IVANHOE MINES MONGOLIA INC

OYU TOLGOI PROJECT

KHANBOGD SOUM OF UMNUGOBI AIMAG

ENVIRONMENTAL PROTECTION PLAN - 2006

Prepared by:
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IVANHOE MINES MONGOLIA INC

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INTRODUCTION

Ivanhoe Mines Mongolia Inc XXK (IMMI) owns Oyu Tolgoi project, which is located 640 km south of Ulaanbaatar and 80 km north of the Mongolia-China border in the southern Gobi region of Mongolia (Figure 1) and the project is in development stage. IMMI is a wholly owned subsidiary of Ivanhoe Mines Ltd., an international minerals exploration and mining company listed on the US, Australian and Canadian stock exchanges.

Ivanhoe operates Monywa Copper Mine in Myanmar and Savage River Iron Ore Mine in Australia, and the Bakyrchik gold mine currently under maintenance. Ivanhoe also controls exploration rights covering extensive areas in Mongolia, China, Myanmar, Vietnam and in Australia.

Technical studies of the project are still underway. As result of these studies, the development scenario contemplated in the Feasibility Study may be affected. Such changes will be incorporated into the Feasibility Study.

The current concept for the Project’s development provides for a Project life of 40 years. The concept is based on mining the South, Southwest, Central and Hugo South deposits by open pit and developing an underground mining operation for the Hugo North deposit. Ore will be processed in a conventional flotation concentrator that will produce a concentrate containing both gold and copper. Concentrate will be transported to or through China for smelting and refining.

A number of other ore treatment options are being examined including flash flotation with gravity recovery of some of the gold to produce gold doré bullion, and processing of ores by heap leaching, solvent extraction and electrowinning (SX-EW) to produce copper metal. IMMI may also investigate the viability of constructing a smelter to treat concentrates at site to produce copper metal, depending upon available funds and project financing.

The Project development plan envisages a self-sufficient mine site with regard to road and air access, water resources, fuel storage and the appropriate organizational structure to support the managerial, technical and administrative functions. Technical evaluations of electrical power supply sources are continuing.

By December 28 2005, drill length was 639,758 m in 1,487 holes in Southwest, South, Central and Hugo Dummet.

Geotechnical, geological and geophysical surveys and analysis and logging procedures of drill cores were performed at site. 2-4 pieces split core samples, assaying and laboratory analysis preparations are also done at an on-site facility.

All duplicate samples of core are stored in Ulaanbaatar, while half or quarter split duplicates and reject materials are kept at site in an organized “core farm”.

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Geochemical analysis for drill core and rock outcrops are performed by Australia’s SGS Analabs in Ulaanbaatar, Environmental Geochemistry International, Intec Ltd., James Cook University Laboratory, Assayers Canada, CDN Resource Laboratories and Activation Laboratories.

The Archaeological Institute of Mongolian Academy of Sciences has been engaged in detailed investigations of historical and cultural sites within the Oyu Tolgoi license area. As result, protection measures of the historical and cultural values have been determined, as for the Oyu Tolgoi copper-gold project commences production (Tseveenjav et al, 2001).

Eco Trade prepared Oyu Tolgoi EIA Screening and Detailed EIA (Dorjsuren et al, 2002-2006). In addition, an inspection group of Ministry of Nature and Environment visited the site and gave guidance and instructions.

AMEC E&C Services of Canada is independently estimating the resources of the Oyu Tolgoi project by each deposit. By May 5 2005, the total Oyu Tolgoi project contains approximately 800 tons of gold and 26.3 mln tons of copper.

BHP spent $1.8 million for the exploration of the project between 1997 and 2000. Then IMMI spent 183.39 billion tugrugs from 2000 to 2005 for exploration programs, out of which 27.7 billion was spent in 2005.

1. Project location and access

Oyu Tolgoi Project of IMMI is located in the territory of Javkhlan bagh of Khanbogd soum, Umnugobi aimag. The project is located:

- 640 km south of Ulaanbaatar
- 210 km east of Dalanzadgad and
- 45 km west of Khanbogd.

Access to the property from the Mongolian capital, Ulaanbaatar, is possible either by an unpaved road, via Mandalgovi, a 12-hour drive under good conditions, or by air. IMMI has constructed a 1600 m long gravel airstrip at the site. The Chinese government has constructed 160 km road from Ganqimaodao to Wuyuan, providing a direct road link between the Mongolian border crossing at Gashuun Suhait, 80 km south of Oyu Tolgoi, and the Trans-China Railway system. The rough track/trail between the Mongolian border and the site will be upgraded in the framework of the development plan.

2. History

The existence of copper in the Oyu Tolgoi area has been recognized since the Bronze Age, but contemporary exploration for Mineral Resources did not begin until the 1980s, when a joint Mongolian and Russian geochemical survey team identified a molybdenum anomaly at the Central deposit and evidence of alteration and copper mineralization at the South deposit.
Dondog Garamjav, now senior geologist with IMMI, first visited Oyu Tolgoi in 1983 and found evidence of alteration and copper mineralization at the South deposit. In September 1996 he brought a team of Magma Copper geologists to the area, who identified a porphyry copper leached cap nearby. Magma Copper secured the exploration tenements in late 1996.

In 1997 and 1998, BHP (which had acquired Magma Copper) carried out geological, geochemical and geophysical surveys and completed two drilling programs. In 1999, based on the results of this drilling, BHP estimated a preliminary resource of 438 million tonnes averaging 0.52% Cu and 0.25 ppm Au (Perello, 2001).

In May 1999, Ivanhoe entered into an agreement with BHP to acquire a 100% interest in the property.

Since 2000, IMMI has conducted an extensive drilling program at Oyu Tolgoi. This led to the discovery of the Southwest deposit in 2001 and the Hugo Dummett deposit in late 2002. Drilling has continued to expand the knowledge of the Oyu Tolgoi resource with the most recent resource estimate undertaken in November 2003.

In late 2001, in parallel with the exploration drilling, IMMI initiated a number of conceptual engineering studies to assess the potential for the project. These studies were conducted by both IMMI personnel and contractors engaged by IMMI and considered a range of development options. In addition to the engineering studies, IMMI commissioned SGS Lakefield Research Limited (Lakefield) to complete a significant metallurgical testwork programme at its facilities in Canada.

In February 2003, Ivanhoe engaged AMEC Ausenco Joint Venture (AAJV) to conduct more detailed engineering studies regarding development options for the project. This Study is based largely on the work undertaken by AAJV.

IMMI has been evaluating several alternatives to provide access for exploration of the ore bodies that would be mined by underground methods. In August 2003, a box cut was excavated to provide access to a decline portal immediately to the southeast of the Hugo Dummett deposit.

3. Tenure

The Project is based on four mining licenses, covering a total area of 23,867 ha. The mining licenses, granted on 23 December 2003, are:

- 6708A Manakht
- 6709A Oyu Tolgoi
- 6710A Khokh Khad
- 6711A Ulaan Uul.
Figure 1. Location of Oyu Tolgoi Project
4. Geology

4.1. Mineralization

Mineralization and alteration at Oyu Tolgoi is characterized by multiple copper-gold porphyry centers which occur (dependent on erosion of high sulphidation systems) above and partially telescoped onto the underlying copper-gold porphyry systems.

The high-grade core (>1 g/t Au) of Southwest is a cylindrically-shaped copper-gold porphyry, 250 m in diameter, that extends vertically for over 800 m. Mineralization is centered on small 10 to 30 m wide quartz monzodiorite (QMD) dykes and extends for over 100 m into the adjacent host basaltic volcanics. Gold to copper ratios increase from 2:1 to 3:1 at depth. Lower grade, propylitic altered basalt with 1:1 gold to copper ratios covers an area of 600 m by 2,000 m around the high-grade core.

The South deposit is a copper porphyry which, unlike the nearby Southwest, is not gold-rich. The geometry of the system is poorly understood, but the prospect area covers about 400 m by 300 m in area, and mineralization extends to depths of over 500 m.

High sulphidation systems partly telescoped onto underlying porphyry systems occur at Central and Hugo, the latter hosted by dacite ashflow tuffs which overlie basaltic volcanics. At Central, covellite-pyrite is related to an upwardly flared zone of intense quartz-sericite alteration, and centered on porphyry-style quartz-veined QMD dykes. In Central, a supergene-enriched chalcocite blanket, tens of meters in thickness, has developed overlying the covellite pyrite-rich HS mineralization. Sooty chalcocite coating pyrite and filling fractures underlies a 20 m to 60 m thick, hematite, goethite-rich leached cap.

High-grade copper mineralization at Hugo occurs predominantly as bornite, chalcocite and chalcopyrite. Pyrite, enargite, tetrahedrite-tennantite occur in subordinate amounts mainly in Hugo South. A typical sulphide zonation from the high-grade copper core to low-grade copper mineralization is bornite + chalcocite, followed outward to chalcopyrite (+/- tetrahedrite-tennantite) and then finally pyrite (+/- enargite). Enargite, bornite + pyrite, and, locally, covellite are common sulphide minerals in the ash flow tuff. A large part of Hugo South is hosted by ash flow tuff; in contrast, the high-grade mineralization at Hugo North is almost entirely within basalt. Bornite-chalcocite-chalcopyrite with minor enargite, and tetrahedrite-tennantite occur in the basalt and QMD intrusions. Molybdenite occurs locally in all rock types. Gold (g/t) to copper (%) ratios over much of the deposit are 1:10, but in strongly quartz-veined QMD intrusions and adjacent wall rocks encountered in Hugo North, gold to copper ratios increase to 1:1. These high gold ratios correlate with bornite.
4.2. Mineral Resources

AMEC E&C Services Limited (AMEC) of Canada estimated the mineral resources contained in the Project deposits. The resource estimates were calculated from 3-dimensional block models utilizing commercial mine planning software. Industry-accepted methods were used to create interpolation domains based on mineralized geology and grade estimation based on ordinary kriging.
The Project mineral resources have been classified using logic consistent with the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines (CIM Standards).

The Project mineralization as of November 2003 is classified as Indicated and Inferred Mineral Resources. The resources are shown in Table 1 and are reported at a copper equivalent cut-off grade using metal prices of US$0.80 for copper and US$350/oz for gold. Drilling is in progress to allow updated resource modeling that will allow resources to be raised to Measured and Indicated categories.

The cut-off grades used in resource reporting were selected by AMEC as being representative of typical cut-off grades applying at large scale open pit and underground mining operations.

### Project Mineral Resources

<table>
<thead>
<tr>
<th>Mineral Resource Category</th>
<th>Tonnes</th>
<th>Cu %</th>
<th>Au g/t</th>
<th>Cu Eq. %</th>
<th>Cu’000 lb</th>
<th>Au oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured+ Indicated</td>
<td>1,149,160,000</td>
<td>1.30</td>
<td>0.47</td>
<td>1.54</td>
<td>32,850,000</td>
<td>17,340,000</td>
</tr>
<tr>
<td>Inferred</td>
<td>1,160,120,000</td>
<td>1.02</td>
<td>0.23</td>
<td>1.16</td>
<td>26,200,000</td>
<td>8,400,000</td>
</tr>
<tr>
<td>Total</td>
<td>2,309,280,000</td>
<td>1.16</td>
<td>0.35</td>
<td>1.35</td>
<td>59,050,000</td>
<td>25,740,000</td>
</tr>
</tbody>
</table>

5. Mining

The basic concept adopted is to mine Southwest, South, Central, and Hugo South by open cut methods and Hugo North by underground methods. Underground mining scenarios have also been considered for Hugo South and further investigation is required to establish the most appropriate mining method for this deposit. Ongoing investigation will aim at optimizing the mining scenarios considered, as well examining alternatives such as mining part of Central to provide feed for a separate heap leach SX-EW facility.

The Study has adopted a multi-phase mine plan for the Project; Initially, a 20 Mt/a concentrator is planned, with ore feed from the Southwest open pit followed by Central and then Hugo South open pits. The Hugo North underground mine will be developed during the first four years of the mine operation with development ore and the initial production providing a small but increasing component of the concentrator feed. During Years 3 and 4, the concentrator will be expanded to 40 Mt/a, with the increased capacity coming on line in Year 5.
6. Project Execution

The Project provides an opportunity to construct a major world-class mining project in Mongolia. The operation will be among the largest copper mines in the world and will use equipment that is amongst the largest of its type.

IMMI will invite selected engineering companies to tender for the contract to oversee the design and construction of the facilities. The companies that will tender for this work have not yet been selected, but will include the major engineering companies in the world. The selected contractor will complete basic engineering for the Project in its home country based on internationally recognized engineering codes and standards (IMMI will seek approval from relevant Mongolian authorities to undertake the work on this basis).

Detailed engineering will then be undertaken by sub-consultants with experience in the region so that the final designs reflect materials and construction techniques applicable to the region.

Because of the nature and scope of the work involved in the Project, a major proportion of the site works will be undertaken by international contractors.
1. PHYSICAL ENVIRONMENT OF THE PROJECT AREA

1.1. Physiography

Geographically, the Oyu Tolgoi Project is in the Galbyn Gobi area. Galbyn Gobi can be described as the lowest altitude Gobi desert-steppe in Mongolia. General altitude ranges between 937.3 m (Bulan Sukhai) and 1,202.3 m ASL (Zagayln Khuren Ovo) and gradually lowers to the southwest, dropping to 878.5 m at Daichingyn Zag.

Low hills and mounds featuring rocky outcrops occur for about 14 km from the southeast of Oyu Tolgoi to where Undai River crosses Javkhlan bagh area. There are 1,150 m – 1,196 m ASL small mountain ranges in areas along the state border with China.

