed to demonstrate NPI and might require explicit provision for endangered plant species, supported by research if needed. OT's commitments to NPI for endangered plant species should be revisited in the light of recent revisions to the Mongolian Red List. Establishment of biodiversity restoration targets is consistent with statements in the Interim Rehabilitation Management Plan that "completion criteria would be included in the final rehabilitation management plan because the completion criteria for the site must reflect potential post-mine land uses". Moreover, according to the EIA Volume III, the process of developing completion criteria would need to reflect results of research on effective rehabilitation methods". These criteria were expected to reflect target vegetation condition, density and diversity of species necessary to achieve target vegetation types.

OT has a Land Disturbance Permit Procedure (OT-10-E9-PRC-0003), which ensures that approval for land disturbance is underpinned by ecological reviews and assessments to check that damage to areas of environmental significance is avoided. There are two phases in land rehabilitation: technical and biological. As identified in the last IESC Report, technical aspects are well managed and implemented by contractors, but biological rehabilitation requirements are less clearly defined.

The Control Description for mitigation action B16 suggests that OT will rehabilitate land in accordance with the OT Rehabilitation Procedure (OT-10-E9-PRC-0002), the Topsoil Handling Procedure (OT-10-E9-PRC-0001) and Mine Closure Plan (OT-10-E9-PLN-0002) and in accordance with the principals and

requirements of OT's Land Use Management Plan (OT-10-E9-PLN-0001) and Rio Tinto's Land Use Stewardship Standard. Review of these various plans and procedures for the last IESC audit revealed a lack of clarity about required biodiversity outcomes and commitments. The Land Use Stewardship Implementation Plan (LUIP) (LBAP commitment 18c, BMP Annex C) was envisaged as a mechanism for alignment between the various plans and procedures. Following review of existing plans and procedures, however, OT proposes to update its Rehabilitation Procedure to ensure that biological rehabilitation requirements are given appropriate emphasis and to establish clear restoration objectives and targets. Proposed approaches for establishing suitable "analogue" or reference vegetation communities (e.g. in terms of type, species composition and structure) will need to be specified. As indicated in the last IESC Report, proposed means of verification in the BMP (B16) indicate a requirement to ensure that suitable plant species for use on rehabilitation are determined through rehabilitation trials and that vegetation of natural analogue sites is used to guide the ratio of annual to perennial plants used in seed mixes for rehabilitation.

References to rehabilitation are made in the Land Use Management Plan (LUMP), for example Key Management Controls relating to rehabilitation following land use disturbance currently include: 'Implementation of the Rehabilitation Procedure that includes, but is not limited to, the requirement for progressive rehabilitation, use of local seeds and stable structures'. The LUMP will therefore need to be updated to align with revised procedures. The LUMP also refers to 'Implementation of the Land Use Implementation Plan to ensure compliance of the Rio Tinto Land Use Stewardship Performance Standard (E9) and associated guidelines'. The LUMP will need to be revised to reflect the fact that no LUIP is now intended and commitments in the revised procedures will need to be incorporated in the Mine Closure Plan.

5.9.2.5 Managing Illegal Hunting

Baseline data are now available from carcass-counts conducted in the South Gobi. These are needed to develop proposals for potential interventions to reduce hunting impacts as part of OT's NPI strategy. OT commissioned WCS to carry out a Pilot Study of Wildlife Hunting and Trade: Umnogobi and Dornogobi, February 2014. WCS researchers had a positive reception from government officials, setting the stage for on-going work in the region. However WCS discovered a paucity of data from official sources and identified an urgent need to build capacity for both monitoring and enforcement, especially in protected areas. The lack of reliable data from official sources and from large numbers of interviews that were conducted for the study meant "it was not possible to produce reasonable baseline estimates of the rates at which different species are being hunted or traded". The study emphasized the need for officials to receive training in monitoring and enforcement: "If rates of poaching and trade are to be relied on as measures of change over time, providing metrics of progress towards meeting NPI.

Another important mechanism for controlling illegal hunting is inspection of vehicles and accommodation for illegal wildlife or wild plant products. The Lender BAP (18d, BMP Annex C) states that OT will develop procedures for the implementation of its Illegal Wild Plants and Animal Products Policy. This requirement was reviewed in the March 2014 IESC monitoring visit and the need for clear procedures to ensure that mitigation and control measures are implemented was identified in the IESC Report. The Wildlife Conservation Society conducted a review of procedures and then training in April 2014, which included pilot inspections of vehicles and specific training to identify illegal wildlife products for staff carrying out vehicle inspections or inspections of accommodation. In their report, WCS reported a lack of awareness of required protocol. OT submitted a Notice of Change 2014-006 (Change 2) requesting that the "Inspection and Identification of Illegal Wild Plant and Animal Policy (OT-10-E9-PLC-1001, in draft) should be replaced with a revised "Illegal Wild Plant and Animal Procedure" (OT-10-E9-PRC-0005-E), which was reviewed as part of this audit. Provision for implementation of this procedure will be reviewed in the next audit.

5.9.2.6 Resources and Staffing

It was not possible to review resources or staffing in any detail in this audit, as no site visit was conducted. This subject will be updated in the next IESC report based on observation made in the field.

5.9.2.7 Ecosystem Services

Close integration of social and ecological interventions is important to manage OT's impacts on ecosystem services and to ensure that community-based interventions meet dual objectives of livelihood enhancement

and NPI for biodiversity. OT has improved levels of integration in practice through regular fortnightly meetings of the Ecosystem Services Working Group.

Regular interaction between the Environment and CSP teams, through this group has improved consideration of biodiversity and ecosystem services in planning of activities through the Pasture and Livelihoods Improvement Strategy. The risk that investments supported by CSP loans for small and medium size business enterprises could have unintended perverse outcomes for biodiversity (particularly if they target increases in production to meet new market demand for example) has been reduced as a result. The EDG meets regularly and members of staff from both the Environment and CSP teams report it to be a valuable forum to discuss issues of mutual concern. The benefit of generating a shared road map was revisited in telephone discussions carried out for this audit, as a means of promoting genuine co-implementation of community and biodiversity actions in the Pasture and Livelihood Improvement Plan and to ensure that the proposed Ecosystem Services Monitoring Programme is aligned with the Pasture Land and Livelihood Improvement Strategy and the Pasture Management Plan.

OT affects four priority ecosystem services, which were identified as critical in the ESIA and critical habitat assessment carried out for the project (fresh water supply, water regulation, livestock production from pasture and biomass fuel). OT has requested a revision of the timeframe for submitting a "Monitoring and Evaluation Programme" for critical ecosystem services from Q1 to Q4 2014. This is to allow time to respond to results of a review of scope and capacity by consultants and lenders. The Ecosystem Services Monitoring and Evaluation Programme is being implemented through Engagement with FFI, in collaboration with the National University of Mongolia. Plans have been developed to run a three-day workshop in October 2014 to develop the required monitoring programme. This should include relevant metrics and threshold values to monitor compliance and provide a basis for adaptive management of critical services.

