

**Response to Comments Submitted by Centre for Human Rights and Development (CHRD)
Big Bend Mining Project
Mongolia**

OPIC received commentary from CHRD in response to posting of the project SEIA. The complete text of the comments received, and an Agency response to each, is provided below.

1. The project located along Tuul River which is the main source of drinking, and household water for the local herders. Tuul River is being severely affected by mining projects that has been rapidly operating since 1990s. Particularly, the mining projects have been implemented irresponsibly in terms of environmental protection and rehabilitation plan and its implementation. Therefore local nomadic herders traditional lifestyle and nomadic livestock management affected badly in Zaamar soum Tuv province. The communities access to water and pastureland management issues are becoming more problematic.

OPIC understand that the Tuul River is an important environmental and cultural resource. The Tuul River valley has historic and current use as pastureland and the river is a very important source of drinking water for humans, livestock and wildlife. The riparian corridor and wetlands associated with the riparian corridor serve as rare and important habitat for wildlife in the semi-arid region, and the Tuul River is a distant tributary to Lake Baikal, which is designated as a World Heritage Site.

There have been significant social and environmental impacts caused by relatively recent mining activity in the Zamaar Goldfield, which traces the course of the Tuul River. Many of the disparate mining companies operating in the region have historically given, and continue to give only a minimum of attention to the environmental and social impacts of their activity. The environmental impacts of mining activity to the Tuul River include river diversions, a pronounced decline in water quality and destruction of valuable riparian corridor habitat. As discussed in Attachment 1 of Appendix E of the SEIA, the Zaamar Soum currently contains a total of 135 mining and exploration licenses issued for 87,000 hectares, or approximately two-thirds of the total Zaamar Soum land area.

While the Project Sponsor (WM Mining) is unable to govern the mining and reclamation activities of other operations in the Tuul River valley, OPIC believes WM Mining will perform their mining activities with the ultimate intent of returning the mined area to a high level of environmental integrity and with sensitivity to the social fabric of the region. Using modern mining and reclamation methods, WM Mining plans to provide an example in the region of how mining activity can be conducted in a manner that both enables exploitation of a valuable resource, while simultaneously protecting the environment and being respectful of traditional means of livelihood that exist in the Tuul River valley.

Concurrent with the aforementioned increase in mining activity, there has been an increased pressure on traditional nomadic grazing activity due to (1) a decrease in the land available for use as pastureland; (2) low levels of rainfall; and (3) increasing grazing stock numbers. Because of the increased mining activity, an interdigitation of nomadic grazing and mining operations has resulted throughout the Tuul River valley. Because the 3,170-hectare project area is yet undeveloped, livestock grazing activity there has increased dramatically over the last four years with significant environmental impacts. In

2003, the level of grazing was much less, involving only a few horses and yaks. Sheep and goats now graze over the entire project area.

The project has been granted full mining rights for the project area, and has full legal authority under Mongolian Law to exclude herding activity from the site. However, the WM Mining has indicated sensitivity to traditional nomadic grazing practices of the local population and wishes to conduct its operations in a manner that incorporates environmental management best practices, and that recognizes and values the rights of stakeholder groups in the project. OPIC believes that WM Mining has developed a sound Environmental and Social Impact Assessment and Environmental Mitigation and Monitoring Plan, a determination that has also been made by Mongolian regulatory officials (i.e., local soum Governors and the Ministry of Nature, Environment and Tourism).

The project has also been approved of by an Independent Environmental Assessment Committee, organized by the Ministry of Nature, Environment and Tourism (MNET), and comprised of five scientific specialists (in the fields of mining, soils, geology and botany) which are directors of scientific associations or the heads of technical departments of universities in Mongolia. The purpose of establishment of this Committee by MNET was to provide an independent review of the Mongolian Environmental Assessment prepared by the project. These specialists, listed below, are recognized as experts in their field and the review was completed independent of government or political influence

Team Leader

- Prof. Batsukh N., Hydro-geology and geo-ecology team leader, College of Geology and Oil, Mongolian University of Science and Technology (member of the Sub-Assembly of the Mongolian Academy of Sciences (MAS), member of the International Association of Hydro-Geologists)

Team Members

- Dr. Suran D, Prof. Dept. of Botany, Faculty of Biology, National University of Mongolia, Ikh Surguuliin Gudamj-2, NUM, Ulaanbaatar.
- Prof. Batjargal D., Advisor, Project Manager of Mining Institute of MAS, Doctor of Science, Member of the Technical Subassembly, MAS, Member of the Mongolian National Engineering Academy, P.O. Box 51, Ulaanbaatar, Mongolia
- Dr. (PhD). Batkhishig O., Head of Soil Science Laboratory, Institute of Geography, MAS
- Mrs. Erdenetsetseg C., EIA reviewer, Department of Environment and Natural resources, Ministry of Environment and Tourism of Mongolia