The geology of the area is quite compound and base sediment consists of Cretaceous conglomerate, sandstone, aleurolite, Neogenic clay and is a compound environment strongly affected by structural cuts. Quaternary or contemporary strata that form the base of road are considerably thick, 20-180 m thick sand, gravel and clay are intercalated. Although moisture is less due to the Gobi region climate, swelling occurs in the soil after rain events.

1.2. Climate

The climate at Oyu Tolgoi is typical continental with a cool spring and autumn, hot summers, and cold winters. Spring is dry and windy resulting in significant regional dust storms. The harsh climatic conditions of the Gobi are a significant influence on the environmental and socio-economic conditions of the Project area. Temperature variation is extreme with an annual expected minimum of -31º C and summers producing maximum temperatures regularly above 40º C.

Weather records for the area were examined from a number of sources including:

- monthly average records from Bayan-Ovoo Soum and Khanbogd Soum
- regional weather data from Dalanzagdad
- local records from the Project automated weather station (limited data available)

Further monitoring at Oyu Tolgoi and review of daily records from Bayan-Ovoo and Khanbogd Soum will provide more definitive climate information for detailed Project design.

1.3. Air Quality

The air quality at Oyu Tolgoi is affected by regional dust storms during strong north and northerly winds in spring. Monitoring during June 2003 recorded a maximum 24-hour average total suspended particulate (TSP) concentration of 530 µg/m3. The Mongolian
The national standard for dust concentrations is 150 µg/m³ over a 24-hour averaging period. The maximum 24-hour PM10 (less than 10 µ diameter) fraction concentration was 129 µg/m³ and the maximum 24-hour PM2.5 concentration was 51 µg/m³ during recorded dust storms.

The monitoring indicates that seasonal dust storms will reduce visibility and cause dust concentrations in excess of environmental and health standards. Mongolian observational data indicates that between 20 and 30 dust storms can be expected in an annual period, with the average storm lasting between 3 and 6 hours (Natsagdorj, 2002).

The infrastructure corridor is a scarcely populated area and there’s no major pollutant or waste-generating source that is potential to affect the air quality. Besides seasonal dust storms, the air is clean.

1.4. Surface Water

Most riverbeds in this area are ephemeral creeks that remain dry most times of the year and only flow following significant rain events. Flows after heavy summer rainstorms often result in very turbulent, high-velocity mud flows, locally termed “Gobian wild floods.” These floods have been known to destroy road crossings and to carry away vehicles caught in the riverbeds.

No surface flow data are available for these isolated and episodic flood events. Discussions with local herders indicate that, on average, four to six flow events occur in summer to autumn each year and high velocity flow events usually last between 30 to 90 minutes. During the 2003 field season, 1.5-2.0 m deep flow was measured at the crossing of Umdai River near Javkhlanbagh.

The turbulent floods carry small particles of mud, gravel and mud with grass roots. After the flow events these remain and form into soft, sticky and swollen sediments, making it hard to cross by vehicles.

Several shallow springs occur along the Umdai dry river bed between Oyu Tolgoi and Javkhlanbagh where subsurface river bed flows are forced to the surface and result in shallow surface flows between 5 and 50 meters in length. These springs include Khokh Had (46T0653810 UTM475661), Maanit and Bunkhant (46T0663490 UTM4737060) and Tavan Ovoot (46T0663490 UTM4737060).

All the surface water paths generally head to the south, creating salt-marshes with flat muddy surface on their way and evaporate. On these flat muddy surfaces, Gobian ligneous and shrubbery plants such as Tamarix ramossima, Carex diruscula, Reamurria soongarica and Salsola passerine grow. The salt-marshes remain muddy or wet during or for approximately a week after rain events. This condition is detrimental to road construction work.

1.5. Hydrology
Oyu Tolgoi is located within the closed Central Asian drainage basin. The major hydrological feature on the Oyu Tolgoi license is the Umdai River, which only flows following significant summer rain events. The Umdai drainage system originates from Luulit Lake in Manlai Soum and discharges via infiltration to the Galbyn Gobi area approximately 50 km south of Oyu Tolgoi. The drainage system has a catchment of approximately 1,081 km² and a length of 120 km.

Minor surface drainage at Oyu Tolgoi originates from the rocky hills to the north and either flows to the Umdai or, as in the eastern section of the Project area, infiltrates and evaporates where drainage is interrupted by the low hills to the south.

**Characteristics of Main Ephemeral Drainage Paths that Transit Project Area**

<table>
<thead>
<tr>
<th>№</th>
<th>Name of river and river beds</th>
<th>Catchment area (km²)</th>
<th>Average width (m)</th>
<th>Average depth of bed (m) *</th>
<th>Length in Project area (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Umdai River (tributary-1)</td>
<td>17.93</td>
<td>12</td>
<td>1.0</td>
<td>8.058</td>
</tr>
<tr>
<td>2</td>
<td>With 2 Elm River Bed UNRB 1-1</td>
<td>48.14</td>
<td>4</td>
<td>0.4</td>
<td>5.23</td>
</tr>
<tr>
<td>3</td>
<td>SW UNRB 1-2</td>
<td>360.1</td>
<td>15.2</td>
<td>1.3</td>
<td>2.276</td>
</tr>
<tr>
<td>4</td>
<td>Umdai River (tributary-2)</td>
<td>554.5</td>
<td>14.3</td>
<td>1.1</td>
<td>12.31</td>
</tr>
<tr>
<td>5</td>
<td>West UNRB 2-1 **</td>
<td>12.42</td>
<td>7</td>
<td>0.2</td>
<td>3.06</td>
</tr>
<tr>
<td>6</td>
<td>Umdai River (Tributary-3)</td>
<td>21.82</td>
<td>11.2</td>
<td>0.9</td>
<td>10.62</td>
</tr>
<tr>
<td>7</td>
<td>NW UNRB 3-1 **</td>
<td>0.8697</td>
<td>0.53</td>
<td>0.2</td>
<td>0.76</td>
</tr>
<tr>
<td>8</td>
<td>East from 3-1 UN RB 3-2 **</td>
<td>1.12</td>
<td>1.8</td>
<td>0.2</td>
<td>1.53</td>
</tr>
<tr>
<td>9</td>
<td>East from 3-2UN RB 3-3 **</td>
<td>2.441</td>
<td>1.9</td>
<td>0.3</td>
<td>2.55</td>
</tr>
<tr>
<td>10</td>
<td>East from 3-3 UN RB 3-4 **</td>
<td>2.924</td>
<td>2.3</td>
<td>0.35</td>
<td>3.06</td>
</tr>
<tr>
<td>11</td>
<td>East from 3-4UN RB 3-5 **</td>
<td>2.154</td>
<td>0.7</td>
<td>0.1</td>
<td>3.83</td>
</tr>
<tr>
<td>12</td>
<td>East from 3-5 UNRB3-6 **</td>
<td>1.539</td>
<td>2.0</td>
<td>0.2</td>
<td>1.65</td>
</tr>
<tr>
<td>13</td>
<td>2 Two Trees River bed</td>
<td>43.67</td>
<td>5.3</td>
<td>0.7</td>
<td>8.3</td>
</tr>
<tr>
<td>14</td>
<td>Khaliv Shand River bed</td>
<td>12.09</td>
<td>6.1</td>
<td>0.6</td>
<td>3.71</td>
</tr>
</tbody>
</table>

* The average depth of river bed was measured from the river bank (natural ground level).

**UNRB- Unnamed River bed (ephemeral drainage paths)

**1.6. Surface Water Springs**

A number of small springs occur in the normally dry bed of the Umdai River within the Project area. The most significant is Bor Ovoo spring, southwest of the existing exploration camp. These pools freeze in winter, and ice may form up to 0.5 m above the riverbed. The fresh water springs support grazing wildlife, domestic stock and at least one species of a commonly occurring frog during summer months.

Water quality within the springs at Oyu Tolgoi is monitored twice per year when not frozen. The water quality has a neutral pH and is low in both TDS and dissolved metals. Suspended solids and turbidity of the springs increase during dry warm periods when flows are reduced.
Stock use of the small springs also results in increased disturbance of the water body and higher nutrient levels.

1.7. Groundwater

Depth to groundwater, provided from RC drill results vary within the Project area from less than 3 m from surface along the Umdai river bed to 65 m at South and Central.

The Project groundwater resources are monitored through exploration drill holes and via the shallow stock wells that occur within the Project area. Wells and drill holes are monitored monthly for depth, electro-conductivity and pH, and quarterly for general chemistry including metal content. Results of groundwater monitoring to date indicate that the water is weakly alkaline (pH 7.5 to 8.5) with salt concentrations between 1,200 and 8,500 ppm. The monitoring shows that the water is generally suitable for stock water requirements, but would require treatment for potable use. Analysis of metal concentrations shows no significant dissolved metals within the groundwater. Shallow wells are used by local herders for stock and for domestic use. The shallow well depths are generally between 1 and 3 m. This shallow water is generally lower in total dissolved salts than the deeper aquifer, probably due to rapid recharge following rainfall events.

1.8. Soils

The field survey recorded the following three sub-types of soil which belong to the Gobian brown soil:

1. Light brown
2. Semidesert-steppe light brown

Below is the characteristics of the sub-types of soil and Table 3 summarizes the chemical properties and other parameters.
Agrochemical properties of soils

<table>
<thead>
<tr>
<th>Number of intersection</th>
<th>Soil layer</th>
<th>Depth of sampling m</th>
<th>Percentage</th>
<th>Alkalis in 100 g soil, mg Eq.</th>
<th>Active elements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ca</td>
<td>Mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil type</th>
<th>Humus</th>
<th>Total Nitrogen</th>
<th>Carbonate</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semidesert-steppe low hill, low nutrient light brown soil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>B1K</td>
<td>0-10</td>
<td>0.38</td>
<td>2.44</td>
</tr>
<tr>
<td></td>
<td>B1C</td>
<td>20-30</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semidesert-steppe, carbonated and light-clayish soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semidesert-steppe light brown soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semidesert-steppe brown-grey soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>17</td>
</tr>
</tbody>
</table>

Source: T. Munkhbat, Institute of Geography, Result of analysis conducted at the Soil Studies Laboratory, September 2003

1.9. Vegetation

The vegetation of the Oyu Tolgoi area is typical of Central Asian semidesert and desert steppe flora types. The open and flat desert steppe and low hills are sparsely covered with small (<0.5m) drought tolerant shrub species. Ephemeral river beds, dry ravines or playa soil support some species of trees (elm trees, tamarix and poplar) to grow and shrubs mainly grow in areas where shallow water closely exists beneath surface.

Bulan Sukhait is the only place in Galbyn Gobi that is rich in plant species and there are plants that grow in this place only. For example, there are several areas with about 350 tamarix ramosissima, 3-4 individuals of Elaeagnus Moorcrofti and Phragmites communis. Such kind of plant community is rare in Gobi region.

It was first documented that about a hundred Populus diversifolia were growing in the east side of Tsagaan Khad camp. This plant occurs in areas where shallow fresh water exists and it also is rarely found in Galbyn Gobi and other Gobi regions. The saxaul field 70 km southwest of Oyu Tolgoi hosts Sophora alopecuroides and Glycyhiza uralensis. These species rarely occur in Gobi, particularly in the western portion of Alashan Gobi. Five different plant communities were identified here, which are discussed below in detail:

1.10. Javkhland semidesert-steppe
The road corridor between Oyu Tolgoi and Javkhlan bagh is characterized by valleys with typical semidesert vegetation. *Anabasis brevifolia*, *Reammuria soongarica*, *Salsola passerina* and *Nitruria sibirica* dominate here. These species, not taller than 10 cm and sparsely grow (covers 9% of the surface), are tolerant in drought and saline conditions. Density is 20-30 for a 10 m x 10 m area.

1.11. Galbyn Gobi desert-steppe

The vast open area south of the Javkhlan bagh is the Galbyn Gobi. Density of the sparsely growing shrubs in this dry steppe is 20-25 in a 10m x 10m area. The dominating species are *Sympegma regelii + Anabasis brevifolia + (Salsola passerina + Reamurria soongarica, Potaninia Mongolica + Convoluclus fruticosa, Zygophylluim xantexylon and Nitraria sibirica* etc.

1.12. Galbyn Gobi low hills

*Zygophyluim xantexylon, Anabasis brevifolia, Salsola passerina, Reamurria soongarica* and *Sympegma regelii* are found in the low hills southeast of Oyu Tolgoi and the territories along the border between Mongolia and China. 10 m x 10 m area where small, dry shrubs that do not usually exceed 20 cm in height dominate, host maximum of 20 individuals.

1.13. Ephemeral river beds

Vegetation is thicker and dense along the ephemeral river beds, and the sand in river bed has moisture to some extent. Vegetation cover is about 50% of the surface. Shrub species are generally 50 cm - 80 cm in height. Here, shrubs such as *Achnatherum splendens, Kalidimn faliatinim, Reammuria soongarica* and *Nitraria Sibirica* dominate. Up to 4 m tall *Ulmus pumila* are found along the dry ravines and river beds north of the infrastructure corridor between Oyu Tolgoi and Javkhlan bagh.

1.14. Galbyn Gobi episodic lake

Between the proposed road routes and the south of Galbyn Gobi, there’s an episodic lake area called Bulan Sukhait. The current water exploration field is east of Bulan Sukhait. As this area is one of the lowest altitude points in Galbyn Gobi, it is recharged by surface water flow. Shallow groundwater and relatively rich flora benefits soil formation, and allows humus soil is accumulated. Therefore, this episodic lake system is a habitat for various vegetation species growing in a close density. The vegetation community of this episodic lake area is dominated by *Tamarix ramosissima, Carex diruscula, Reamurria soongarica* and *Salsola passerina*.