5.9.2.8 Monitoring

The Draft Oyu Tolgoi core biodiversity monitoring plan (dated February 2014) refers to a workshop held in May 2013, at which WCS, WSCC, Sustainability, GBC and OT undertook a rapid gap analysis to check that indicators were selected for each significant negative and positive impact on each Critical Habitat-qualifying biodiversity feature (plus natural habitats and Houbara Bustard). In telephone discussions held for this audit, the potential inclusion of monitoring for Saker Falcon was discussed, due to its Endangered status on the IUCN Red List.

5.9.3 Findings and Observations

Findings – Biodiversity and Ecological Management

M1.16 There are ongoing problems with functioning of alternating flapper-type bird flight diverters needed to manage risks of birds colliding with power lines. Efforts are being made to understand the reasons and consequences of malfunction, but there has been no change to monitoring activities this year, meaning that the scale of undetected collisions of birds with powerlines is not known. It is important to move quickly towards resolution, given that there are regular incidences of mortality of species of conservation concern, including Houbara Bustard and Saker Falcon. The proposed approach to developing practical solutions needs to be developed unless it can be shown with good evidence that impacts are not significant (B09, LBAP ID1, CBMP).

M1.17 In October 2013, OT proposed to the Lenders that this mitigation measure should be removed from the BMP (and the Lender BAP). OT followed its internal Management of Change procedure to remove this measure and then submitted a similar request to Lenders in July 2014 (through Notification of Change 2014-7). Given general consensus amongst specialists concerning the unsuitability of hard physical structures or barriers to prevent vehicles from leaving the road, the Lenders support removal of this measure from the BMP and the Lender BAP. However, OT needs to propose

alternative measures to prevent vehicles from leaving the road in sensitive areas on the Gashuun-Sukhait, OT to Khanbogd or OT airport roads, or to manage associated impacts. Scope to track contractors' vehicles should be assessed as a first step(B04, LBAP ID6).

M1.18 The replacement BorOvoo spring should "mimic" the characteristics of the BorOvoo spring as closely as practicable - taking into consideration the extent of inundation and catchment size, establishing vegetation and rocky outcrop habitats" (ESIA Ch B7a Table 7.1). The target plant community for the replacement spring needs to be defined, together with ecological requirements of plants during establishment and thereafter so that they can be incorporated into the replacement spring. Progress will be reviewed in the next IESC visit. Meanwhile wildlife monitoring data suggest that the temporary spring is providing drinking water for wildlife and can be considered a satisfactory temporary solution in this regard while final design and location is confirmed (ESIA Ch B7a Table 7.1; see Section 5.1.2.1 and issue No. M1.1) - [not reviewed in this audit. It is understood that measures to remedy this were included in the Biodiversity Team's workplan for 2014, including nursery trials on methods to reinstate plants. Progress will be reviewed in the next IESC audit.].

M2.5 OT undertook to develop a workplan for installation of underpasses to include activities and timelines for stakeholder consultation, design, locations, engineering and environmental assessment consistent with expert advice. An initial workplan was due to be agreed with the Lenders by Q4 2013 (BAP ID 5, BMP Annex C) and is now overdue. The OT – GS Road upgrade could experience increased traffic volumes which could make the road a functional barrier to movement of species such as Khulan and Goitered Gazelle. Levels of traffic are currently low and results of baseline surveys suggest that Khulan are able to cross the road frequently to access water. However OT has committed to demonstrate best practice to manage its residual impacts on critical habitat for such species. A further workshop is planned to discuss options in November 2014, and the results will be used to finalise a workplan and identify the practical measures that will be taken to ensure that habitat connectivity is maintained. Meanwhile monitoring of traffic levels should be progressed and monitoring of wildlife movements should continue so that any emerging trends in barrier effects can be detected (BMP ID B16 and Annex C, ID 5).

M2.6 OT has committed to develop a "targeted Stakeholder Engagement Plan"…"under the scope of the Ecosystem Services Group". This provision for ensuring effective integration of biodiversity-related stakeholder engagement requirements with OT's systems is significantly behind schedule. OT has requested an extension of timeframe for completion of this process to Q4 2014 through Notice of Change 2014-006. OT commissioned Flora and Fauna International (FFI) to review its Biodiversity Capacity Building and Stakeholder Engagement requirements. In line with the recommendations in the resulting report, it is suggested that OT's biodiversity-stakeholders should be mapped as a basis for developing a targeted engagement plan and that appropriate actions to mainstream biodiversity commitments and requirements into OTs planning systems for stakeholder engagement should be identified, eg through the SHCF.

Stakeholder engagement underpins many biodiversity commitments and is particularly important to the design and delivery of OT's biodiversity offsets management plan (B28). OT has committed to "substantial stakeholder engagement and consultation to ensure that its biodiversity offset programme is consistent with national conservation priorities and stakeholders' interests and that it is technically, politically and administratively feasible over the long term".

OT has taken measures towards meeting this commitment and has been engaged in consultation with the Government of Mongolia concerning its new Biodiversity Offsets Policy, but further dialogue is needed with the Government and several other stakeholders to ensure that OT's approach will meet applicable standards and requirements. This should be achievable within the extended timeframe that has been

requested. (BMP B05; LBAP ID 24, BMP Annex C).

M2.7 OT was due to submit a LUIP or equivalent plan to the Lenders by Q1 of 2014, with a view to presenting a clear indication of OT's proposed commitment in terms of vegetation or habitat rehabilitation. This is required to provide a framework to monitor OT's success in meeting PS 6 requirements with respect to "no net loss" of natural habitat and also OT's Biodiversity Strategy regarding net positive outcomes for priority plant species. OT is proposing to incorporate its commitments relating to equivalence of restored vegetation into its Rehabilitation Procedure and will update other associated plans and procedures accordingly. Removal of the commitment to produce the LUIP has been requested through a Notice of Change submitted to Lenders and this is likely to be acceptable to Lenders, provided that biological aspects of rehabilitation are incorporated into the Rehabilitation Procedure as planned (LBAP ID 18c, BMP Annex C).

M2.8 The Illegal Wild Plants and Animal Products Policy (OT-10-E9-PLC-1001) included a prohibition on illegal hunting, to be communicated through induction and training to all personnel, whether employees or contractors. OT submitted a request to Lenders in a formal Notice of Change (2014-006) to replace the Policy with procedures (OT-10-E9-PRC-0005-E) which identify OT's approach to management of this issue. However these WCS identified lack of awareness of required protocols in its review and training. Revised procedures are needed which will provide a clear basis for monitoring and these need to be re- submitted for review (LBAP ID 18d, BMP Annex C).

Observations–Biodiversity and Ecological Management

1. It was not possible to review progress "on the ground" with rehabilitation as part of this audit. Commitments in terms of rehabilitation and restoration outcomes remain unclear, pending proposed review of biological rehabilitation procedures. Previous observations suggested that objectives for restoration outcomes should be clarified and that a supporting programme of research is needed to inform planning and implementation of restoration activities. Discussions during this audit confirmed that a revised rehabilitation procedure is being developed and this will be reviewed in the next audit, together with provision for supporting research.