Team Secretary

- Mr. Gantumur D., specialist, Department of Environment and Natural resources, Ministry of Environment and Tourism of Mongolia

Specific examples of environmental mitigation measures that will be implemented by the project include, but are not limited to, the following:

- No more than 15 percent of the 3,170 hectare Project Area is anticipated to be disturbed by mining activity;
- No mining will occur within 100 meters of the Tuul River, thereby drastically reducing if not eliminating impacts to water quality and aquatic life;
- Modern sediment and erosion control techniques will be implemented to isolate all mining activities from the Tuul River using sediment fencing and other advanced techniques;
- Multiple track roads will be consolidated to minimize land disturbance;
- Roads will be constructed and maintained to modern standards to minimize erosion and control sediment runoff;
- Proper design and management practices will be employed in the location, storage, containment and use of fuels and other potentially environmentally hazardous substances;
- Mine process water will be reused and recycled to minimize the amount of water consumed;
- Water quality and habitat quality will be monitored throughout the life of the project;
- Disturbed areas will be reclaimed by contouring to match the existing landscape and revegetating through the replacement of topsoil and selection of appropriate plant species;
- Reclamation will be performed concurrently during mining operations to minimize the footprint of the project and to restore land productivity; and
- Wetland and aquatic habitat may be enhanced and increased through proper reclamation of dredge and sediment ponds.

Initially the project will exclude the project area's 3,170 hectares from grazing activity. The exclusion of livestock grazing will be primarily achieved with on-site security personnel. On-site security will ensure that reclamation areas are not disturbed in order to enable successful revegetation. Reclamation activities will be performed contemporaneously with operational activities. A gate will be installed at the project area's point of access/egress and the mining camp facilities will be fenced for health and safety purposes. The Project Sponsor will allow access to the Tuul River for most of its length in the project area and all of the banks are and will remain accessible.

Interviews have been held with each of the ger units that may be directly impacted by the project, as identified in the Project SEIA. It has been determined that these individuals have occupied the general area in the summertime months and that they have de facto claims to compensation. The voluntary relocation of the local ger herding units will be accomplished through a relatively small negotiated

cash settlement and, most importantly, through assistance to help the herders of these ger units locate to alternative grazing pasture for their use. A rangeland specialist will work with the Project Sponsor and local Soum governors, whom have legal jurisdictional authority over land use in their regions, to identify suitable locations for the herders of these ger units, such that their way of life will not be compromised. OPIC will closely monitor these negotiations and monitor the project over time to verify that this voluntary resettlement activity is conducted in conformance with international best practices.

Fair, transparent, and open negotiations are ongoing with the five families that may be directly impacted by the project. In the long term, modern reclamation methods will improve the land for grazing and wildlife uses. The project area will be reclaimed with native vegetation and improved livestock and wildlife watering areas and habitat. The creation of wetland and open water habitats and reclamation of riparian areas represents a significant biodiversity offset for the project. The value of wetland, riparian and open water habitats in Mongolia is very high, and increases in these habitats are considered significant.

Finally, it is widely recognized, both by local and national Mongolian Government officials, that the Zamaar Goldfield has been very loosely regulated over the past decade and that this lack of regulation has resulted in adverse social and environmental impacts in the area. Successful implementation of a project that utilizes best practices with respect to environmental and social mitigation will serve as a template for current and future mining activity in the region. Although difficult to quantify, the tangible benefits of progressive development of gold resources in the Tuul River valley will hopefully encourage or force other mining entities to conduct their activity in a like manner.

2. Thus the broad consultation with local herder communities on the water and pastureland management during and after mining operation should be conducted before affirming the SEIA report. The SEAI says that the team has conducted many of consultations with local stakeholders including government officials, local admiration, and local inhabitants. But from the list of interviewers, there are only 5 local herders from Zaamar soum and 1 person from Buregkhangai soum. It is truly not sufficient to explore the entire concerns of local people and plan mitigation measures by interviewing such a small number of people. 69 herder family living in Khailaastai bag (a smallest administrative unit where the proposed mining is located) of Zaamar soum take all drinking and household water from the Tuul River. Therefore these people should be involved to consultations. According to the Environmental Impact Assessment law of Mongolia, comments of local people to the any EIA should be obtained through conducting the Public Meeting of Bag of which session shall a quorum if at least one person from 4 households represented. Besides residents of Zaamar and Buregkhangai soum, people from other provinces along with Tuul River who possibly affected from the project should also be involved to the consultation process.