1.15. Fauna

Regional fauna information has been obtained from previous studies and limited field records obtained in June and July 2002. Further fauna surveys specifically targeting the
Project area are scheduled for completion in September 2003. Table 4 provides fauna diversity data for the region that includes Oyu Tolgoi. Nine species that occur in this region are listed as having conservation significance in Mongolia. However, Oyu Tolgoi has not been identified as having significant habitat value for any of the nine listed species. The Project area is located on the boundary between the Northern Gobi and Dornogobi biogeographic sub-regions (Academy of Science Mongolia, 1990). Many grazing mammal species are migratory and range over the entire region. Migratory bird species have been observed during seasonal migrations, particularly where fresh water or shelter is found.

Regional Fauna Diversity

Table 4.

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Genera</th>
<th>Number of Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reptiles</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Mammals</td>
<td>29</td>
<td>45</td>
</tr>
<tr>
<td>Birds</td>
<td>48</td>
<td>62</td>
</tr>
<tr>
<td>Insects</td>
<td>125</td>
<td>183</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>301</td>
</tr>
</tbody>
</table>

Khanbogd soum (Eco Trade, 2002)

1.16. Land use and socio-economic conditions

Oyu Tolgoi Project is situated on the territory of Javkhlant Bagh of Khanbogd Soum, Umnugobi Aimag. Javkhlant Bagh center is 30 km south of Oyu Tolgoi, along the proposed access road and the local road between Khanbogd soum and Gashuun Sukhait. The bagh has a meeting venue and a mobile health service facility that is centered in Khanbogd soum.

Herder families live near the shallow wells and small springs that occur in the normally dry bed of the Umdai River. Nomadic herder families generally rely on stock and animal produce for food, with income gathered from the sale of cashmere, wool, hide and other animal products. April and December are most convenient time for the herders, and they trade animal products for consumables and food with Chinese traders. Local herders sell 3-4 tons of raw cashmere, 4-5 tons of camel wool and 8-15 tons of hide annually. The herders are individual traders and travel to the border checkpoint to enter into China. This trading is an important method for the herders to obtain necessary products at cheap prices. 150-200 herders living in the territory next to the border are able to enter into China for this trading process.
2. KEY ENVIRONMENTAL PROTECTION GOALS

2.1. Goals and Policy

The main objective of the IMMI Environmental Protection Plan (EPP) is to facilitate the geological and exploration activities undertaken in the country is conducted within the scope of international and Mongolian environmental laws as well as in accordance with the company’s policy on environmental management.

Every year, the company plans and implements environmental protection measures in order to establish appropriate environmental management in exploration areas.

In 2005, the company will develop and get approval for supplementary EPPs whenever additional exploration activities are planned under the EPP; adhere to the requirements of the State Environmental Monitoring Inspector as well as environmental standards, rules and regulations approved by relevant authorities; and improve internal control.

The company developed and maintains environment protection policy. It is in the company policy and procedures as follows:
ENVIRONMENTAL POLICY

Ivanhoe Mines Mongolia Inc (IMMI) is committed to sustainable development through finding a balance between environmental, social and economic needs. As a responsible corporate member of the community, IMMI recognizes its responsibilities to the environment and to the communities in which it operates.

To demonstrate continuous improvement in environmental performance, IMMI will:

* Establish and maintain a structured environmental management system, consistent with ISO 14001, to provide a framework for continuous performance monitoring and improvement;

* Identify, assess, minimize and manage impacts on the environment to prevent pollution and ensure efficient use of resources;

* Meet or exceed all environmental legal and other requirements;

* Integrate environmental considerations into all aspects of our activities including exploration, project development, operation and closure;

* Provide support and training for line management to assist them in meeting their environmental responsibilities;

* Assess, monitor and report our environmental impacts on a regular basis;

* Encourage open, honest and responsive communication of environmental matters with our employees, stakeholders and the community;

* Respect and protect the cultural heritage and traditional rights of indigenous people.

IMMI will periodically review its system to ensure they are appropriate to the nature and scale of its operations.
2.2. Main principles for environmental protection

Environmental officers of the project are responsible for ensuring IMMI comply with current provisions of environmental and mineral laws of Mongolia that relate to environmental protection, and fulfill its obligations under the laws and commitments undertaken.

IMMI will introduce, obtain approvals, decisions and permits on any environmental issues from authorized state officials and maintain harmonized relation with the community and other land owners under the legal framework.

Also, the company will identify and monitor areas that require special attention before commencing any minerals exploration activities. These may include:

- Easily impacted areas (e.g. springs)
- Water resources currently in use and its protection
- Residential locations of herdsmen and pastures (winter, spring quarters)
- Archaeological, historical and cultural sites
- Mutual respect for interests of neighboring land owners and users, etc.

2.3. Health, Safety and Environmental Management System

2.3.1. Health and Safety

IMMI has developed a safety management system based on the international safety standard OHSAS 18001 and the Mongolian legal compliance requirements will be managed and monitored through this system. Contractors working for IMMI will be required to detail their activities, define safety standards and operating criteria and means of achieving the standards in a Safety Requirements Document.

IMMI plans to organize preliminary trainings several months prior to development and construction. These trainings will include language, health and safety and trade skills. The company shall conduct trainings at the workstations to make the employees competent, in the event of building constructions and foreign workforce is needed.

In order to maximize the project benefit for Umnugobi residents, the company will undertake to recruit and train local workforce.

2.3.2. Environment

IMMI has developed the environmental management system in accordance with ISO 14001. Through the system, the requirements of the applicable environmental laws of Mongolia shall be ensured and the performances shall be monitored. IMMI shall require its contractors to reflect the environmental protection principles in their operations and define the implementation methods.
IMMI is effecting the Environmental Impact Assessment of the project in certain stages as prescribed in the guidelines that were issued in March 2003 by the Ministry of Nature and Environment. The EIA will include the project’s Environmental Management Plan (EMP). The EIA will have separate chapters on mining and processing, water supply and infrastructure, power and transport issues (See the appendix section). Also, the EIA assessed in detail the first phase of the project based on an assumption of 20 million tpa. Further, additional or revised environmental studies and assessments have been planned for the 40 mln tpa expansion case after the commencement of the project.

EMP will detail how IMMI will manage the impact of the project on environment, specifically the control methods and procedure to be applied. Specific plans on dust, water management, hazardous chemicals management restoration and mine waste management are being developed.

Since March 2003, IMMI has conducted official meetings several times with the residents of Umnugobi aimag regarding the impact on environment and social benefits of the project. As result of these meetings, the company has principally completed the development of the strategy for local workforce recruitment and job training, support for the social infrastructure and regional businesses.

IMMI focuses on the negotiation with the herder families who live within 20 km from Oyu Tolgoi on land use issues.

2.4. Planning

The company develops the environmental protection plan on an annual basis at this detailed exploration stage. IMMI will develop supplementary EPPs whenever additional activities related to the project are executed however not in the plan, and submit to the local administrations. The following are examples:

- Exploration activities
- Developments/advances
- Roads and newly emerged road networks
- Camps and construction of utilities
- Water resource
- Refueling and fuel/lubricants storage areas
- Waste management

Measures intended to minimize land disturbance and restoration cost during exploration activities shall be included.

2.5. Organization
There’s a department at the company in charge of the project environmental issues. The department consists of 9 employees.

- Sustainability, an Australian company of international consultancy status, has been engaged for environmental consulting for IMMI since 2002.
- 1 expat manager in charge of health, safety and environment
- 1 senior environmental coordinator who liaises with the Mongolian government institutions for the project’s environmental activities under the supervision of the consultants
- 2 officers at the project site handling the day-to-day environmental activities.
- 1 officer in charge of Environmental monitoring program
- 2 hydrogeologist engineers in charge of ground water regime observation
- 1 cartographer-engineer who maintains the project environmental database
- 1 driver

2.6. Archaeology

The Mongolian Academy of Science, Institute of Archaeology undertook archaeological surveys of the Project area in November 2001 and subsequent excavations of significant sites July 2002. The Academy has provided written approvals under Mongolian heritage protection laws for the disturbance of identified sites within the Project area.

3. ENVIRONMENTAL IMPACT ASSESSMENT

3.1. Introduction

Guidelines for the environmental impact assessment (EIA) of the Oyu Tolgoi Project have been developed to meet the requirements of the Law of Mongolia of Environmental Impact Assessment and to meet the objectives of the World Bank Operational Policy 4.01. These guidelines are presented in a framework document that describes the requirements for each component of the EIA and refers to specific requirements of both Mongolian Law and the World Bank Operational Policies.

Preliminary Project documents are submitted to the Mongolian Ministry for Nature and Environment (MNE) under the process of project screening. Mining projects must produce project documents for screening prior to obtaining a license for mineral use. Negotiations with the MNE by IMMI in 2002 agreed on a process for the submission of screening
documentation. Preliminary Project concepts were submitted to the MNE with baseline environmental data produced by Mongolian consultants licensed for undertaking EIA under Article 9 of the Law on EIA.

Screening is carried out by a committee of experts appointed by the MNE who make a decision on the level of assessment required for the proposal and provide formal screening guidelines where a Detailed Environmental Impact Assessment (DEIA) is required. For IMMI, the MNE screening committee established formal guidelines for DEIA in March 2003.

3.2. EIA Framework

The EIA framework for the Project has been developed to incorporate the requirements of Mongolian EIA law and the World Bank operational policies. The framework provides a process for completing component investigations and will assist IMMI in identifying development detail and plans that are required prior to assessment.

The EIA framework is based on issues that arise from similar mineral deposits in similar environments. The preliminary risk assessment process will identify all factors and potential impacts associated with the proposal.

For example, support infrastructure including power and water supply required specific detailed assessments depending on the development options chosen.

3.3. EIA reports

The following reports have been officially submitted to and approved by the MNE in the scope of Oyu Tolgoi Project:

- Supplementary EIA Report for Shaft #1 at the Hugo Dummett Deposit, OT. June 2005.

The following reports are underway development and will be submitted this year to the MNE:

- DEIA Report for Oyu Tolgoi mining operation
- DEIA Report for the coal-fired power plant to be constructed at OT.

Recommendations and suggestions presented in the approved reports, and the environmental protection plan and environmental monitoring plan will be abided by for further activities.
4. OYU TOLGOI PROJECT OPERATIONS

Within the framework of detailed exploration, IMMI plans to continue and/or commence the following activities in 2006:

- Geological mapping
- Geochemical sampling
- Geodesy measurements
- Sampling
- Geophysical survey
- Drilling:
  - This year, approximately 10 drilling machines will be involved in the exploration. 68 holes each of 1000 m of average depth totaling 55,050 m will be drilled.
- Trenching:
  - Total of 10 000 m³ trenches are estimated to be excavated this year, subject to requirements.
- Water supply studies
- Commissioning of a new mine camp.
- Geophysical and geological surveys and a few drilling shall be conducted to study geological structural features and mineralization distribution in Javkhlan Uul, Manakht, Khokh Khad and Ulaan Uul license areas.
- Sinking of a 6.7m diameter and 1300m deep exploration shaft at Hugo North of Oyu Tolgoi commenced in July, 2005. This will continue.
- Mining plan of a quarry for extracting stone for the concrete lining of the Shaft and construction foundation has been approved.
- Approximately 30 km of road between facilities will be improved within the project area, subject to requirements.

5. EXPLORATION METHODS

Exploration has been performed on the basis of previously employed methods for other similar mineral deposits. Exploration grid spacing and inclination were chosen subject to the scope and magnitude of the property, ore characteristics, structural features and the geological objectives. Drilling programs have been successful, with 50m-100 m spaced holes and 50m-200m spaced lines.

Sequence of exploration works, sampling and lab monitoring are being performed under the NI43-101 standard of Canada.

5.1. Sampling, processing of samples and QC

Samples were prepared from diamond drill cores at an on-site samples preparation facility and sent to a lab facility operated by SGS Analabs in Ulaanbaatar for analysis. Samples were taken at 2 m intervals down the drill holes and the cores are split (approx. 1 kg). The entire
sample was crushed to 90% minus 2 mm; then the crushed minus 2 mm sample was pulverized to 90% minus 70 µm (200 mesh). A 150 g subsample was split off the pulverized 70 µm sample and sent for analysis. All samples were assayed for gold, copper, and molybdenum, plus arsenic and silver for some of them. The samples were initially assembled into groups of 15 or 16, and then 4 or 5 quality control samples were interspersed to make up a batch of 20 samples. The quality control samples comprised one duplicate split core sample, one uncrushed field blank, a reject or pulp preparation duplicate, and one or two standard reference material (SRM) samples.

5.2. QC

There weren’t many reference materials, manuals and procedures for quality assessment of exploration works done by international mining companies until 1997, when Canada adopted several documents with regard to the quality control of exploration works.

A total of 44 different SRM samples are used to monitor the assaying at OT. The SRM samples were developed from poor, moderate and high grade portions of the six different main ore types made up of varying combinations of chalcopyrite, bornite, primary and supergene chalcocite, enargite, covellite, and Molybdenite. The SRMs were prepared in accordance with the Round Robin program and international testing laboratories confirm the grades. The resulting assay data were analyzed to determine a representative mean value and standard deviation necessary for setting acceptance/rejection tolerance limits.

The batch acceptance/rejection criteria applied were: automatic batch failure if the SRM result was greater than the round-robin limit of three standard deviations; automatic batch failure if two consecutive SRM results were greater than two standard deviations on the same side of the mean. If a batch failed, it was re-assayed.

The control program automatically decides and chooses the duplicate of which sample is added to the batch for laboratory assaying. This is important for assaying error detection and monitoring the accuracy of analysis.