2. Development of a simple risk assessment procedure is needed for community-based interventions to check that there will not be unintended consequences for biodiversity. This is being considered by the Ecosystem Services Group to accompany further development of detailed implementation plans. The group is working on co-development of plans involving both the Biodiversity and the CSP teams. The benefits of producing a clear road-map to show how biodiversity and CSP plans inter-relate were discussed during this audit. The current emphasis is on pilot testing of interventions and monitoring techniques and this is progressing well. The need to continue identifying opportunities to provide regular feedback to involved community members was also re-visited during this audit, following feedback from interviews with communities in the previous IESC visit.

3. Reduction in hunting impacts is seen as a potential measure for conservation gain towards NPI in the South Gobi Region. Given challenges identified by WCS in interpreting data on poaching, the need for capacity building with officials responsible for monitoring and regulating illegal hunting should be considered as part of the offset planning process towards identification of a suite of interventions that could play a part in OT's NPI strategy.

4. Recommendations in the Khulan Study (Appendix C to CBM 3rd Progress Report) include installation of traffic volume and activity monitoring along the OT road to enable assessment of the potential impact of traffic volume on khulan crossing frequency and timing. The report suggests that, ideally, an automatic system with remote data transfer should be installed. This report also suggests that physical characteristics of road crossing points should be mapped so that reasons for use versus random crossing / nonuse can be investigated. More detailed investigation of the potential factors favouring and/or preventing road crossings would facilitate planning for effective measures to maintain habitat connectivity throughout the

khulan range. Inclusion of other mining roads such as the ER and TT roads is suggested to provide deeper insight into the barrier effects of transportation corridors. These recommendations, amongst others, should be reviewed in the November 2014 meeting.

5. The Draft Oyu Tolgoi core biodiversity monitoring plan (dated February 2014) refers to a workshop held in May 2013, at which WCS, WSCC, Sustainability, GBC and OT undertook a rapid gap analysis to check that indicators were selected for each significant negative and positive impact on each Critical Habitat-qualifying biodiversity feature (plus natural habitats and Houbara Bustard). In telephone discussions held for this audit, the potential inclusion of monitoring for Saker Falcon was discussed, due to its Endangered status on the IUCN Red List.
6. LBAP item 18b requires IESC review of the BMP and biodiversity commitments register to verify that all of the ESIA commitments have been incorporated in the OESMPs. A comprehensive review is required for Lender approval of the revised BMP.

6 SOCIAL

6.1 SCOPE OF SOCIAL REVIEW FOR THIS AUDIT

As the July-August 2014 audit was conducted as a desktop exercise, the process was focused on document review and discussions with OT personnel from relevant departments. There were no interactions with stakeholders external to the operation as part of this review. The focus of the desk-top audit was on OT progress against existing non-conformances, as well as collective redundancies, worker accommodation, herder livelihoods and livelihood restoration projects, the completion audit of resettled herders, outcome evaluation of economically displaced herders, and vulnerable herder households. To a lesser extent, community health and safety and stakeholder engagement were also discussed as part of this desk-top review.

6.2 LABOUR & WORKING CONDITIONS

6.2.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

6.2.2 Observations

6.2.2.1 Recruitment and Manpower

The OT workforce continues to be focused on open pit mining, transport of concentrate and activities supporting this. The construction of the underground (UG) mine remains on suspension with a limited number of workers on care and maintenance duties.

A workforce review has been conducted at OT since the last audit and approximately 330 workers including both contractor and OT LLC workers, have been made redundant. This exercise was part of the planned "right sizing" of the OT workforce for its current operations. The total number of workers at the OT operation as of 30 June was 6,798 and the overall national content ratio is 94%. Approximately 2,700 workers are OT LLC employees with the remainder of workers employed by contractors and sub-contractors. The key metrics for national content set out in the IA continue to be met. The number of contractors on site remains similar to the previous audit. Manpower forecasts for the next 5-years were still being finalised as a result of the workforce review at the time of this desk-top audit; these will be appraised by the IESC at the next site visit.

Regular information disclosure on local recruitment, training and employment metrics to local authorities and communities remains outstanding. Some progress was reported by OT in terms of identifying the key metrics to report and preparation of a template for capturing the required data, but regular reporting has not yet commenced. This action now needs to be expedited with appropriate coordination between the HR and CSP departments (see also Section **Error! Reference source not found.**).

6.2.2.2 Management of Worker Relationship

The Contractor Engagement team works closely with contractor companies to ensure that all new workers are subject to standard pre-employment checks and inductions, and are provided with the relevant training required for their position within the OT operation. Regular monitoring and auditing of contractor HR and Employee Relations (ER) performance however, remains to be systematised by OT. For example, periodic auditing of contractor company recruitment and selection processes, payroll, employment agreements, employee assistance/grievance systems, and worker mobilisation/logistics would typically be included in this type of compliance verification process. As per the Labour Management Plan it is the Procurement Department's responsibility to ensure that HR/ER performance of contractor companies is monitored. The IESC will review this further with the Procurement Department and others as relevant at the next site visit. An audit schedule and scope should be available, as well as results from any previous compliance assessments conducted (if any). Priority should be given to the assurance of major or Category 1 contractors' performance.

Based on a review of the most recent worker grievance summary (April to June 2014), the level of grievances were lower in this period compared to the 3 months prior to the last audit. Notably, it appears there were no worker grievances recorded in the Speak Out system in this period related to the most recent redundancies by OT.

6.2.2.3 Collective Redundancies and Demobilisation

The planned "right size" exercise of the OT operations workforce was completed in Q2, 2014. A total of 330 positions (including both expatriate and national positions) were identified as being no longer required for the current operation. The planning for these redundancies began in March 2014 and the announcement was made within the business and to workers on May 28. An HR Management Plan was prepared by June 2014 and provided to Lenders/IESC for review. This plan summarises the key actions required by OT and contractors to implement the collective redundancies identified and to minimise impacts to those affected. The early preparation and submission of this plan to Lenders is positive. Close cooperation between OT and the affected contractor companies has been reported by OT during implementation of the HR Management Plan. A number of meetings with the main contractors affected have been conducted. The primary method of engagement with affected workers during the redundancy process has been face-to-face conversations, with over 250 meetings reported to be completed by end June 2014.

The provisions required by Mongolian law for retrenchment including the appropriate notice period and severance packages are incorporated into the HR Management Plan. From discussions with OT it is evident that the plan is being implemented by OT. However, further evidence is required from OT to demonstrate that this plan has been fully implemented by OT LLC and contractor companies. It is particularly important that appropriate notice periods, consultation, and mitigation measures to minimise the impact of redundancies, have been fully afforded to contract workers. Documentation also needs to be made available to Lenders/IESC to demonstrate how OT has monitored the redundancy process by contractors and how issues that have arisen, if any, have been addressed to the extent feasible.