The Environmental Impact Assessment Law of Mongolia (1998) stipulates that a detailed EIA report incorporate comments of citizens and local soum government representatives of the area in which the EIA project is planned for implementation. WM Mining consulted the people at and near the location at which the project is proposed. Stakeholder engagement by WM Mining has been and will continue to be conducted in accordance with Mongolian Law, as well as applicable International Finance Corporation Performance Standards. The project is the first mining project in the Tuul River Valley to engage local peoples. WM Mining has demonstrated a willingness and proactive approach to

disseminate details of the project, including the project mining plan as well as environmental and social mitigation measures, in coordination with local, national and international stakeholders. Broad community support not only facilitates the mine operation, but it also serves as the social license to operate. Therefore, WM Mining is committed to ongoing consultation with stakeholders, including the families within the Khailaastai Bag.

During the stakeholder engagement process documented in the SEIA, a number of concerns were identified including the following:

- There are high expectations of job creation and employment opportunities from local Soum governments. However, likely employment creation during construction and operation phases of the project is small (approximately 50 people) and the skill levels of local people may not meet the requirements for many of these jobs;
- Local governors and herders identified opportunities to enhance the positive social impacts of Big Bend operations by allowing local herders to supply meat, milk and services to the exploration/mine sites, subject to these meeting specified quality, health and safety criteria;
- Concern for grasslands and grazing is a primary issue among local herders and there are worries about the way other operations have failed to properly reclaim mined land in the Tuul River valley.
- Water is a key issue, both as a source of household water supply as well as for use by livestock. Other mining operations have polluted the Tuul River to an extent that the water is almost unsuitable for animals and potentially unsafe for humans to drink.

The project is fully aware that the quality of the Tuul River is of great concern to stakeholders. As such, the project has been designed protect the Tuul River and in fact will conduct no mining activity within 100 meters of the river, nor will soil stockpiles be placed within 50 meters of the river banks. As a result, adverse water quality impacts from the project are not anticipated. The project will virtually have zero discharge, with any direct or indirect discharges from mining activities controlled to regulatory standards. Some nonpoint source inputs may be anticipated, but advanced erosion control, sediment fencing, geotextiles, hydroseeding, and other soil stabilizing techniques will reduce sediment runoff to the Tuul River. The Project will not utilize chemicals in mining or processing, thereby minimizing the potential mobilization of metals or other contaminants that could cause water quality degradation. A modern water quality monitoring system will be implemented to ensure compliance with relevant and applicable water quality standards. There are anticipated to be no significant water quality impacts to the Tuul River from the project.

To advance transparent communication of the project's planned activities, WM Mining will disseminate the project mine plan in a Mongolian language, non-technical brochure to all stakeholders in the project area, as well as display this information at the Zamaar and Buregkhangai Soum centers. The brochures will have specific information related to the mining plan, the existing grievance mechanism, security procedures at the project area and detail environmental mitigation and planned reclamation measures of the project.

Additionally WM Mining has committed to several additional disclosure and consultation activities. These include:

- Placing a copy of the project EIA in the MNET headquarters office, the Mineral Resources Authority of Mongolia headquarters office, public libraries, the World Bank Office and the UNDP Office in Ulaan Baatar. Distribution of hard copies of the document is viewed as the most effective means of disseminating information about the project because of the lack of access to internet resources in Mongolia.
- Distribute information brochures in the Shijiir Alt mining camp and locatable ger settlements in the area.
- Conduct public hearings/meetings in Ulaan Baatar, the Shijiir Alt mining camp, the Zaamar Soum Center, the Buregkhangai Center and Bulgan. Although these sessions will not be formal public hearings required by law, WM Mining will invite government officials from the local and national governments, environmental NGOs active in Mongolia and representatives from local trade associations (e.g., herders, foresters, farming, and informal miners).

As stakeholder consultation is a continuing process WM Mining will continue to interact and consult with the Soum Governors and the local population throughout the life of the project. Since one-on-one consultation with all individuals potentially affected by the project may not be feasible, the project has committed to implementation of a Stakeholder Engagement Program (SEP) in compliance with IFC Performance Standard 5. The Stakeholder Engagement Program will have the following components:

- Specific details of community-wide on-going consultation, engagement and information sharing.
- Specifics of the formal grievance mechanism, which is already in place. The mechanism allows a complainant to access the mechanism through the project, Soum governors, MNET or the Ministry of Mines. The mechanism requires WM Mining to contact the complainant within 15 days of receipt of the complaint.
- Incorporation of a formal Socio-Environmental Management and Reporting Plan, which will ensure that socio-economic impacts are identified, mitigated and managed as quickly and effectively as possible.