Samples from areas distant from mineralization were also subjected to a round-robin program to ensure the assaying and analyzing equipment were barren of any of the grade elements and were not contaminating the samples.

5.3. Monitoring and other analysis

Besides the normal analysis, QC program involves other specific analysis including external monitoring analysis, gold particle size analysis, particle size distribution analysis, trace elements analysis and soil geochemical sampling.

External monitoring analysis is routinely performed and 5% of the samples. The analysis is conducted by SGS Welshpool and Genalysis labs of Australia.
5.4. Handling, storage and protection of samples

Drill cores are stored in boxes due to the sequence in the hole, treated with care when handled and shipped, and subjected to geological, geotechnical and geophysical documentation, splitting and sampling stages. After these processes, the remaining core samples in boxes are stored in a core farm. Also, the pulp duplicate samples are dispatched for analysis after the preparation stage, reject duplicates are organized and stored in a safe place. This process occurs in the following sequence.

After geological, geotechnical and geophysical logging, the core is photographed for complete documentation and is marked with a continuous linear cutting line before being split.

Data of the stored samples were accordingly entered into the project database, and movement of the samples was tracked.

5.5. Topographic survey

For topographic and geodesy field surveys, three Trimble 4700 Dual frequency GPS receiver, one Trimble Trimark III radio modem were used in an RTK (Real Time Kinematic) mode.

5.6. Geophysical survey

The following geophysical survey methods are used for the project’s exploration works:

- Ground magnetic survey
- Induced polarization by ELREC-6, a multi-channel measurement system of BRGM Instruments of Canada; and VIP15000 model transmitter with an output of 15 kW and 20 amps by IRIS Instruments of France
- Gravity measurement by Lacoste-Romberg equipment that has the precision level of 0.02 mgal.

5.7. Drilling

The company is using the following drilling equipment and methods:

- RC drilling
- Navidrill® system for deep orebody, which drills multiple daughter holes from within the parent drill hole. In this technique, a bend is placed in the parent hole at the location where the planned daughter holes are to branch off.
- For diamond drilling, drilling rigs such as RD 1500, UDR 650, Canadian JKS 300, CS1000, and Longyear 44, and the wireline method (core retrieval method without withdrawal of drilling pipes. Core sizes are PQ (103.2mm), HQ (77.8), NQ (60.3mm) and BQ (46mm).
5.8. Other surveys

The following are additional surveys focused on the minerals characteristics:

- Stable isotope analysis is conducted in cooperation with USGS and Colorado School of Mines.
- Minerals alteration analysis is performed using Analytical Spectral Device (ASD) in the field environment. ASD is an electro magnetic instrument that determines clay type minerals on the basis of the spectral properties of the minerals.
- Stable isotope analysis for the purpose of studying the fluid characteristics or the genetic environment of minerals.
- Sulphur isotope analysis conducted by Micromass Optima spectrometry.

5.9. Excavation

Trenching and other excavations shall be executed by earthmoving equipment of manufacturers such as Caterpillar and Hyundai.

6. WATER SUPPLY STUDIES

6.1. Brief description of hydrogeological condition of the property

IMMI is implementing a comprehensive hydrogeological study in the scope of the exploration program that involves project water supply, groundwater impact on the open and underground mining operations. The hydrogeological study has been performed for the following areas:

1. Discover and determine sufficient underground water resource for the Oyu Tolgoi process plant
2. OT site water discharge condition
3. Determine water resource for the supply of Oyu Tolgoi camp
4. Groundwater regime observation through the wide network of certain wells and aquifers of undisturbed regime.

The project’s estimated water demands are 430-518 l/s for average and 729 l/s for peak at the full production rate.

Since 2002 IMMI has been conducting hydrological exploration works and surveys in order to determine water resource for the project’s water needs and for the other purposes above. In 2003 and 2004, IMMI conducted in its water exploration program geophysical survey, drilling, testing and infiltration and other additional works within 30km - 120 km distance at Gunii Hooloi, Galblyn Gobi and Nariin Zag areas that are large sedimentary basins. As result, water resources for the industrial water demand of the project were discovered in these areas, and the resources were estimated by mathematic modeling and analytic
methods. The underground water exploration program included parallel studies on OT site water discharge condition and exploration camp water supply, and the findings have been processed at the feasibility level (Aquterra. Oyu Tolgoi. Final report. Vol 1-7).

6.2. Industrial water supply sources

6.2.1. Gunii Hooloi aquifer

Gunii Hooloi aquifer is 30 km northeast of Oyu Tolgoi. The aquifer is situated at the northern flank of the Khanbogd granite massif, stretching west to east. The aquifer is approximately 45 km in length and 11 km - 18 km in width. The valley hosts Upper Cretaceous Bayanshireh formation and sediments of sandstone - breccia - gravelstone of lacustrine origin. The water bearing rocks comprise of grayish and gray sandstone, gravelstone, and loose breccia, separated by thin layers of clay. The aquifer is integral in terms of hydraulics, and the thickness is relatively large. Thickness and the infiltration rate become more significant to the east along the valley.

The eastern flank of the area and the Baishin Tsav valley are connected by a small brachy-bend structure. Geophysical survey and drilling results suggest that this valley has hydrogeological conditions similar to Gunii Hooloi. In order to test the position, boundary characteristics of the water bearing strata in the Gunii Hooloi aquifer and determine the hydration ration of the sedimentary strata, 22 prospecting holes and 14 exploration holes were drilled. Also, for the purposes of infiltration properties and the estimation of potential water bearing strata, testworks that lasted for 3-14 days were conducted. All these efforts allowed the resource estimation is prepared (Table 5).
Data of Gunii Hooloi water exploration boreholes

<table>
<thead>
<tr>
<th>Hole number</th>
<th>Rate l/sec</th>
<th>Steps, m</th>
<th>Q1 l/s</th>
<th>Q2 l/s</th>
<th>Q3 l/s</th>
<th>Q4 l/s</th>
<th>S, m</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHW2x3</td>
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<td>60.5</td>
<td>10.0</td>
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<td>12.4</td>
<td>14.6</td>
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<tr>
<td>GHW4x6</td>
<td>14.71</td>
<td>14.7</td>
<td>6.79</td>
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<td>10.3</td>
<td>12.9</td>
<td>8.26</td>
</tr>
<tr>
<td>GHW5x2</td>
<td>12.27</td>
<td>6.23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GHW6x1</td>
<td>14.33</td>
<td>10.47</td>
<td>7.05</td>
<td>3.79</td>
<td>10.3</td>
<td>12.9</td>
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</tr>
<tr>
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<td>-</td>
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<td>GHW14x1</td>
<td>15.91</td>
<td>5.14</td>
<td>9.55</td>
<td>3.21</td>
<td>12.4</td>
<td>14.9</td>
<td>16.9</td>
</tr>
<tr>
<td>GHW14x2</td>
<td>12.43</td>
<td>5.73</td>
<td>0.49</td>
<td>1.81</td>
<td>6.24</td>
<td>8.73</td>
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<td>4.28</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>GHW15x2</td>
<td>16.14</td>
<td>4.43</td>
<td>10.1</td>
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<td>12.4</td>
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<td>11.72</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

Exploration holes drilled in the Gunii Hooloi area returned rates in the range of 11-18 l/sec, and the average transmissivity factor determined by plot analysis method is 490.0 m²/day. Thickness of the Gunii Hooloi aquifer, as assumed in the resource estimation, is 120 m and the area of distribution is 508.39 square km. The recoverable water resource was calculated using the balance and hydrodynamics methods and it was estimated that the aquifer could provide 69,984 m³/day or 810 l/sec water for 25 years, if the production scenario is C1.

The boundary of water saturated area is delineated in a limited circular shape in the resource estimation of the aquifer. In case water is sourced through bores 1.4-3.0 km from each other in parallel lines spaced 4.5 km, the eastern portion of the aquifer shall be subjected to the biggest drawdown. The estimated drawdown to be caused by the bores is less than the permissible drawdown or the key factor of the actual potential of the aquifer (N. Mukhbaatar et al. Oyu Tolgoi Hydrogeological exploration report, 2004). Also, due to the estimation of the consultants, 64%-73% of the groundwater resource of this aquifer shall be used for process water needs.

The groundwater of Gunii Hooloi aquifer is either weakly saline or saline, contains sulphate-chloride and chloride-sulphate, and the mineralization is 0.9-2.8 g/l. The water is not suitable for drinking purposes according to its chemical properties, can be used for industrial needs however.
6.2.2. Galbyn Gobi aquifer

Galbyn Gobi aquifer occupies a strip-shaped area of 11-18 km in width stretching over 140 km. Upper Cretaceous Bayan Shi’reh and Bayanzag formations of sandstone-aleurolite association that were formed in a limited area basin environment are found in the aquifer with combined thickness of approximately 500 m. Layers of loose sandstone, aleurolite, and lenses of gravelstone and conglomerate that host water are individually separated by clay layers, forming a stratified structure of aquifer. Lithology changes abruptly in a short distance along the vertical and horizontal profile. Pressured and non-pressured water occur in the lower and upper section of the profile respectively. In order to determine hydrogeological characteristics of the aquifer and the actual potential of the groundwater resource, total of 55 exploration bores have been drilled, infiltration test and other surveys have been conducted. (Table 6.)

**Data of Galbyn Gobi water exploration boreholes**

<table>
<thead>
<tr>
<th>#</th>
<th>Hole number</th>
<th>Rate, l/sec</th>
<th>Steps, m</th>
<th>Rate, l/sec</th>
<th>Steps, m</th>
<th>Rate, l/sec</th>
<th>Steps, m</th>
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<td>1</td>
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<td>64.21</td>
<td>1.37</td>
<td>25.5</td>
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</tr>
<tr>
<td>5</td>
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<td>13.61</td>
<td>42.16</td>
<td>8.14</td>
<td>18.8</td>
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<td>26.0</td>
<td>12.5</td>
<td>33.0</td>
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<tr>
<td>6</td>
<td>GGW19</td>
<td>18.94</td>
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<td>7</td>
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</tr>
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<td>9.7</td>
<td>49.1</td>
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<td>65.0</td>
</tr>
<tr>
<td>9</td>
<td>GGW32</td>
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<tr>
<td>12</td>
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<tr>
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</tr>
<tr>
<td>14</td>
<td>GGW43</td>
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<td>26.86</td>
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<td>15.8</td>
<td>12.8</td>
<td>19.3</td>
<td>14.3</td>
<td>22.6</td>
</tr>
</tbody>
</table>

In comparison to the Gunii Hooloi, this aquifer is dominated by elastic type of resource. The sedimentary aquifer hosted in Bayan Shi’reh Formation of the Galbyn Gobi area is overlain by Bayanzag Formation and is a relatively deep aquifer. Pressured condition is clearly observed in the southwest and northeast portions of the aquifer (water level is above the ground in some bores). The pressured water covers an area of 1,929.8 km², and the average
thickness of the aquifer is 38m-50m. Based on the extent of studies completed, the inferred resource was estimated at 31,967 m$^3$/day for 25 years, using balance method.

According to Aquaterra calculation, part of this inferred resource can be used at a rate of 130 l/s, with a water table drawdown not more than 10 m.

The non-pressured water of the aquifer is fresh, mineralization is 0.9 g/l, and sulphate-chloride or chloride-sulphate in terms of chemical composition; of the main cations Natrium ion dominates. The chemistry of the pressured water is similar to this, however, lightly saline and the mineralization is 8.1 g/l.

The inferred resource delineated in this aquifer is supposed it can be used as an additional source for the Oyu Tolgoi process water needs. More hydrogeological studies need to be performed in order to upgrade the inferred resource.

**6.2.3. Nariin Zag aquifer**

Testing efforts have been undertaken at this area. Nariin Zag is characterized by its modest thickness of Cretaceous aquifer and distribution area, and the bedrock is reached in a near depth. Due to these main factors, the groundwater potential is assessed at a rate of 50 l/s. There’s no option has been developed to use this aquifer, because of its potential and distance.

**6.3. Mine infiltration**

Due to the findings of hydrogeological observations and tests conducted in numerous holes drilled for both geological and hydrogeological purposes at Oyu Tolgoi and the adjacent properties, bedrock infiltration is most important for the general hydration of the deposit. Permeability of the active fracture zone of the bedrock is limited. The fractures are filled with secondary minerals beginning from 80m-120m of the depth and the permeability is reduced accordingly. This has been proved by the pumping tests done with packer for the 300m-1000m deep bores.

The water table is found at different depths in this aquifer. For example, at the Southwest and Central deposits, water level is at 5m-15m, while it stabilizes at 20m-30m in the northern part of the deposit. Water mineralization is diverse, due to the characteristics of the geological formation. Dry residue is 0.5 g/l nearby areas of the exploration camp; both fresh and saline water occurs in the Central and Southwest deposit area; and mineralization level increases up 9-11 g/l in the Hugo South and North deposits. Groundwater recharge and circulation intensity are low in Hugo Dummett deposit, as clayey content dominates the area and the bedrock is substantially a solid mass.

Oyu Tolgoi is a multiple orebody deposit and it shall be developed through both open pit and underground mining. Infiltration rate of the open pit and underground mines were determined in a 3-D model. The modeling assumed boundary and primary conditions as follows. Mine development plan considered a two open pits and two underground mines case.
and a three open pits and one underground mine case, both with and without subsidence effect.

Maximum infiltration is forecasted to reach 100 l/s - 110 l/s in 4-8 years after the commencement of production and then slow down and stabilize at 95 l/s - 70 l/s, due to the estimation that used Q=0 and H=const for the boundary parameters in infiltration flowsheet. There will be a 4 km radius cone of depression as result of consumption.