Some data on the number of workers retrenched by category and location has already been provided by OT. The number of workers affected locally is relatively low: 11 in Khanbogd soum and a further 42 from other parts of Omnogovi aimag. Notwithstanding, even relatively small numbers of redundancies can have impacts on local communities and as such, the IESC will be seeking confirmation from OT as to how they have monitored and managed, if needed, the impacts of collective redundancies beyond the individuals, particularly within Khanbogd soum. There are limited opportunities for redeployment expected to be available due to the overall downsizing of the workforce, but the HR Department is working with OT LLC and contractors to encourage redeployment wherever possible, particularly for local workers.

A detailed summary of the final outcomes of the redundancy process should be provided as soon as available, e.g. no. redeployed, no. meetings with contractor companies, no. individual interviews, no. seeking EAP assistance, no. provided with other assistance such as resume preparation, reference etc. This was a weakness of the previous redundancies in 2013 and is expected to be addressed more effectively by OT in this current process.

Negotiations with the Oyu Tolgoi Trade Union Committee were conducted to agree the redundancy package for OT LLC workers after a request was made by the union to OT. These negotiations were successfully concluded with agreement reached on the nature of the severance package for workers. Some potential concerns were highlighted by the Confederation of Trade Unions (CMTU) in the Mongolian media about this redundancy process. However, these are not understood to have been formally raised to OT. The OT Trade Union representatives deal directly with the CMTU (not OT LLC) and the company reports that since the successful negotiations with trade union, they are not aware of any ongoing concerns by the CMTU or others.

6.2.2.4 Worker Accommodation

As at the desk-top audit in mid-July there were less than 40 workers reported on site at the temporary South Camp, including road workers, catering and security staff. The camp was progressively being dismantled. The housekeeping issues identified at the last site visit are reported by OT to have been rectified soon after the visit. It is understood that OT intends to remove all infrastructure from the South camp site and rehabilitate the area in accordance with OT and local/national environmental standards and requirements. During preparation of this final report, OT reported that the South Camp was officially closed on 11 August 2014. The IESC will confirm the closure and rehabilitation of the South camp site at the next audit.

All accommodation blocks in the Manlai camp have now been sound-proofed. Improvements are also understood to have been made to the operation of the waste water treatment plant on site which has reportedly reduced the odour issues raised by some Manlai residents at the last visit. The IESC will

confirm this positive progress at the next audit and continue to monitor accommodation conditions and communication with workers on current and long-term housing plans.

OT confirmed that there are no plans to reopen the former CIS camp in Khanbogd soum centre for workforce accommodation. Furthermore, there are no current plans for any new workforce accommodation outside the OT site in the short-term. However, there may be future accommodation requirements in Khanbogd soum which are not yet defined and the IESC encourages OT to advise Lenders in advance of any new accommodation plans, if they arise. The IESC intends to assess the accommodations being used by transport contractors to OT at the next audit.

6.2.3 Findings and Observations

Findings – Labour and Working Conditions

M2.9 The closure of the South camp is reported to have occurred as planned by 11 August 2014. The closure and rehabilitation works will be verified at the next audit as required (LMP Sections 5.1.5 and 5.1.8, L08).

M2.10 The key metrics have been agreed for reporting local content and a template has been developed. Regular reporting on local content including employment, training, and other activities to communities in Khanbogd and Omnogovi aimag now needs to commence (LMP Section 5.1.2, IMPm21).

Observations– Labour and Working Conditions

1. Provide an audit schedule and scope for HR/ER compliance assessment of contractor companies, as well as results of previous compliance assessments (if any) to Lenders/IESC (LMP Sections 5.1.8 and 9.2).
2. Provide evidence including documentation to demonstrate how the HR Management Plan has been applied by OT LLC and contractor companies. This should include evidence of monitoring by OT of implementation of the plan by contractors. Provide a detailed summary of the final outcomes of the redundancy program after its implementation (LMP Sections 5.1.3 and 9.1, L04).
3. Continue to transition Khanbogd *soum* herders working as road maintenance workers to long-term operational roles, including as 'hot seat crew' wherever feasible.
4. Continue to monitor local employment and ensure that new contractors also maintain preferential employment policies for Khanbogd and Omnogovi *aimag* (LMP Section 5.1.2, L02).
5. Ensure close coordination on the local Employability Program in Khanbogd *soum* between the CSP and HR and Training teams.
6. Finalise 5-year manpower forecasts for the operation and provide to Lenders/IESC when available.
7. Monitor and investigate the availability of PPE for workers since the introduction of new procedures in 2014 to ensure that sufficient PPE is being made available.
8. Continue to monitor accommodation conditions and worker attitudes at OT site and ensure that staff are kept informed of current and longer-term housing plans. Engage workers about long-term housing plans and explain uncertainties that exist while the UG construction is on hold (LMP Section 5.1.5, IMP, Table 2, IMP15).

6.3 RESETTLEMENT, COMPENSATION AND LIVELIHOODS IMPROVEMENT

6.3.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

6.3.2 Observations

6.3.2.1 Resettlement

The Completion Audit for resettled herders is still being finalised by OT. There have been some challenges reported in terms of collecting household level data on ownership of consumer goods, income and livelihood activities from herder families. This is understood to be due to reluctance by herders to release this information.[17] After discussions with the IESC, OT is exploring other opportunities to enhance the draft report and in particular, to utilise other available data to assess changes in livelihoods and standards of living of the affected households since resettlement. This is expected to include data from the Khanbogd *soum* census in 2013 and potentially other recent studies. Wherever possible, recent household data should be compared with results from the previous evaluation of resettled herders in 2010 as well as baseline data. As described in the last IESC report, it is important that the Completion Audit provides additional discussion on herder livelihoods and standards of living over time, conclusions against each of the key criteria of the audit[18], and sufficient detail on the 5 households affected a second time by economic displacement in 2011.[19]

The IESC expects the final audit report can be provided for review before the next site visit and can provide comments on a final draft if needed. Given the time since resettlement, it would be prudent for OT to close out the completion audit process by end of 2014 if possible. When finalised the report should be disclosed to resettled herders and other stakeholders as relevant (in appropriate format).

6.3.2.2 Economically Displaced Herders

The database of displaced herders continues to be improved by OT but remains a work in progress. As suggested previously, we recommend that this database be enhanced by including key socio-economic data for affected households to enable it to be used as a further internal monitoring tool. The Khanbogd census data from 2013 and baseline data for affected herders should be utilised. Furthermore, the database will need to be expanded to include other Khanbogd *soum* herders (or a sample thereof). These are herder households in 'Category E' of the RAP; whose winter shelters are not in the direct impact zone of operational activities, but whose herding activities are affected by the overall loss of summer grazing land and changes to land use in the *soum*. It is important that this group of herders is also targeted for further support measures and included in the monitoring and evaluation process.