3. According to the SEIA, 25 dredging blocks will be created 100 meters away from Tuul River channel. But as shown in the Figure III.2-14, dredge blocks overlap the Tuul River in several places. The SEA is not clear how to operate mining 100 m away from the river stream. According the Law on Water, mining operation in river channel is prohibited. Further, OPIC must pay attention to the current reform on mining and environmental legislation in Mongolia that some of members of the Parliament submitted to the Parliament the draft law that aimed to cancel all mining licenses issued in river basins.

Figure III.2-14 of the project SEIA displays the 25 dredge blocks that were delineated for development as well as the placer exploration lines that were drilled to identify the gold reserves. Used in conjunction with Table III.2-11, these figures assist with the visualization and general understanding of the proven gold reserves that exist in the Project Area, not necessarily the specific areas that will be mined.

Even though Figure III.2-14 displays the dredge blocks near the Tuul River, no mining will occur within 100 meters of the Tuul River proper, in accordance with the general order from MNET, and as stated in the SEIA (pg. V-19). As noted in the SEIA, “Per the current Mongolian government request, no actual mining can occur within 100 m of the river; however, topsoil stockpiling and other mitigation measures (e.g., sediment fencing, filter fabric) may be conducted within 50 to 100 m from the river.” WM Mining will abide by the regulations of Mongolia; therefore, no mining will take place within 100 meters of the Tuul River. OPIC will require the project to conduct mining operations in accordance with the above setbacks as a condition of OPIC support, regardless of changes that may occur in the regulations of Mongolia.

Meetings with the Zaamar and Buregjangai Soum Governors have been conducted, resulting in letters of support and encouragement (see attached letters).

**Agency Response to Comments Submitted by Southwest Research and Information Center
(SRIC)
Big Bend Mining Project
Mongolia**

OPIC received commentary from SRIC in response to posting of the project SEIA. The complete text of the comments received, and an Agency response to each, is provided below.

4. To support a loan application, a Social and Environmental Impact Assessment (SEIA) and Social and Environmental Management and Monitoring Plans (SEMMP) were submitted the Overseas Private Investment Corporation (OPIC) by WM Mining for a Big Bend Gold Mine Project (BB GMP) in Mongolia, October 2008. The documentation is available at: https://www2.opic.gov/environaspeia/bigbend/eia_bigbend.asp.

A review of the SEIA and SEMMP shows that the documents contain major deficiencies sufficient for OPIC to reject the Big Bend Gold Mine Project. Major Deficiencies in SEIA for Big Bend Gold Mine on Tuul River in Zaamar Soum, Mongolia include (Based on these major deficiencies, it is recommended that the SEIA and SEMMP for the Big Bend Gold Mining Project be rejected as incomplete and inadequate to support consideration of an OPIC loan application.):

4a. The Reclamation and Closure portion of the SEIA is incomplete and fails to provide site-specific details regarding reclamation activities or their projected costs.

First it should be mentioned that the SEIA and mine plan have been approved by the Mongolian Ministry of Nature, Environment and Tourism (MNET), an Independent Environmental Assessment Committee comprised of technical experts organized by MNET, and the project is supported by the governors of both Burenhangai and Zaamar Soums. Although all details of planned reclamation activities cannot be prepared ahead of time, OPIC has requested and received additional information regarding site reclamation activities and costs which we hope will clarify the derivation of anticipated reclamation costs.

Since reclamation will occur contemporaneously with active mining, using the mining dredge to remove and pump overburden to fill in the dredge pond behind the mining dredge, the overburden is moved only once and is reflected as a mining cost. As overburden will be used to refill each dredge pond, reclamation costs will be limited to removing and stockpiling 30 centimeters of topsoil, moving the topsoil back over the overburden, grading works, and revegetation of the site. The project anticipates total area to be reclaimed each year to be between 33 to 64 hectares/year. This is a significant increase over the approximate 9.2 hectare/year estimation provided in the SEIA, an increase that is attributed to refinement in estimation of the project's overall footprint on a yearly basis. Each year's mining activity will be reclaimed within that year so that at any given time the maximum extent of unreclaimed area will be 64 hectares.