6.4. Survey on regime

As the area lies in a district where there’s a lack of natural sources for groundwater rechargeability, a complete study of observation of underground water regime is required to be conducted in the course of the utilization. This study has commenced and is in progress through many observation points established over a large area.

Observation has been performed at 33 bores drilled for geological purposes and also in order to determine hydration condition of Oyu Tolgoi and nearby deposits. In the South and Central Oyu fields, ‘partially failed’ underground water regime has been observed.

The delineated aquifers are characterized by numerous lenses with different hydrodynamic conditions of infiltration, in bedded structure. Observation bores drilled with various depths next to exploration bores are incorporated with exploration bores and now there are approximately 130 bores have been equipped for the observation network.

Environmental monitoring network was established in order to give assessment for site water balance (recharge and discharge regime), and determine the impact of regional drawdown, which may be caused by dehydration of the Oyu Tolgoi deposit and development of a major reservoir facility, on the ground water regime of high circulation rate.

Since 2003, the said network has been employed for groundwater regime observation and monitoring. Water level measurement is done on a monthly basis, while sampling is done seasonal basis. Monitoring and observation results have been incorporated into the annual reports on IMMI Environmental Protection Plan Performance.
7. SHAFT NO. 1 AT HUGO NORTH DEPOSIT OF OYU TOLGOI

7.1. Overview

In the framework of the Oyu Tolgoi project development plan, a vertical shaft sinking project commenced in May 2005 in order to study in detail the rock massif stability, and the geometry of orebody.

The shaft, located at the collar position of diamond drill hole OTD 572, is the initial stage of horizontal developments at the Hugo North deposit that needs completion of feasibility study.

The shaft construction is in progress and will be completed by Redpath, a Canadian company specialized in shaft sinking, in accordance with agreement.

2006 Development Plan for Shaft No. 1 has been prepared and approved by the relevant authorities (see attachments).

Project facilities can be divided into 3 main parts in accordance with their location and time sequences to build.

1. Facilities above the ground
2. Surficial or collar facilities
3. Sinking

7.2. Shaft sinking progress

Principal and ancillary facilities above the ground have been completed in general. The collar of the shaft has been constructed down to a depth of 35 m from the ground level, and assembly of sinking stage is in progress at the moment.

The headframe is a 44 m high structure with wind resisting supports, and чиглүүлэгч дамар at 41 m and bucket emptying unit at 11 m.

Collar is the 35 m concrete lined section from the ground level. Pipes for ventilation and other purposes shall enter through the collar.

Winches of the bucket and cage for personnel, materials and rock, and the operator’s control room are placed in the northern part of the surface facilities. Drum diameter is 3.7 m and the width is 6 m.

Sinking stage is 6.23 m in diameter, and has three layers spaced 5 m from each other. Each layer has two stairs for personnel access. The stage is equipped with lighting, electricity board and work tools.
7.3. Sinking method

Sinking plan for this year approximately 870 m, and it has commenced in February. Drill and blast method shall be used and concrete lining for the excavation.

7.4. Supplementary environmental impact assessment report

The following impacts may develop due to construction of the Shaft No. 1, in consideration of the scale of the project, proposed works and time frame:

- Construction work will result in buildings and facilities which occupy 185x187 m² or 3.4 hectare
- A 6.7 x 1300 shaft or borehole will be created in the ground
- Approximately 60 000 m³ stockpile of rocks will be created resulting from preparation of building foundation and shaft sinking
- Road network will be created near the shaft.
- Household wastes such as used water from workers’ consumption
- Fuel and lubricants waste from diesel generator and machinery will be accumulated
- Groundwater will be pumped onto the surface.

The following conclusions are drawn from the detailed EIA of the Shaft No 1. Shaft No 1 is part of detailed geological exploration at Oyu Tolgoi deposit:

According to the DEIA of the shaft being constructed at the Hugo Dummett deposit or the far north portion of Oyu Tolgoi, construction of the shaft will not affect much area on the surface, as it aims to reach a specific underground depth. Impact of this project on environment is estimated to be moderate, and therefore, the project is feasible.

The main impacts of the project are related to the following: soil, waste rock, low grade stockpile, groundwater pumping, service facilities to construct around the shaft.

From the workstation perspective, shaft project is a high risk environment and labor safety must be ensured at a high level standard. Lining, ventilation, lighting, protective tools and equipment and emergency measures must be thoroughly planned and the rules must be observed.

Risk of force majeure activities or natural calamities including earthquake, pressured underground water flow, toxic gas emission, fracture or fault and landfall must be assessed prior to commencement of the project and included in the shaft sinking plan. However, potential risks exist during the sinking project, which may be caused in relation with natural forces, human activities or technological failure. Therefore, risk management measures and procedures and rules for emergency situation must be developed prior to project commencement. Also, the employees must attend trainings on a regular basis.

The shaft sinking project meets the requirements of Environmental protection law, Minerals Law, Subsoil Law and other laws and regulations of Mongolia.
Safety related measures and the Environmental protection plan incorporated to this DEIA must be closely observed and obeyed during the sinking progress and utilization thereafter.

The shaft sinking process will be performed by modern and advanced technology. As a specialized company, Redpath of Canada is responsible for the sinking process, ensuring environmental protection and safety.

### 7.5. Environmental protection measures

The supplementary EIA of the Shaft No 1 was prepared by Eco Trade in 2005. In the scope of the assessment, Eco Trade developed the environmental protection measures. Table 7 provides the potential impacts and required measures.

#### Environmental protection plan

**Table 7**

<table>
<thead>
<tr>
<th>Potential impacts</th>
<th>Required measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increase of dust generation during shaft sinking</strong></td>
<td>▪ Sprinkle the dumps as the Gobi weather condition requires, in order to reduce dust, and use indirect watering method if necessary</td>
</tr>
</tbody>
</table>
| **Site for stockpile is covered by waste rock and remain unable for restoration** | ▪ Select a site which is not suitable for household and production needs  
  ▪ Consider the geographic and hydrogeological characteristics and the location of the deposit  
  ▪ Select the site near a mine  
  ▪ Prepare the base of the dump site with clayey soil, if underground water level is close and high permeability sediment or fractured rock is distributed in the area.  
  ▪ Geographic location, geometry of the dumps and slopes must be determined in detail, and be used all the time in order to provide stability of dumps.  
  ▪ Construct flood prevention dam around the dump site and a sump to collect precipitation water from the dumps.  
  ▪ Sprinkle the dumps as evaporation rate is high in the Gobi region in order to reduce dust, and use indirect watering method if necessary.  
  ▪ After dumping is completed, cover with overburden. This should be planned in cooperation with a professional organization, and be performed under supervision of an authorized institution.  
  ▪ To reduce this impact, permanent pumping is required and the pumped water shall be collected in sump. The sump volume will be not less than 60,000 m³. After 80% of the volume is occupied, oil contamination shall be cleaned up (if oil contamination is detected). |
| **Exposure of sulphide in the low grade ore on the surface, and acid forming** | ▪ To reduce this impact, permanent pumping is required and the pumped water shall be collected in sump. The sump volume will be not less than 60,000 m³. After 80% of the volume is occupied, oil contamination shall be cleaned up (if oil contamination is detected). |
| **Infiltration of underground pressured water during sinking Shaft No 1** | ▪ To reduce this impact, permanent pumping is required and the pumped water shall be collected in sump. The sump volume will be not less than 60,000 m³. After 80% of the volume is occupied, oil contamination shall be cleaned up (if oil contamination is detected). |
### Potential impacts

<table>
<thead>
<tr>
<th>Potential impacts</th>
<th>Required measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 30 m³ gravelstone will be extracted per day from the quarry, and certain size of area will be disturbed.</td>
<td>pollution is present on the surface) and discharged to a sump next to it. Recycled water can be used for dust mitigation of waste rock dumps and the shaft area.</td>
</tr>
<tr>
<td>Wastes and litters generated during the sinking process</td>
<td>▪ As the quarry stops mining, steep slopes will be reshaped for safety. The site needs restoration according to Mongolian standards.</td>
</tr>
<tr>
<td>Unauthorized persons may enter the shaft construction area and may be subjected to various risks</td>
<td>▪ Waste management plan need to be developed and maintained for the Shaft No 1.</td>
</tr>
<tr>
<td>▪ To mitigate this risk, erect a 2 m x 7.3 km perimeter fence around the site. Shaft is accessed through certain gates, where security personnel check incoming and outgoing people and vehicles.</td>
<td></td>
</tr>
</tbody>
</table>

### 7.6. Waste rock dump

Dumping the waste rocks extracted from the sinking process is one of the main components of the project.

The waste rock and clayey material generated by shaft sinking shall be dumped in a manner that they can be used for road and other construction works.

The project site is in arid environment and exists under strong wind events. Therefore, waste rock dumps should be covered with rocks and gravel in order protect from wind blows that may cause dust emission.

This year, total of 36,000 m³ waste rock will be generated. As provided in the EIA recommendations and the mine plan, waste rock is dumped in a 0.5 ha area, north of the shaft.

### 7.7. Low grade ore stockpile

During the shaft sinking project, some low grade ore will be extracted and it may require a separate stockpile. Sulphide containing minerals such as pyrite is dominant in the low grade ore and it forms acid while exposed to water and oxygen on the ground. This may negatively affect the environment. The following conditions shall be considered while creating low grade ore stockpile:

- Physical and mechanical characteristics of the rocks of the area
- Geology and hydrogeology characteristics
The following measures shall be taken:

- Prepare the base of the dump site with clayey soil, if underground water level is close and high permeability sediment or fractured rock is distributed in the area.
- Geographic location, geometry of the dumps and slopes must be determined in detail, and be used all the time in order to provide stability of stockpiles.
- Monitor temperature variation in the stockpile.
- Construct flood prevention dam around the stockpile site and a sump to collect precipitation water from the stockpiles.
- Sprinkle the dumps as evaporation rate is high in the Gobi region in order to reduce dust, and use indirect watering method if necessary.
- After stockpiling is completed, cover with overburden. This should be planned in coorperation with a professional organization, and be performed under supervision of an authorized institution.

7.8. Groundwater conditions

According to the report on groundwater survey of Oyu Tolgoi deposit conducted by Aquaterra of Australia, the static water level in borehole OTD 572 is 48 m below the ground level. Water discharge level is 1-5 l/sec.

As the groundwater study is limited, measures will be taken to mitigate hazards of collapse within high pressure and groundwater flow zones.

Ø200 mm steel pipe will be used for dewatering. 2006 plan includes pumping the water accumulated in the face area onto the surface and collect it in a sump established 216 m from the shaft. Volume of the sump is 60 000 m³, and after approximately 80% is filled and certain time for sedimentation, the water will be pumped to the box cut that lies 870 m in the south east. The box cut is 240 000 m³ in volume.

Water collected in the sump can be used for mitigating dusts near the mine and waste rock dumps.

7.9. Ensuring safety

To ensure safety during the construction and operation of the facility, a 2 m tall and 7.3 km long perimeter fence has been erected around the site. The construction is accessed through gates, where security staff check incoming and outgoing people and vehicles.

8. QUARRY, CRUSHER AND BATCH PLANT
IMMI commissioned a quarry, crusher and batch plant in April 2005 to support its shaft sinking project and other construction activities.

IMMI developed and got approval from the relevant authorities for the 2006 mining plan of the stone borrow pit in the Oyu Tolgoi license area (see attachment).

The batch plant uses crushed rock from the crushing plant, which crushes and screens rock fed from the borrow.

8.1. Location

The quarry is located in the southeast of the license area. The coordinates are:

- 106° 53’ 53.62”; 42° 59’ 7.71"
- 106° 53’ 57.89”; 42° 59’ 2.77”

Absolute mean sea level of the quarry is 1,150 m.

8.2. Quarry

The quarry shall be 150m x 100m, covering an area of 1500 m², and 5 m deep. The work procedure at the quarry is as follows:

- Drilling and blasting rock mass to crush.
- Haulage by truck, shovel and bulldozer operation.

8.3. Crushing Plant

The crushing and screening plant is model PYH-3Z, manufactured by DUILONG Co. The capacity is 100 ton per hour. The plant crushes rock into various sizes and classifies the fractions due to their size. It produces gravel and macadam in the following sizes: 0-5 mm, 5-10 mm, 10-22 mm.

8.4. Batch Plant

IMMI uses a SKAKO brand Batch Plant, model MOB-90 Evolution. The plant produces 90 m³ concrete per hour.

Ready made macadam, sand, cement and water are used for concrete production. Dry sand for concrete mixture is fed to vibratory screen, and then to a belt conveyor.

8.5. Warehouse farm

A warehouse with a volume of 200 m³ will be constructed for parts and supplies. Also, a 50m x 20m paved open area for storage of large machineries and their parts.
8.6. Quarrying: Method and Capacity

We’re planning to extract 40,000 m³ macadam this year. The lower boundary of the borrow pit is limited at 1,145 m.

Horizontal development will be performed avoiding deep penetration, as low quality rock may be recovered. Such rock will be stockpiled near the crusher and will be used for restoration and refilling of the pit.

8.7. Drilling and Blasting

Rock is mined by drill and blast method. Estimation for blasting suggests the explosives and blasting equipment to be used as follows:

Explosives and other supplies for blasting shall be provided by Orica of Australia. Orica’s Mongolia branch will be responsible for transport, storage of and required approvals for the blasting materials.

Basalt or granite material will be drilled and blast.

Blastholes will be drilled by Ingersoll Rand HC160 equipment.

Each blasting requires approximately 360 kg emulsion explosives (Powergel Buster).

Exel 25 and 65 ms delayed detonators will be used. Application of delayed detonators in the blastholes and for the patterns will save charges used for each blasting, and reduce rock vibration impact.