The outcome evaluation of herders from the 2011 program has not progressed since the previous audit. It is understood from OT that it is still being planned as part of a wider study being discussed with the EHT and CAO. Whilst the IESC is supportive of integrating these studies to avoid duplication of fieldwork, consultation and so on, if agreement on the multi-disciplinary study cannot be reached very soon the outcome evaluation will need to proceed on its own. The outcome evaluation should be initiated before the end of 2014.[20]

The database of herder households should be used as a planning tool for the outcome evaluation process. A sample of herder households participating in different OT projects, from different *baghs* and from different impact categories will need to be included in the outcome evaluation (including vulnerable herder households). We note that this includes those directly compensated by OT, and other herder households from Khanbogd *soum*(the Category E households described above). This is necessary to assess the livelihood status of all herder groups, to determine how successful the compensation and sustainable

---

17 *It has been reported that some people are reluctant to report any income, livelihood or standard of living data due to the perception that it would be used to reduce or withhold support.*

18 *E.g. adequacy of delivery of compensation, consultation, resettlement entitlements, livelihood restoration, integration of resettlers into new locations, standards of living, vulnerable people assistance, monitoring and evaluation).*

19 *See the March-April 2014 IESC Audit Report for further details on the recommendations to finalise the Completion Audit report.*

20 *An initial (interim) outcome evaluation was planned for end 2013 and for a number of reasons including discussions with the EHT this was delayed until 2014. It is important that the period between implementation of measures and the first outcome evaluation is not protracted, otherwise it becomes more difficult to determine the extent to which displacement versus other external factors have influenced the livelihoods or standards of living of affected people.*

pastureland and other livelihood improvement projects have been to date, and to identify where other support measures are needed.

The number of complaints from herders about being included in the 2011 compensation program or receiving additional compensation appears to have reduced in 2014. There have been very few complaints recorded by OT in relation to resettlement, compensation, pastureland impacts or similar in 2014 thus far. There remains an outstanding group complaint from a number of herders (approximately 13 herders) about inadequate or no compensation for impacts from as yet unpaved roads.[21] Although it has been agreed with the EHT that the Compensation Working Group (CWG) will be re-established to investigate and address this issue, this group has not yet been reconvened. We understand that this is a *soum* responsibility but also encourage OT to continue to facilitate this process as far as is feasible. Whilst we support the approach of working with the CWG to close out these claims, it may be necessary for OT to develop an alternative resolution if the CWG is not convened for a protracted period.

6.3.2.3 Pastureland and Livelihood Improvement

The pasture and livelihood improvement program continues to be implemented to operationalise the Pastureland and Livelihood Improvement Strategy. Current activities include the participatory vegetation monitoring program with herders which will start in August 2014. A total of 30 vegetation monitoring points are being chosen with herders and a further 37 points have been chosen by the OT Environment team. The Lenders/IESC will want to review these sites, the engagement to choose them with herders, and the proposed methodology at the next audit. The animal health study conducted in Khanbogd is being extended to Bayan Ovoo and Manlai *soums* in 2014 and the Khaliv area water exploration project started in June. A carrying capacity assessment of the grazing areas inside the OT lease area has also been completed.

What still remains to be clarified by OT is how it intends to synthesise all of the pasture management, biodiversity conservation and livelihood improvement activities in accordance with the approved strategy, including proposals for biodiversity offsets when they are developed. A number of workshops, capacity building activities and studies have been initiated by the biodiversity team since May 2014 and these are ongoing. These include ecosystems services capacity building workshops with communities, national government and universities in Mongolia (See also Section 5.9). These activities should further enable OT to develop the ecosystems services monitoring plan and define how the different biodiversity conservation activities and offsets need to be implemented as part of the pastureland and livelihood improvement strategy. As in the previous report, the IESC suggests that OT prepare a 'road map' or similar to describe how the strategy will be operationalised by the different implementation and monitoring plans and the different teams. The road map needs to clearly define the different studies, teams, consultants and stakeholders responsible for and involved in the various activities to ensure that resources are effectively managed and coordination is maximised.

The internal Ecosystem Services Group continues to meet regularly and discuss and address a number of cross-cutting issues that arise. We reaffirm the need for there to be an 'action register' for the meeting minutes and a formal terms of reference for this group which is endorsed by senior management. Another area where the IESC will want to see further progress by the next audit, is on development of a risk assessment checklist/procedure to review proposed projects for unintended consequences, such as accidental introduction of plant species from outside the Gobi when hay is imported.

The well rehabilitation program, supplemental fodder program, grazing access inside OT fence and others, have all contributed towards OT's commitment to implement a sustainable pastureland management program for Khanbogd *soum* herders.[22] Review of these projects and participation by herders, has identified the need for further small scale enterprise development and income diversification opportunities for Khanbogd *soum* herders. The micro-credit loan scheme, the camel shearing project, and a household-level animal health support project currently being considered would be appropriate to further fulfil OT's commitments in this area. It is recognised that OT is trying to facilitate herders to establish cooperatives to develop livestock production and other economic activities. Whilst this is a worthwhile goal, the

21 *This complaint is understood to be from the unpaved section of the OT-GS road as well as the OT-KB road. This complaint is one of those being addressed by the CAO.*

22 *As described in Section 5.4 of the Resettlement Action Plan.*

establishment of cooperatives will not in themselves provide the income diversification and enhancement opportunities needed. Furthermore, cooperatives have been difficult to establish with herders to date, and these projects (or similar) need to be developed and funded by OT regardless of the status of cooperative development. It needs to be recognised that these sort of livelihood support projects for Khanbogd herders are part of the commitment made by OT to address displacement impacts of the mine.[23] This is different to the more discretionary community development contributions which are part of the broader regional development program (or Social Investment Fund). Contributions such as the camel wool and milk branding program, vegetable growing project and others are important and commendable, but have limited participation from Khanbogd *soum* herders and thus impact on their household livelihoods.

A review of the supplemental fodder program was conducted to address some of the concerns raised by herders and the IESC at the last audit. This review included direct engagement with herders to obtain their feedback and opinions. This has been reviewed by the IESC and is a good start to enable improvements to be identified for the program in coming years. OT is encouraged to collaborate with the Khanbogd *soum* to agree specific measures for improvements and document a process to implement these changes.

6.3.2.4 Vulnerable Displaced People

The vulnerable households database has been further refined to identify all herder and non-herder vulnerable households in Khanbogd *soum* (a total of 21 households). This includes all vulnerable herder households (a total of 8 households) whether or not they were included in the 2004 or 2011 compensation programs by OT. As discussed previously by the IESC, it is OT's obligation under its RAP commitments to support these vulnerable *herder* households in Khanbogd *soum*. As such, the updated database shows that all of the vulnerable herder households have benefited from at least the supplemental fodder program funded by OT, and some (3 households) have also received other benefits or support (e.g. compensation or participation in the vegetable growing project). However, the majority of vulnerable herder households appear to have not yet benefited from other livelihood restoration or assistance from OT.

It must therefore be a priority for OT to review each case in collaboration with the vulnerable herder households themselves, and develop a comprehensive set of additional support measures. This would typically involve a visit to each vulnerable herder household in partnership with the Social Welfare department, an assessment of the livelihood and standard of living status of each household , and participatory development of a series of further support measures for each household. This process and its implementation would constitute a comprehensive vulnerable people program, as envisaged by the commitments in the RAP. This process needs to be fully documented and the IESC/Lenders would expect to see the results of the assessment and the measures being proposed as soon as they are available.

Various projects offered by the company have been open to all *soum* residents. However, in the case of vulnerable people OT needs to be able to demonstrate that specific help to participate and/or tailored support measures where appropriate, have been offered to all vulnerable households. Importantly, support measures should focus on providing households with additional income generation or diversification opportunities. Some short-term health care, infrastructure improvements or similar, may be appropriate to enable vulnerable people to participate in the livelihood activities, but the focus should be on long-term household level economic improvement.

Regular monitoring of vulnerable herder households in Khanbogd should also be implemented as part of the vulnerable people program. Close monitoring of the implementation of support measures for these households is required to ensure they are delivered adequately and on time.

Continued support for other vulnerable households as part of the wider community development program is encouraged by the IESC. The vegetable growing project which is targeted at women-headed households and other vulnerable families is ongoing, and OT has recently donated more *gers* to vulnerable people in each of the target *soums*.

23 *This commitment is part of the entitlements for 'Category E' herders as described in the RAP.*

6.3.3 Findings and Observations

Findings –Resettlement, Compensation and Livelihoods Improvement

M1.21 The draft Completion Audit report is still being finalised. There have been some challenges in obtaining recent household level data on livelihoods and consumer goods ownership from affected herder households. However, OT is exploring opportunities to use the census results and other available data to make a comparison of resettled herders' livelihoods and standards of living over time. The Completion Audit report needs to be finalized as per the recommendations of the IESC (as outlined in this and the previous report(RAP, Sections 10.1, 10.2 10.4).

M1.23 The Outcome Evaluation by the 2011 program is still being considered as part of the multi-disciplinary study being planned by OT with the EHT and the CAO. There continues to be delays in implementing this study and as such, OT needs to decide whether or not to proceed with the outcome evaluation separately. The IESC/Lenders are available to review a proposed scope and methodology should this approach be needed. The outcome evaluation should be initiated before the end of 2014 (RAP Sections 10.1, 10.2, 10.4).

M1.24 Clarify how OT intends to synthesise all of the pasture management, biodiversity conservation and livelihood improvement activities in accordance with the approved strategy. Build on the recent biodiversity workshops and other ecosystems services activities to prepare a 'road map' or similar to describe how the Strategy will be fully operationalised, including how the governance arrangements will work (ESAP Item 7; RAP Entitlements Matrix; Pastureland and Livelihood Improvement Strategy).

M3.1 Some support has been provided to vulnerable herder households, however, additional assistance is required to fulfil the commitment in the RAP for a vulnerable people program. OT needs to review each vulnerable herder household, assess their current livelihood status and standard of living, and collaboratively develop a comprehensive vulnerable people program that incorporates specific livelihood and other support measures for each family. Support measures such as provision of healthcare, education support and income diversification opportunities should be considered. Implement the vulnerable people program and initiate regular monitoring of vulnerable herder households. (RAP Section 6, Table 25 -R05, R11).

M3.2 Develop and implement further opportunities for small scale enterprise development and income diversification for Khanbogd *soum* herders. Ensure contributions by OT are able to provide some immediate benefits and be self-sustaining in the future. Prioritise projects that have a combination of community-based training, provision of equipment/materials, and where appropriate, a revolving fund or equivalent access to credit. The micro-credit loan scheme, the camel shearing project, and a household level animal health support project being considered would be appropriate to further fulfil OT's commitments to implement the sustainable pastureland management program (RAP Section 5).

Observations– Resettlement, Compensation and Livelihoods Improvement

1. Find a mutually beneficial solution to the employment contract with the herder household who has not signed the Compensation Agreement,. Consider mediation by the *soum* or other third party as appropriate (RAP Table 12, RA02).
2. Expedite delivery of the permanent water well to the recently resettled herder household as agreed.
3. Continue to improve the displaced herder database and incorporate household socio-economic data to enable easier monitoring and evaluation processes (RAP Section 10, RA04, RA07, RA09).
4. Use the evaluation of the supplemental fodder program to identify improvement measures for the next year's program and work collaboratively with the soum to implement them.

6.4 STAKEHOLDER ENGAGEMENT

6.4.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit..

6.4.2 Observations

Stakeholder engagement was not reviewed in detail during this desk-top audit as it was not possible to consult with any external stakeholders as a part of the review. Progress by OT against the existing non-conformances raised by previous audits and overall implementation of the Stakeholder Engagement Plan (SEP) was assessed.

6.4.2.1 Community Engagement

Community engagement is being managed by a detailed calendar of engagement events coordinated by the CSP team. A revised Communities and Social Performance SEP is still being developed to act as the overarching plan that guides the calendar of activities and any issue-specific engagement plans that will be developed as required. It is important that this plan is finalized as soon as possible. The revised SEP should reflect the current circumstances of the operation, as well as incorporate all existing commitments from the previous operations-phase SEP[24] that was agreed with Lenders.

The IESC has seen some of the key results from joint meetings with the EHT and CAO over the past year. These joint meetings are the main forum for dialogue with the community on the Undai River diversion project and other herder issues raised through the CAO. It is evident from the information reviewed that the actions being agreed at these meetings are recorded and their implementation is tracked. However, what is still required is a forward looking plan for engagement activities specific to the Undai River. This plan (or equivalent) is important to ensure that: the approach to engagement with the community on this topic is clear to all parties; the commitments made to the community are fully captured and implemented; and there is a documented process that can be maintained even when there is organisational or other changes at OT that may impact the process. The issue-specific plan does not need to be overly complex/long but it should describe the agreed channels of engagement with the community and other stakeholders, the key methods being used for engagement and relevant procedures for approving, recording and tracking actions and results from the engagement process.

Improvements are still being made to systematize engagement records and analyze results to inform future consultation with communities. This is partly being achieved by the implementation of CSETS[25] and by updating of the community engagement strategy within the CSP team. Community relations staff and others readily respond to any issues raised by individual community members but there is potential for a more coordinated response to common/collective concerns raised by the community.[26] It is positive that the herders were asked their feedback on the supplemental fodder program for example, but for this engagement to be fully effective OT should now share with herders how the improvements identified will be integrated into the next year's program.

Vegetation monitoring with herders is the latest element of the Participatory Environmental Monitoring (PEM) program to be implemented. This work will commence in August 2014. A PEM program information dissemination plan has been developed since the last audit, as suggested by the IESC. This plan appears to be appropriate and if implemented as intended should contribute to maximising the benefits of this very good program. Some observations by the IESC on the plan include: ensure that results from each of monitoring activities are disseminated to the broader population at the appropriate time (in the draft plan it appears that the water monitoring will be shared with *bagh* residents whereas the elm tree and dust monitoring would be shared with only participating herders); and incorporate the upcoming vegetation monitoring in the dissemination plan. The IESC looks forward to seeing some of the feedback from the community after further disclosure activities have been conducted.