A blast block will be 5 m wide and 24 m long, with total of 16 holes drilled in two parallel lines. The pattern is 2.5 m spaced lines and 3 m spaced holes.

Length of charge and plug in the holes will be 3.72 m and 1.78 m respectively. The plug will be powdered rock generated by drilling.

### Annual consumption of explosives and blasting supplies

<table>
<thead>
<tr>
<th>No</th>
<th>Explosives</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Powergel Buster 85 mm Powergel Power</td>
<td>150,000</td>
</tr>
<tr>
<td></td>
<td><strong>Supplies:</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Exel 12 m Nonel detonator, 400 ms</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>Exel 6 m Nonel detonator, 400 ms</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>Exel 5 m connectadet, 25 ms</td>
<td>300</td>
</tr>
<tr>
<td>4</td>
<td>Exel 500 m cord</td>
<td>30</td>
</tr>
</tbody>
</table>
Explosive materials shall be stored in an explosives magazine at Oyu Tolgoi. Permission for explosives has been obtained. In order to maintain continuous supply for the mining operation, the magazine inventory shall be up to 20 tons.

Safety and environmental issues in relation with blasting will be maintained and performed under the applicable Mongolian laws and regulations, safety rules and procedures.

8.8. Environmental protection measures

The following are the measures to be conducted at this quarry for environmental protection:

- Conduct extraction only within the area approved by the local government and within the boundaries provided in the plan, in accordance with the applicable land law
- To regulate the routes and roads of the open pit fleet and vehicles according to established pathways.
- To strictly prohibit spilling of fuel/lubricants at open area
- To conduct technical repair and maintenance at specially prepared areas preventing from pollution of environment
- To dispose waste and garbage in accordance with the waste management procedure of the company.
- Upon completion of the mining operations the area shall be sloped as same as surrounding relief
- To rehabilitate by covering with Gobian brown-grey sand and vegetation of annual plants, where necessary.

On the other hand, with respect to other activities implemented within the framework of Oyu Tolgoi project, the rehabilitation works might not be necessary.

9. SAND BORROWING

In the framework of its project activities IMMI shall borrow sand only for its business and construction works in 2006. The sand shall not be used for activities with intended purpose to earn profit.

The permission for the sites for sand borrowing was issued by the Resolution No 13 of Khanbogd soum Governor, dated 16 March 2006 in compliance with the “Procedure for extraction of common minerals” (Please see the attachment)

9.1. Sand borrow areas

- Inside the Oyu Tolgoi licensed area
- From one of the dry bed of Umdai river tributaries
9.2. Estimation of required sand

Approximately 52,000 м³ of sand shall be used in 2006.

9.3. Environmental protection measures

The sand shall be borrowed from a tributary of Umdai river in compliance with technology as follows:

- Sand borrowing shall be ceased when the size of the affected area reaches 1.5 hectares and technical rehabilitation should be conducted in compliance with the Provision 2.6 of “Procedure for extraction of common minerals”
- A site for sand borrowing at dry river bed shall not exceed 1.5 hectares each
- Extraction depth at dry river bed for sand borrowing shall be 1.5-2.0m
- Water should not be exposed during sand borrowing at dry river beds
- In case water is exposed at dry river bed it shall be buried as soon as possible and the site for sand borrowing should be changed
- To use regular route for heavy trucks for sand haulage
- Prohibit disposal of any kind of waste in the area
- To ensure environmental safety

After sand borrowing, the site should be rehabilitated as follows:

- After sand borrowing, damaged soil shall be buried with soil and leveled
- The area shall be sloped as same as surrounding relief
- To collect waste and clean-up the area
- Soil cover and vegetation shall not be required for the rehabilitated area.

During the borrowing of sand weather condition should be taken into account. Particularly, in summer season after heavy rain with strong storm dry rubbles and riverbeds are affected by flood which flow continues approximately 30-90 minutes.

10. RAW MATERIALS AND SUPPLEMENTS

10.1. Water supply

IMMI must supply exploration project water needs with water using boreholes while not affecting on the area’s water resource prior to mine activities are commenced.

Shallow wells, springs and open water used by local herders are not used for household and industry water needs of exploration camps and will not be used further.
Boreholes OTRC 218, CC01 and CC02 shall be used for supply of household and industrial water demand in 2006 (Table 9.)

**Oyu Tolgoi project household and industrial water supply boreholes**

<table>
<thead>
<tr>
<th>№</th>
<th>Borehole</th>
<th>Coordinate</th>
<th>Depth (meter)</th>
<th>m³/day</th>
<th>Date of drilling</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OTRC 218</td>
<td>649905 4763401</td>
<td>60</td>
<td>138</td>
<td>2002.06.17</td>
<td>Camp and drilling</td>
</tr>
<tr>
<td>2</td>
<td>CC01</td>
<td>648003 4767444</td>
<td>51</td>
<td>65</td>
<td>2004.04.25</td>
<td>Camp</td>
</tr>
<tr>
<td>3</td>
<td>CC02</td>
<td>647786 4767639</td>
<td>51</td>
<td>65</td>
<td>2004.05.13</td>
<td>Camp</td>
</tr>
<tr>
<td>4</td>
<td>OTRC 938</td>
<td>650087 4764473</td>
<td>60</td>
<td>148</td>
<td>2004.07.20</td>
<td>Industrial</td>
</tr>
<tr>
<td>5</td>
<td>SW Oyu bulk sample shaft hole</td>
<td>650718 4763097</td>
<td>74</td>
<td>110</td>
<td>2004.11</td>
<td>Industrial</td>
</tr>
</tbody>
</table>

Boreholes OTRC-218, CC01 and CC02 have been used for supply of household water demand.

Bottled pure water is used to meet drinking water consumption at exploration camps as follows:

1. Bottle of pure water (0.35 l) x 1 per capita 6 bottles/day x 850 people (total number of employees working at OT by 15 February 2006) x 365 days = 651.5 m³ of bottled pure water shall be used per year.

2. It was estimated that 56 736 m³ water shall be used for household consumption, 122 688 m³ of water for industrial consumption and total of 179 424 m³ of shall be used in 2006.

**Utilization of water resource**

<table>
<thead>
<tr>
<th>№</th>
<th>Boreholes used at OT m³/day</th>
<th>Purpose of water consumption /price m³/MNT</th>
<th>Volume of consumption m³/month</th>
<th>Period of consumption</th>
<th>Volume of to be consumed per year m³/year</th>
<th>Amount of fee /MNT/</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Borehole OTRC-218 shall work 6 hours 138 m³/day</td>
<td>828.0</td>
<td>12 months</td>
<td>9936</td>
<td>Household</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Borehole OTRC-218 shall work 18 hours</td>
<td>2484.0</td>
<td>12 months</td>
<td>29808</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Borehole CC 01 shall work 24 hours 52.8 m³/day</td>
<td>1950.0</td>
<td>12 months</td>
<td>23400</td>
<td>household</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Borehole CC 02 shall work 24 hours 43.2 m³/day</td>
<td>1950.0</td>
<td>12 months</td>
<td>23400</td>
<td>household</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Borehole OTRC-938 shall work 24 hours 86.4 m³/day</td>
<td>4440.0</td>
<td>12 months</td>
<td>53280</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Even though, we supply our drinking water demand with bottled pure water we have tested water in some wells in 2006 which shall be compared with water indicators specified in “Drinking water MNS-900-92” Standard of Mongolia and indicators specified in drinking water instruction of Australia.

11. EXPENSES, FEES AND CHARGES

11.1. Cost of environmental protection measures

10,000,000 MNT has been budgeted for implementation of environmental protection plan of Oyu Tolgoi project in 2006. Measurements for environmental protection plan and its required cost is summarized in the table on page 32 which includes:

1. Burying drilling sump and channel:

Costs estimated for other reclamation activities shall be used in case trenching does not take place.

\[
\begin{align*}
204 \text{ sump } \times 5 \text{ m}^3 \times 1500 \text{ MNT/m}^3 &= 1530000.0 \text{ MNT} \\
10000 \text{ m}^3 \text{ channels } \times 500 \text{ төгрөг/m}^3 &= 5000000.0 \text{ MNT}
\end{align*}
\]

2. 1,570,000.0 MNT for waste disposal and cleaning-up of surrounding area
3. 1,500,000.0 MNT for spraying water near the camp sites, parking areas and some sections of the road by reusing industrial waste water and water of mining seeping for reducing dust emission during the summer
4. 400,000.0 MNT for protection of water resource

50% or 500,000,000 MNT for environmental protection costs shall be transferred to the relevant account of the local authority in compliance with Article 30.11 of Minerals Law of Mongolia.

After completion of environmental protection and rehabilitation works and submitting to the local authority with notes that IMMI will get the deposit back in accordance with the applicable article of “Regulation on leaving deposit for environmental protection during geological and mining operations”.

11.2. Fees and charges for environmental pollution
In accordance with Environmental protection plan and relevant laws and rules of Mongolia, the company will pay fees with respect to water, gravel, sand and local road utilization to the local authority each quarter considering volume of resources utilized.

A contract made between the company and Khanbogd soum governor will be extended again this year and additional water resource is used for any exploration activities shall be estimated and respective fees shall be paid to the local budget. This provision remains the same. (Contract on water utilization. Provisions 12.1 and 12.2)

Pursuant to the “Common mineral procedure” price for utilization of common minerals has been indicated in accordance with the Governor Resolution of Khanbogd soum No 11 dated 19 February 2003 as 100 MNT for 1m³ of sand, 50 MNT for 1m³ of gravel and 100 MNT for 1 ton of igneous rock. The fee shall be paid to the local authority in accordance with the invoices.

In accordance with the preliminary estimation, total of 266 523 480 MNT shall be paid by the company as fees and charges for environmental pollution to the local budget in 2006.

11.3. Land fee

With purpose to ensure safety at Oyu Tolgoi project it is planned to surround total of 2508.7 hectares of land by fence in 2006. This issue has resolved jointly by the company and local authorities in accordance with Land Law of Mongolia. The Land Use Certificate No 000 4155 has been issued in compliance with the directive No 10, dated 27 February 2006 issued by the Governor of Khanbogd soum.

An agreement has been concluded with the soum Governor stating that 53.04 hectares of total land shall be used for service facilities and 2455.6 hectares for mine site; the payment for land utilization shall be paid in accordance with the agreement.

<table>
<thead>
<tr>
<th>№</th>
<th>Fees and charges</th>
<th>Amount (MNT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fee for water consumption</td>
<td>7 836 480</td>
</tr>
<tr>
<td>2</td>
<td>Fee for utilization of local road (170 km)</td>
<td>1 275 000</td>
</tr>
<tr>
<td>3</td>
<td>Sand 52 000 m³</td>
<td>5 200 000</td>
</tr>
<tr>
<td>4</td>
<td>Gravel: fee shall be paid in accordance with performance in case of use</td>
<td>4 000 000</td>
</tr>
<tr>
<td>5</td>
<td>Quarry 40 000 m³</td>
<td>2 652 000</td>
</tr>
<tr>
<td>6</td>
<td>53.04 hectare of land used for service purpose</td>
<td>245 560 000</td>
</tr>
<tr>
<td></td>
<td>2455.6 hectares of land used for mining operations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>266 523 480</td>
</tr>
</tbody>
</table>

Environmental fees and charges to be paid to the local budget

Table 11.
12. EXPLORATION CAMPS

12.1. Exploration camps

There are 5 camp sites including Khanbogd for local workers and Oyu Tolgoi exploration camp for staff of Ivanhoe Mines, for drilling companies including Major Pontil, Gobi Drilling and Land Drilling and also administration building, repair shops, sample preparation room, borehole sample preparation shop, airport and parking areas.

13. WASTE MANAGEMENT

13.1. Waste recycling

The company is proceeding with an activity to sort and classify domestic wastes of exploration camps. Within the framework of this activity the waste is sorted as follows and centralized to the disposal area:

1. Waste to be recycled
2. Wood
3. Metal
4. Other waste.

13.2. Garbage bag

All employees working at OT project are provided with garbage bags to sort and dispose their waste. Even at remote office garbage bags are widely used and waste is disposed at centralized disposal area by trucks.

13.3. Waste disposal area

Current waste disposal area is surrounded by the fence and works in accordance with fixed schedule.

During the exploration works conducted by the company, most appropriate method to dispose waste is land filling.

Volume of sewage is increasing abruptly due to the growth of employees at Oyu Tolgoi project compared to preceding years. Henceforth, sewage disposal point has been expanded in 2005 and sewage is disposed to the point consisting of 3 parts which has sewage level monitoring channel.

13.4. Water treatment plant
The water treatment plant with total capacity to treat 120 m$^3$ per day shall be commenced in 2006.

The water treatment plant shall create reliable condition to treat sewage with support of all applicable facilities.

Used water will be directed to pumping station, passing through the gravity cleaning system. Then it will be pumped to Water treatment plant and cleaned by Flexidiblok – mechanical- biological system. The water treatment plant shall consist of 2 Sequencing Batch Reactors. Applicable computer of the plant shall monitor treatment process which is protected by patents No 282852 and No 283591. The reactors shall have utmost flexible function with respect to level of incoming water. This system is appropriate for waste water treatment plants which has consolidated or partial string network system.

The treatment process shall be divided into several cycles. One cycle shall consist of processes such as refilling, activation, emancipation from azotes, sinking and compressing of pure water with duration of 11 hours. Amount of materials produced from one cycle shall depend on amount of materials used for.

The plant shall keep a record on each cycle. Operation of the plant may be adjusted in accordance with the instruction.