---

24 *Stakeholder Engagement Plan - Doc. No. OT-05-PLN-0001 dated 01.09.2013.*

25 *A 'Community and Stakeholder Engagement Tracking System' being rolled out by Rio Tinto operations worldwide.*

26 *The IESC previously suggested a 'frequently asked questions' leaflet or section in the community newsletter may be one method for responding to issues raised.*

6.4.2.2 Information Disclosure

The monthly community newsletter has been in place since 2009 and is proving to be an effective method for information disclosure to communities on a range of topics. Other topic specific materials continue to be published and disseminated by OT on information boards, at *bagh* meetings, at OT and government offices in the *soums* and elsewhere.

A template for regular disclosure of social and environmental performance data to communities has been reportedly developed by OT (See also Section 6.2.2.1). This will cover a series of key metrics, including local content figures, and will show OT performance over time. This is positive progress but implementation of this action has been protracted and it should be started before the next audit.

The budget has been approved to complete the internal fit-out of the Community Interaction Centre in Khanbogd which should enable a wider range of disclosure materials and methods to be used to inform the community and facilitate interaction between OT and the residents of Khanbogd.

6.4.2.3 Community Grievances

The number of community grievances received to date in 2014 is less than for the same period in 2013. Since January this year there have been less than 3-4 complaints per month (up to the end of May). As mentioned in Section **Error! Reference source not found.**, the number of complaints about herder livelihoods are lower than in 2013. This is good indication that the engagement with the EHT and others, as well as the different projects being implemented by OT, are having a positive influence on the relationship with Khanbogd herders. The most common types of complaints in 2014 are related to security and environmental issues (dust and water).

The complaints procedure has been revised and a draft provided to the IESC for review. Specific comments have been provided to OT on the draft procedure. In summary, the revised draft appears similar to the previous procedure but reflective of the current operation and organization. An overall suggestion by the IESC is for OT to consider how the procedure can be streamlined wherever possible. For example, the classification of complaints by level and the different types of investigative requirements and teams may be difficult to implement in practice (and add limited value). It is important to be able to escalate complaints as required, but the aim should be to have a simple process that is well coordinated, with accurate reporting, and focused on effective resolution.

Improvements continue to be made to the complaints management database. The logging, allocation, and processing system for community grievances is still a work in progress, but the IESC can see the considerable effort the CSP team has made to improve how complaints are recorded and tracked. The classification of complaints is now simpler and more accurate and the pace at which complaints are resolved is being captured. There remain some issues with the resolution process to ensure that complaints are properly closed out and all actions are fully recorded in the database. As mentioned previously, OT should define a common understanding of what it means to 'resolve' a complaint and train staff in this process. Trends can now be more readily analyzed with the improved database and the IESC looks forward to seeing how this revised information is reported to senior management. Regular reporting to communities on grievances needs to be prioritized.

A dedicated 'Community Grievance Officer' has been appointed by the CSP team and this person is now coordinating the process (See also Section 4.2.3). Refresher training is due on complaints management.

6.4.2.4 IFC Compliance Advisor Ombudsman and EBRD Project Complaints Mechanism

The CAO and PCM processes[27] are ongoing. As stated previously, these processes are outside the remit of the IESC although a number of activities intersect with elements of the OT operation being reviewed by the audit team. No further update on this process was sought as part of this desk-top audit, except we were able to review a summary of some of the recent activities and actions between OT, EHT and the CAO. The IESC intends to follow-up the status of these activities at the next site visit and meet members of the EHT and others as relevant.

27 *Note: The investigation of the validity and relevance of the complaint raised with the EBRD PCM is still in progress and as such the complaint is not yet confirmed.*

6.4.3 Findings and Observations

Findings –Stakeholder Engagement

M1.25 Finalise the community grievance management procedure based on IESC suggestions and implement. Continue to implement other improvements to the process, in particular the quality of resolutions undertaken and reported, and the management of the community grievance database (SEP Sections 5.7-5.8, SEP09).

M1.26 Prioritise reporting of community grievances externally to communities on a regular basis. OT should consult communities on the most appropriate content and methods to do this and keep it simple but consistent (SEP09).

M2.11 Upon receipt of the recommendation(s) from the Independent Expert Panel in relation to the Undai River, prepare/provide an issue-specific Undai River diversion project community engagement plan (or equivalent) to IESC/Lenders. Ensure that the various engagements by different OT teams and consultants are coordinated with stakeholders (SEP Annex E, SEP05).

Observations– Stakeholder Engagement

1. Finalise the revised community engagement strategy including the revised Communities and Social Performance SEP and detailed calendar of events (or implementation plan). Ensure that existing community engagement commitments are captured in the revised Communities and Social Performance SEP (SEP Section 6).
2. Finalise the PEM information dissemination and consultation plan. Implement the disclosure of PEM results and consultation with the wider herder population (and others as relevant) (SEP Table 4, SEP03).
3. Strengthen the recording, analysis and reporting of community engagement results to help identify key issues and inform future engagement activities and other actions. Find ways to respond to frequently asked questions or concerns raised by stakeholders (SEP11, SEP25, SEPm03, SEPm06).
4. Start regular reporting of social and environmental performance data and information to communities. Ensure this covers key metrics and shows OT performance over time. Quantitative data should be included wherever feasible.
5. Establish a wide range of disclosure materials and displays once the Community Interaction Centre is completed.
6. Conduct training for staff and management on the revised complaints procedure including other departments and managers (SEP Section 9.3).
7. Improve internal reporting of community grievances to senior management to inform the allocation of resources and decision making to address complaints (e.g. trends, common complaints, resolution rates etc).

6.5 REGIONAL AND COMMUNITY DEVELOPMENT

6.5.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

6.5.2 Observations

No significant issues or risks of concern were identified at the previous site visit and thus this desk-based audit did not include a detailed assessment of regional and community development at the present time. Progress was reported by OT on a number of activities. The children's playground has now been completed and technically commissioned, the Khanbogd public park conceptual design has been completed and agreed with the *soum* authorities, and the budget for the Community Interaction Centre has been approved by OT and work is expected to commence soon. Lastly, further work is understood to have been completed on the 5km of paved roads within the *soum* centre.

These activities will be confirmed at the next visit. Further assessment of drafting of the cooperation agreement, implementation of the Khanbogd Interim Agreement, and influx monitoring and management will also be conducted.

6.5.3 Findings and Observations

Findings – Regional and Community Development
Nil.