13.4. Used oil and lubricant disposal

Used oil and lubricant was kept in and disposed to tank with capacity of 25 tons located in the area of mechanical workshop of Major Pontil drilling company during 2002-2004. Starting from 2005 tank with capacity of 25 tons has been located nearby new petrol fuelling station for disposal. The exploration camp has been disposing 330 l of used oil and lubricant per week or 1,3 ton per month. The incinerator to burn and dispose used oil and lubricant in confined space shall be commenced in 2006.
13.5. Waste and by-products

a/ Solid waste

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic and paper packs, bottles, construction material residue</td>
<td>81-100 m³/ year</td>
<td>Food and construction material residue, containers, packs</td>
</tr>
<tr>
<td>Plastic container</td>
<td>344.9 m³/ year</td>
<td>A bottle of a bottled pure water</td>
</tr>
</tbody>
</table>

b/ Liquid waste

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial sewage</td>
<td>119 172.5 m³/ year</td>
<td>Drilling</td>
</tr>
<tr>
<td>Household sewage</td>
<td>8 212.5 m³/ year</td>
<td>Shower, laundry, bathroom</td>
</tr>
</tbody>
</table>

c/ Waste lubricant

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricant</td>
<td>6 m³ or 6000 l</td>
<td>Heavy duty machinery and drilling machine</td>
</tr>
</tbody>
</table>

d/ Intermediate product

No intermediate products

13.6. Waste clean-up and disposal method

a/ Solid waste

<table>
<thead>
<tr>
<th>Type</th>
<th>Clean-up</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic and paper packs, bottles</td>
<td>Everyday</td>
<td>Work positions have been provided with rubbish bags and wastes shall be disposed to central disposal point</td>
</tr>
<tr>
<td>Plastic bottles of pure water</td>
<td></td>
<td>Locals will collect approximately 80-90% or 310.41 tones thereof.</td>
</tr>
</tbody>
</table>

b/ Liquid

<table>
<thead>
<tr>
<th>Type</th>
<th>Clean-up</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial sewage:</td>
<td></td>
<td>1. 70% of which will be pumped and used as drilling liquid;</td>
</tr>
<tr>
<td>70% - 83 420.75 m³</td>
<td>2. 29% of which is remained in sump and reused for reducing dustiness near drilling field</td>
<td></td>
</tr>
<tr>
<td>29% - 34 560.02 m³</td>
<td>1% - 1 191.7 m³</td>
<td>1% of which disposal to sewage disposal at central disposal point</td>
</tr>
<tr>
<td>Household sewage</td>
<td>22.5 tones of sewage is disposed to sewage disposal hole everyday</td>
<td>Sewage pumped out from sewage hole and disposed to sewage disposal point</td>
</tr>
</tbody>
</table>

c/ Waste lubricant

<table>
<thead>
<tr>
<th>Type</th>
<th>Clean-up</th>
<th>Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste lubricant</td>
<td>Barrel with capacity of 200 l shall be positioned in mechanical or repair shop</td>
<td>1. In a butt with capacity of 25 tones which is located in fence of mechanic shop of Major Pontil drilling company,</td>
</tr>
<tr>
<td></td>
<td>500 l waste lubricant in a month</td>
<td>2. In a butt with capacity of 20 tones near the gas station</td>
</tr>
</tbody>
</table>

d/ Radioactive wastes

No wastes.
14. ENVIRONMENTAL PROTECTION MEASURES

14.1. Drilling and trenching

During the drilling, the plot and sufficient water supply shall be prepared and sumps or dam for collection and deposition of mud, chip rocks and other liquid as a result of drilling process. The sump is intended for keeping of liquid drilling mud to sustain permanent drilling process.

For the drilling fluid, liquids and solutions produced in Australia that are rated Safe according to NOHSC, are mainly used. For example, шавар уусмалыг холигч, зууралдуулагч, тосолгоо, орзодхүү хүрдэг нэмэгч, штангны чичиргээг бууруулагч. These are soluble within micro organisms.

According to the geological setting of the deposit, fairly thick clay layer is found in the Oyu Tolgoi area. So, a sump of 5 m³ volume (2m long х 1.5-2m deep х 1.5m wide) can be prepared to mix the drill fluids. This will not be a pollutant for the groundwater.

Inorganic oil is 100% distilled vegetable oil emulsion substances. However, they are soluble within micro organisms and no environmental damage has been reported.

After drilling, drill hole shall be protected using PVC pipe and appropriate grout plugs on it for the following purposes:

- Prevention of ground water pollution through the drill holes by foreign bodies and water of poor quality
- Prevention from mixture of water from different aquifer
- Prevention from inefficient loss of aquifer water.

Burial and rehabilitation of sumps have been conducted permanently and shall be one of the continues processes further.

14.2. Soil and vegetation

Oyu Tolgoi licensed area occupies 8496 hectares area and 96.69 hectare are are slightly disturbed due to essential activities of exploration such as drilling, opening of underground mine mouth, shaft sinking, trenching, household use areas and upgraded or sub roads. (Inspection note of rehabilitation work which have been done at camp site within Oyu Tolgoi area of IMMI. 2004.01.02)

Degraded area of soil and vegetation cover mainly occurs within Oyu Tolgoi area and if the exploration activities take place in those areas it is suggested that removal of top sol is considered not necessary.

However, during vertical shaft sinking top soil was scraped with 30 cm in thickness and separately stockpiled in prepared area.

Although during any trenching the top soil is separately stockpiled from lower layer soils.

In 2005, such activities will be carried out in same way and to determine existing erosion and disturbance of the land and planned to make work mapping.
Vegetation and soils of Oyu Tolgoi and its surrounding areas are recorded in environmental baseline study soil and vegetation monitoring took place in summer and autumn of 2002, 2003 and 2004. This year, vegetation and soil monitoring will continually take place on chosen areas with size of 25m x 25m. Apart from this, species and distribution of plants will be surveyed in detail again, which are determined during general and detailed surveys of environmental impact assessment and that are likely to be affected during extraction activity.

14.3. Protecting water resource and quality

Since 2003 has been working in accordance with the agreement on water utilization concluded with the soum administration. In accordance with this agreement we are planning to continue implementation of activities as follows:

1. To prohibit industrial and business activities in a distance of less than 100 m from the centralized household water resource

2. To take under protection open water, springs with ecological importance located within the licensed area and ensure meeting of hygiene standards

3. Not to use water utilization technology not applicable to international and Mongolian standards

4. To measure physical properties of water at open water and wells; to perform chemical analysis each quarter in accordance with the water monitoring programme

14.4. Protection against water resource deficit

1. Water resource to sustain environmental balance shall be kept during use of water resources for industrial purposes

2. As stated in Article 14.2 of the Law on Water, if water resources are depleted and water quality is degraded due to violations of the water law by water users, breaching the technical specifications for water facilities or technological procedures for water use, purification and restoration work shall be done at the expense of such guilty parties.

3. If it is necessary to divert the river course during construction, costs with regard to restoration and repair works shall be included in the designs and plans.

4. The gravel shall be excavated from the surface up to 2m depth at the river rubble

14.5. Protection against water pollution

1. To prevent pollution of water resources, river beds, ravines and protected zone by waste and toxic substances

2. To establish wells and tanks for drainage of sewage

3. Used drill holes shall be blocked up and handed over to the Governor of the soum
4. In case of discovery of aquifer during exploration and mining of mineral resources, the applicable protection measures shall be undertaken respectively.

5. Compliance with the requirements on protection, rehabilitation and rational use of water issued by the state central administrative body in charge of water issues.

For instance: Analysis for household water shall be performed by the state accredited laboratory in Dalanzadgad of Umnugobi aimag each quarter.

15. ENVIRONMENTAL MONITORING PROGRAM

15.1. Water monitoring

IN 2006 IMMI shall proceed with ground water monitoring in compliance with “Ground water monitoring plan” developed by Aquaterra Consulting Pty Ltd in August 2004.

The water monitoring programs shall be conducted for the boreholes and wells in 2006 as follows:

1. 44 boreholes, 4 wells and 4 open water source nearby Oyu Tolgoi,
2. 67 boreholes and 35 wells in Galbiin Gobi,
3. 48 boreholes, 64 wells and 2 springs of Gunii Khoooloi shall be involved respectively.

Name and location of boreholes and wells to be involved into the monitoring is presented by the Table 12, Pictures 3 and 4. The well and boreholes not involved into the monitoring has been excluded.

Field water analysis for pH, capability of transmitting electricity (E.C), dry residue (TDS) and temperature shall be tested by HI 98129 Waterproof ph&E.C, TDS meter each month at all boreholes and wells involved into the underground water monitoring programme. Water level measurement shall be measured by the plopper or water level tube.
Picture 3. Boreholes in Gunii Khooloi and Galbiin Gobi that are enrolled into the monitoring of underground water
Picture 4. Boreholes nearby OT that are enrolled to the monitoring of underground water

All the wells and specified boreholes are sampled one per quarter and sample is sent for detailed laboratory analysis. Results of chemical test shall be compared with drinking water instructions of Mongolia and New Zealand and standards of World Bank.

Boreholes to be sampled for complete chemical analysis

| Area: Galbbyn Gobi & Gunii Hooloi |
|---|---|---|
| Site | Hole ID | Easting | Northing |
| 1 | GG1 | 691220 | 4723780 |
| 2 | GG2 | 676630 | 4713310 |
| 3 | GG4 | 699500 | 4731100 |
| 4 | GG6 | 674800 | 4724500 |
| 5 | GG8 | 668800 | 4708490 |
| 6 | GG18 | 705000 | 4742000 |
| 7 | GG19 | 700200 | 4750000 |
| 8 | GG20 | 659100 | 4702600 |
| 9 | GG26 | 688000 | 4728000 |
| 10 | GG29 | 718000 | 4751000 |
| 11 | GG32 | 694340 | 4741620 |
| 12 | GG35 | 681160 | 4736650 |
| 13 | GG40 | 724562 | 4778530 |
| 14 | GG41 | 731793 | 4768068 |
| 15 | GG43 | 737000 | 4778710 |
| 16 | GG47 | 723410 | 4763000 |
| 17 | GHW2x3 | 662060 | 4785060 |
| 18 | GH3x1 | 666940 | 4788100 |
| 19 | GH4x6 | 672280 | 4790700 |
| 20 | GH5x1 | 677490 | 4794560 |
| 21 | GH5x2-10R | 676500 | 4799000 |
| 22 | GH6x1 | 682390 | 4798540 |
| 23 | GH6x2 | 681360 | 4802860 |
| 24 | GH14x1 | 689200 | 4803000 |
| 25 | GH14x2 | 689000 | 4808470 |
| 26 | GH15x1 | 697450 | 4808500 |
| 27 | GH15x3 | 696620 | 4804550 |
| 28 | GH15x4-10R | 693500 | 4811500 |
| 29 | GH16x2 | 717350 | 4804000 |
15.2. Soil and vegetation monitoring

Main purpose of the long-term monitoring is to study impact of production and climate on environment. Therefore, every year monitoring of soil and vegetation nearby Oyu Tolgoi shall be conducted during which records with respect to species, cover, percentage, structure of soil and erosion shall be kept.

Monitoring of soil and vegetation of 6 areas within OT licensed area and 10 areas outside the licensed area shall be conducted from 25 July to 10 August 2006 through the same method that was used for monitoring conducted previously.

Selection of monitoring points outside the licensed area shall provide additional basic information to identify impacts of water utilization from Gunii Khoooloi and Galbiin Gobi for mining operation on local environment further.

Location of monitoring areas has been presented in the Table 23.

### Areas for monitoring

<table>
<thead>
<tr>
<th>Name and number of the monitoring</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>North west Plot 12 (1).</td>
<td>648165; 4767018</td>
</tr>
<tr>
<td>Far north east Plot 4 (2).</td>
<td>654014; 4768002</td>
</tr>
<tr>
<td>North east Plot 14 (3).</td>
<td>653602; 4767396</td>
</tr>
<tr>
<td>South east Plot 15 (4).</td>
<td>655983; 4758952</td>
</tr>
<tr>
<td>South west Plot 9 (5).</td>
<td>647500; 4759625</td>
</tr>
<tr>
<td>Far north west Plot 6.</td>
<td>647415; 4767468</td>
</tr>
<tr>
<td>Khunkheriin zag</td>
<td>697641; 4797253</td>
</tr>
<tr>
<td>Shar tokhoo</td>
<td>731763; 4790814</td>
</tr>
<tr>
<td>Gun us – diversifolia grove</td>
<td>710885; 4713793</td>
</tr>
<tr>
<td>Gun us – eastern terrace of diversifolia grove</td>
<td>710933; 4713800</td>
</tr>
<tr>
<td>Gun usnii ders</td>
<td>712343; 4711837</td>
</tr>
<tr>
<td>Bulan sukhait</td>
<td>690201; 4723026</td>
</tr>
<tr>
<td>Khongoriin ovoo</td>
<td>700695; 4725142</td>
</tr>
<tr>
<td>Western valley in Ikh zag, Galbiin Gobi</td>
<td>701461; 4743280</td>
</tr>
<tr>
<td>Southern foot of Javkhlan mountain</td>
<td>667203; 4733527</td>
</tr>
<tr>
<td>Daichingiin zag</td>
<td>659289; 4702555</td>
</tr>
</tbody>
</table>

15.3. Air quality monitoring

Dustiness monitoring at Oyu Tolgoi project shall be continued this year.

4 times dustiness monitoring has been successfully completed at total of 21 points nearby Oyu Tolgoi from July 2002 to June 2004. Model for air quality monitoring of area where Oyu Tolgoi project is implemented has been estimated by integrating results of those measurements. Air quality monitoring shall be conducted at the points in 2006 as follows:
Points for air quality monitoring nearby Oyu Tolgoi

Table 14.