Observations– Regional and Community Development

1. Support dialogue on the topic of revenue sharing from central and regional government with the Khanbogd community, including agreeing the tripartite obligations of each of the *aimag*, *soum* and OT, in finalising the Cooperation Agreement. This process should include full participation of the *soum* authorities and residents (SEP28, SEP29, IMP (various), IMP20, IMP21).
2. Work with the road contractor and the *soum* to ensure the paved roads in Khanbogd *soum* centre are completed to the appropriate standard and the Interim Agreement commitment is fulfilled.
3. Continue to progress completion of the Cooperation Agreement and sub-agreements including facilitation of further participation of target communities (Investment Agreement Item 4.9, SEP28, SEP29, IMP (various), IMP20, IMP21).
4. Continue to dialogue on influx and related issues with Khanbogd *soum*. At the appropriate time develop procedures and build capacity of the *soum* and OT to monitor and deal with influx and associated issues (IMP02-04, IMP07, IMP08).
5. Conduct systematic evaluation of each of the regional and community development projects being implemented by OT to ensure the outcomes intended are being realized and to identify opportunities for improvements when needed. Publish results in community wherever possible.

7 HEALTH AND SAFETY

7.1 WORKER HEALTH

7.1.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

7.1.2 Observations

The IESC desktop review efforts relative to Worker Health were restricted to review of information summary update reporting (Health, Safety & Environment Report – Monthly and Quarterly, June 2014). Periodical medical assessments and follow-ups were performed under the continuing occupational health program. Ear- nose- throat, dermatological, and respiratory concerns continue to be the top issues raised by patients reporting to the SOS Clinic, with visits dropping from about 70/day in the first quarter to 50/day in the second quarter. Wellness talks continued through the quarter with 4 topics being covered.

7.1.3 Findings and Observations

Findings –Worker Health
Nil.

Observations– Worker Health

None.

7.2 COMMUNITY HEALTH

7.2.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

7.2.2 Observations

Several community health initiatives are ongoing or will be implemented for another phase in 2014. Stakeholder meetings were held on the Community-based HIV, TB and STI prevention project in May 2014 at the Ministry of Health (MoH) to agree the Behaviour Change Communications Service Delivery (BCC-SD) Plan which is being supported by OT.

The results of the herder health and livelihoods study were presented to *aimag* and *soum* stakeholders in Dalanzadgad in June. A Mongolian version of the herder health and livelihoods study is now available and the report is currently being translated. The IESC will review this report when finalised. As noted previously, it will be most useful if these results, particularly those related to herder livelihoods and well-being in Khanbogd, are integrated into the various programs for herders including the pastureland and livelihood improvement program and the outcome evaluation process. The IESC notes that OT needs to be careful to ensure that they receive the final data and reports in a format that can allow them to be readily used to monitor herder health. The overall aim is to be able to use this data to monitor progress and make decisions about which health programs to support.

7.2.3 Findings and Observations

Findings – Community Health
Nil.

Observations– Community Health

1. Provide Lenders/IESC with a copy of the final herder health and livelihoods study report. Ensure the results from the herder health status and livelihoods study are incorporated into the design of the pastureland and livelihood improvement programs and the outcome evaluation process for herders in Khanbogd (CHSS09, RAP Section 10.3).

7.3 WORKER SAFETY

7.3.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

7.3.2 Observations

The IESC desktop review efforts relative to Worker Safety were restricted to review of information summary update reporting (Health, Safety & Environment Report – Monthly and Quarterly, June 2014; incident and accident statistics). The HSE Department is responsible for hazard identification and risk management programs, performs risk assessments in response to incidents, and conducts audits to evaluate implementation of standards. Recent safety initiatives have included a site-wide incident Lessons Learnt review, support for implementation strategy for OT Phase II underground development, and emphasis on safety measures while working at heights.

Incidents, Injuries and Illnesses are tracked within the RTBS system, with summaries included in the monthly and quarterly HSE Reports. Incident descriptions encountered at departments are provided in the reports. Since January 2014, monthly incident counts (reflecting significant incident and significant potential incident) have ranged from 1 to 8. Five were reported in June 2014 and related to equipment operator/maintenance workers across five different departments, and included OT personnel and two contractors, reporting 3 injuries. Working at heights was a factor in two incidents. Action items from incident critical risk assessments and major internal audit findings are monitored with the goal of closure within the quarter following incident occurrence. Tracking records for the critical risk assessment of the reported transport service contractor accident described in Section 5.7.2 was confirmed, with action items pending completion and closure.

Incident and injury statistics are analysed within the RTBS system, which allows a range of calculations including Lost Time Injury (LTI) and LTI Frequency Rate (LTIFR), and All Injuries Frequency Rate (AIFR) figures for comparison with relevant targets(AIFR and LTI) that are tracked monthly.

7.3.3 Findings and Observations

Findings –Worker Safety
Nil.

Observations–Worker Safety

None.

7.4 COMMUNITY SAFETY

7.4.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

7.4.2 Observations

Another awareness training event on human security and human trafficking was held with youth in the target soums in May 2014. The workshop was hosted by 8 local peer educators and attended by 17 youths. The IESC continues to encourage OT to consider opportunities to include women and girls in Khanbogd directly in the human security and human trafficking training as this work continues. An update on the preparation of a draft manual on human trafficking and human security tailored for the local region which is being supported by OT will be sought at the next visit. A meeting was held between OT and the International Organisation for Migration (IOM) to discuss activities that can be funded by OT as part of the co-funding arrangement agreed with the IOM. OT is working with the IOM to now develop and sign an MOU to formalise this arrangement. This is positive progress and the IESC looks forward to seeing the next steps of this collaboration on this important issue. Further assessment of community safety and security topics will be conducted at the next audit, including the monitoring of crime statistics and dialogue with Khanbogd authorities.

7.4.3 Findings and Observations

Findings – Community Safety
Nil.

Observations– Community Safety

1. Finalise work on the draft manual on human trafficking and human security tailored for the local region and support the IOM work with migrant women in the OT area of influence, as relevant (CHSSMP Table 3, CHSS05, CHSS06).
2. Continue OT's contribution to monitor and raise awareness on human security and trafficking issues, and consider opportunities to include women and girls in Khanbogd in this training and other programs (CHSSMP Table 3, CHSS05, CHSS06).
3. Continue to receive and monitor crime statistics from the Khanbogd *soum* and engage in dialogue with authorities including the Police; consider if training or other activities can be implemented with workers to reduce some of the risks or if there are other such measures that OT could support (IMP Table 2, IMPm11, IMP04, IMP05).

8 CULTURAL HERITAGE

8.1.1 Project Strategy

No substantial changes were noted in the Project Strategy since the previous site visit.

8.1.2 Observations

No significant issues or risks of concern have been identified at the previous site visits and thus this desk-based audit did not include any further assessment of cultural heritage performance at the present time. The progress of implementation of the cultural heritage program and cultural awareness training of the workforce will be assessed at the next site visit.

8.1.3 Findings and Observations

Findings – Cultural Heritage
Nil.

Observations– Cultural Heritage

1. Continue active engagement of the national government and the CHP Advisory Board to monitor the introduction of new draft laws on Cultural Heritage Protection and Special Protected Areas. Determine when available, the implications of the new laws for OT; in particular those on immoveable heritage.