<table>
<thead>
<tr>
<th>No.</th>
<th>Measuring point coordinates</th>
<th>Covered areas</th>
<th>Date</th>
<th>Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>650990 / 4765357</td>
<td>East Oyu</td>
<td>July – August 2002</td>
<td>Results of air quality analysis nearby OT.</td>
</tr>
<tr>
<td>2</td>
<td>650842 / 4764801</td>
<td>North Oyu</td>
<td>July 2002</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>650860 / 4764118</td>
<td>Central Oyu</td>
<td>July 2002</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>650351 / 4763164</td>
<td>South west Oyu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>651280 / 4762876</td>
<td>South Oyu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>650220 / 4763397</td>
<td>Nearby OT camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>648981 / 4765216</td>
<td>Aerodrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>651000 / 4767000</td>
<td>3 km to the north from OT camp</td>
<td>10-28 June 2003</td>
<td>Measurement of dustiness. July 2003</td>
</tr>
<tr>
<td>9</td>
<td>654000 / 4764000</td>
<td>3 km to the east from OT camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>651000 / 4760000</td>
<td>4 km to south from OT camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>648000 / 4764000</td>
<td>3 km to west from OT camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>648066 / 4764388</td>
<td>To the west from OT camp</td>
<td>16-21 April 2004</td>
<td>Interim report on measurement of dustiness</td>
</tr>
<tr>
<td>13</td>
<td>650630 / 4767015</td>
<td>To the north from OT camp</td>
<td></td>
<td>nearby OT.</td>
</tr>
<tr>
<td>14</td>
<td>654112 / 4764175</td>
<td>To the east from OT camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>652649 / 4759876</td>
<td>To the south from OT camp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>650144 / 4763595</td>
<td>Nearby OT camp</td>
<td>26 June - 9 July 2004</td>
<td>Results of measurement of dustiness nearby OT.</td>
</tr>
<tr>
<td>17</td>
<td>648058 / 4765657</td>
<td>North west</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>652610 / 4766652</td>
<td>North east</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>654162 / 4762088</td>
<td>South east</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>650700 / 4760869</td>
<td>South west</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>650108 / 4764097</td>
<td>Meteorological station</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model of air quality monitoring of area where Oyu Tolgoi project is implemented 2004.

16. REHABILITATION TESTS

The following activities shall be conducted in 2006 with purpose to rehabilitate damaged soil of licensed area caused by mining operations in OT project:

1. An experiment has took place in some plots within rehabilitated areas which located nearby Oyu Tolgoi in order to study rehabilitation possibility of plants that grow naturally since 2004.

   a. 2 plots with size of 30m long and 4m wide are located in south and north of stockpiles of Box cut.
   b. 4 meter long and 2 meter wide plot at drilling area
2. The seed collected last autumn shall be planted 15/IV-30/IV
3. To collect and plant seeds of elm, when they are matures 15/V-30/V
4. To collect seed and seed materials upon its maturity 10/X-25/X
5. Planting in autumn season (bushes such as elm and almond) 25/X-5/XI

Seeds and seed materials shall be collected by the end of October upon their maturity with purpose to rehabilitate damaged soil of licensed area.

Quality indicator of seed is crucial for sowing plants especially, seed germination or speed and time for seed germination is important. Now study to identify seed germination percentage, speed and time of initial condition of vegetation is being conducted through the simplified method. This survey shall be conducted in November upon collection of seeds and in February and April again.

17. HISTORICAL AND CULTURAL SITES

IMMI has been conducting excavation and research works in the Oyu Tolgoi site area jointly with research team of the Archeological Institute of the Mongolian Academy of Sciences since 2001. For instance: In 2005, as a result of research works conducted jointly with the Archeological Institute, Academy of Science, 15 new historical and cultural sites have been discovered and registered. Archeological excavation and geological exploration has been successfully completed at aforementioned areas.

Geographic location of newly found historical and cultural sites

<table>
<thead>
<tr>
<th>№</th>
<th>Name of newly found historical and cultural sites</th>
<th>Geographic location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OTR-08</td>
<td>48 T 0663845, UTM 4741146</td>
</tr>
<tr>
<td>2</td>
<td>OTR-09</td>
<td>48 T 0663848, UTM 4741145</td>
</tr>
<tr>
<td>3</td>
<td>OTR-10</td>
<td>48 T 0663399, UTM 4742462</td>
</tr>
<tr>
<td>4</td>
<td>OTR-11</td>
<td>48 T 0663392, UTM 4742466</td>
</tr>
<tr>
<td>5</td>
<td>OTR-22</td>
<td>48 T 0663314, UTM 4742591</td>
</tr>
<tr>
<td>6</td>
<td>OTR-23</td>
<td>48 T 0663314, UTM 4742591</td>
</tr>
<tr>
<td>7</td>
<td>OTR-24</td>
<td>48 T 0663169, UTM 4742746</td>
</tr>
<tr>
<td>8</td>
<td>OTR-25</td>
<td>48 T 0663089, UTM 4742718</td>
</tr>
<tr>
<td>9</td>
<td>OTR-26</td>
<td>48 T 0663067, UTM 4742873</td>
</tr>
<tr>
<td>10</td>
<td>OTR-27</td>
<td>48 T 0660651, UTM 4748109</td>
</tr>
<tr>
<td>11</td>
<td>OTR-28</td>
<td>48 T 0660093, UTM 4750525</td>
</tr>
<tr>
<td>12</td>
<td>OTR-42</td>
<td>48 T 0664017, UTM 4740554</td>
</tr>
<tr>
<td>13</td>
<td>OTR-53</td>
<td>48 T 0664366, UTM 4740830</td>
</tr>
<tr>
<td>14</td>
<td>Stone age remain-1</td>
<td>48 T 0663848, UTM 4741068</td>
</tr>
</tbody>
</table>
Our research also includes 4 shaped burials which were excavated and researched less than any other type of burials, not just in Mongolia but also in neighboring countries. Especially, they have never excavated in Gobi zone, so it is special for researches that is the first excavation of shaped burials.

Besides, during the excavation of burials surrounded by linear features made of stone which occupy crucial position in the archeological survey, evidence of those days such as arrowhead, watery spirit made of white bone and potsherds were found.

Further archeological and cultural sites to be discovered during project activities such as water exploration nearby OT, road and infrastructure corridor rehabilitation works from Oyu Tolgoi to Gashuun Sukhait shall be officially informed to the applicable specialized agencies.

Moreover, paleontological discoveries such as dinosaur egg shall be officially informed to the Research Center of Stratigraphic Paleontology, Geological Institute of Mongolian University of Science and Technology.

18. AUDITING

Internal auditing shall be conducted on permanent basis with purpose to ensure compliance of the activities implemented at Oyu Tolgoi project with the environmental laws, legislations, regulations and standards adopted in Mongolia.

Moreover, IMMI shall cooperate with the soum and local environmental inspector implementing applicable provisions of the Environmental Law and Minerals Law of Mongolia within the framework of its liabilities.

19. DATABASE

Server computer of GIS has been operating in Oyu Tolgoi since January 2006. It includes all the environmental information and data collected from 2002.

All the data with respect to the environmental issues shall be kept on Project Data → Oyu Tolgoi → Environmental folder of the server.

Environmental data have been subdivided into 3 main folders as Aquascape, Archaeology, and Monitoring. Those chapters include number of subfolders in which applicable information is kept.

Environmental data have been kept with extensions such as Text, Ms Access, Ms Excel, Photo and tab, PDF.

With respect to field of information, forms to keep information are different. For instance: information in Archeological folder refers to archeological information of Gashuun Sukhait of Excel,
Text, Photo files while information with respect to Air Quality in Monitoring folder has Ms Access, Excel, Text files.

The information shall be kept on a server during 2006.
## Table 16.

<table>
<thead>
<tr>
<th>№</th>
<th>Environmental protection works</th>
<th>Volume</th>
<th>Cost /in MNT/</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rehabilitation work</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Burying drilling sump</td>
<td>1 020 m³/year</td>
<td>1 530 000</td>
</tr>
<tr>
<td></td>
<td>Burying trenches</td>
<td>10 000 m³/year</td>
<td>5 000</td>
</tr>
<tr>
<td>2</td>
<td>Waste disposal</td>
<td></td>
<td>1 570 000</td>
</tr>
<tr>
<td>3</td>
<td>Irrigation in the area nearby exploration camp, along the road and mining site</td>
<td>36 390 m³/year</td>
<td>1 500 000</td>
</tr>
<tr>
<td>4</td>
<td>Protection of water resources</td>
<td></td>
<td>400 000</td>
</tr>
<tr>
<td>5</td>
<td>Inspection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Environmental inspection</td>
<td>Per week, month</td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Inspection of state environmental inspector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Environmental fees and charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Fee for water utilization:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- household (30 MNT/m³)</td>
<td>56 736 m³/year</td>
<td>1 702 080</td>
</tr>
<tr>
<td></td>
<td>- industrial (50 MNT/m³)</td>
<td>122 688 m³/year</td>
<td>6 134 400</td>
</tr>
<tr>
<td>6.2</td>
<td>Fee for gravel utilization (50 MNT/m³)</td>
<td>Upon performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fee for sand utilization (100 MNT/m³)</td>
<td>52 000</td>
<td>5 200 000</td>
</tr>
<tr>
<td></td>
<td>Fee for river stone utilization (100 MNT/m³)</td>
<td>40 000</td>
<td>4 000 000</td>
</tr>
<tr>
<td>6.3</td>
<td>Fee for utilization of land intended for service purpose</td>
<td>53.04 hectares</td>
<td>2 652 000</td>
</tr>
<tr>
<td></td>
<td>Fee for utilization of land intended for mining operations</td>
<td>2455.6 hectares</td>
<td>245 560 000</td>
</tr>
<tr>
<td>6.4</td>
<td>Fee for utilization of local road</td>
<td>170 km x 7500 MNT</td>
<td>1 275 000</td>
</tr>
</tbody>
</table>

|   | Environmental fees and charges to be paid to local authority | | 266 523 480 MNT |

| 7 | Shaft sinking at North Hugo | | Protection activities have been indicated respectively. It has been included in the cost of the given project. |
|   | - Dam for pumping out of infiltration water | | |
| 8 | Quarry, crusher and patch plant | | |
|   | - Reshaping | | |
| 9 | Sand borrowing area | | |
|   | - Without exposing ground water | | |
| 10 | Operation of water treatment plant | | |
| 11 | Incinerator-vacuum stove to incinerate waste lubricants | | |
| 12 | Monitoring | | |
| 12.1 | Water | | Shall be paid in accordance with fixed schedule |
| 12.2 | Soil and vegetation | | |
| 12.3 | Air | | |

### Environmental protection measures

| Environmental fees and charges to be paid to the local authority | | 10 000 000 tug |

Plan is developed by:
Senior Environmental Coordinator: ...........................J.Oyusuvd
LIST OF DOCUMENTS, REPORTS AND MATERIALS KEPT AT THE OT CAMP

1. Certificate of foreign incorporated business entity of IMMI LLC
2. Certificate of foreign incorporated company of the Redpath Mongolia Company, shaft excavation sinking
3. Certificate of Eco-Trade consulting company
4. Mining licenses of IMMI 6710а, 6711а, 6709а, 6708а
5. General Environmental protection plan to be complied during the geological exploration
6. Environmental Protection Plan-2004
7. Supplementary EPP on shaft #1 - 2004
8. Permission of shaft sinking. Official letter No 4-7339 of Mineral Resource Authority of Mongolia
9. Permission document of shaft explosion 97/04
10. Land use agreement concluded between Khanbogd soum and IMMI
11. Resolution of Khanbogd soum Governor on land use by the foreign incorporated entity. 2002.12.28
12. Khanbogd soum Governor Resolution to make amendment on land use contract of IMMI, foreign incorporated company, 2004.07.02
13. Land use certificate granted for business entity. Number 15110012
15. Agreement on water utilization made with the Governor of Khanbogd soum -2004
16. Permission on water utilization issued by the Governor of Khanbogd soum
17. Order on conducting road rehabilitation works issued by the Governor of Khanbogd soum
18. Permission on establishment of landfill issued by the Governor of Khanbogd soum
19. Permission of Oyu Tolgoi aerodrome
20. Permission of Gas Station in OT
21. Reports of inspection and execution work of engineering construction work in new camp
22. Environmental baseline study report of OT project -2002.10
25. Implementation report of Environmental Protection Plan -2003
26. Mineral Safety Data Sheets on the Drilling Site of OT area
27. Vacated Drill Site Inspection materials
28. Corrective action registers
29. Acceptance certificates of rehabilitation and environmental protection work within OT project and etc.
REFERENCE MATERIALS

1. Summary of Feasibility study of Oyu Tolgoi deposit
2. Report of exploration works conducted at Oyu Tolgoi deposit in 2005. 2006.1
5. Protocol on acceptance of environmental rehabilitation works conducted at IMMI exploration area of Oyu Tolgoi 2005.12.5
6. Mining operation plan for sinking of shaft #1 in 2006
7. Open pit mining plan of quarry to be mined at Oyu Tolgoi deposit in 2006
8. Resolution of Khanbogd soum Governor on allocation of point for sand and gravel borrowing 2006. 03.16
9. Screening of detailed EIA report of Oyu Tolgoi to Gashuun Sukhait road and infrastructure corridor
10. Supplementary Environmental Assessment Report for the Vertical shaft No.1 of Oyu Tolgoi Hugo North Deposit
11. Report of screening EIA on Groundwater Exploration for Oyu Tolgoi Mine Water supply Carried out Within Galbryn Gobi and Gunii Khooloi areas