The area to be reclaimed each year is estimated to be from 33 to 64 hectares per year. Although the presence and thickness of a humus layer (the soil A horizon) varies across the project area, with some

locations having only silt (i.e., no topsoil) and some portions of the site containing very thick peat deposits, it is generally estimated that across the project area the topsoil thickness is 20 centimeters. A 30 centimeters topsoil horizon is used for conservativeness in calculation estimates. These numbers reflect a total volume of between 99,000 cubic meters to 192,000 cubic meters of material to be stripped and stockpiled, then replaced and graded in preparation for revegetation. Hence, total volume of material to be moved each year is between approximately 198,000 and 384,000 cubic meters. WM Mining estimates that 1000 cubic meters of material can be moved and graded per eight hour day per bulldozer. The project will have two bulldozers, which will be required for a total of 198 to 384 dozer days per year. Bulldozers are owned by the project and operators are paid a salary of \$500 per month. Hence total labor costs are conservatively estimated at \$600/30 days per month = \$20 per day or \$0.02 per cubic meter of material moved. Diesel fuel is a major cost, estimated at approximately \$130 per hour for each bulldozer. The diesel fuel cost to move and grade a cubic meter of topsoil is equal to approximately \$1.04. Adding cost of labor at \$0.02, total costs of moving and grading topsoil are estimated at \$1.06 per cubic meter, for a total annual cost of between \$209,880 to \$407,040.

The cost of revegetation is estimated based on the harvesting of native grass seeds, harvesting native hay for mulch, discing (crimping) the mulch and hydroseeding the grass to establish appropriate cover. Necessary equipment will be purchased by the project; hence total annual costs will be based on Mongolian labor, fuel and fertilizer costs. WM Mining has obtained quotes from a U.S.-based revegetation contractor indicating a price of \$900 per acre for these costs, which equates to \$2,160 per hectare. Thus annual revegetation costs will range from \$71,280 to \$146,880.

Total annual reclamation costs are estimated to range from a low of \$281,160 to a high of \$553,920 (approximately \$8500/hectare in total). WM Mining has committed to maintain a reclamation and closure fund, consisting of one year's anticipated total reclamation costs, in a separate account for use in reclamation of the site, in conformance with the International Finance Corporation's Environmental, Health and Safety Guidelines for Mining. As a condition of OPIC support the project will be required to update the Mine Remediation and Closure Plan to reflect additional information collected (e.g., the use of hydroseeding in revegetation efforts) and refinement of anticipated reclamation costs. This Plan will be modified, as necessary, over time to reflect any changes in mine development and operational planning, as well as any changes in site conditions.

4b. The Application fails to include a site-specific reclamation and closure plan, the basis for site-specific reclamation and closure costs estimates, or commit to establishment of financial guarantee adequate to insure that full and effective reclamation is accomplished. Volume V- Section 3.3 of SEIA and the Reclamation and Closure Portion of the SEEMP ("RACP") merely provide conceptual discussions of reclamation and closure methods and practices. Those Reclamation portions of the SEIA provide no site-specific information regarding where in the proposed mine area specific reclamation practices will be used, fails to identify any of the reclamation equipment and materials to be used or any of the measures that will be used to determine reclamation performance.

The SEIA does provide details of the proposed mining and reclamation component of the project. Additional details, including refinement of the costs of reclamation activity and OPIC-required commitments for the establishment of a financial guaranty for reclamation and closure activities, are provided in the response to comment 4a. Reclamation will be performed concurrently with active

mining to restore land productivity. In general, the overall goals for reclamation and revegetation in the project area are to provide both short- and long-term erosion control, ensure land-use compatibility with the surrounding environment and to leave the reclaimed areas as a self-sustaining supporting ecosystem. The project has suggested potential enhancement of wildlife habitat in the project area via the intentional establishment of a wetlands, marshes and open-water habitat system in the project area that would be integrated within the greater Tuul River valley. This would provide additional high-value habitat in the project area that can be used by migratory waterfowl and terrestrial species. Any such artificial habitat creation would be conducted in accordance with MNET, with which the project enjoys a very good working relationship.

It is the intent of the project to return all mined areas to a high level of environmental integrity, as an ecological preserve with enhanced riparian, wetland, open water and upland pasture values. Increases and improvements in these habitats represent a significant biodiversity offset for the project.

The following are salient points regarding planned reclamation and revegetation measures:

- Topsoil will be stockpiled and used to reclaim all mined and slurry spoil areas. The impacted areas will be contoured to have gentle slopes which will then be revegetated;
- Mining will proceed in a series of dredge blocks. When a dredge block is completed, the dredge pond will be contoured and reclaimed with willow cuttings and grasses (native vegetation); some dredge blocks may be purposefully reclaimed as open water habitat for wetland and aquatic wildlife gain. This represents valuable habitat similar to oxbow lakes, sloughs, and marshes;
- Reclamation design protocols will follow standard recognized practices adaptable to the project site conditions as outlined in the Placer Mining Reclamation Handbook (Inter-Fluve, Inc. 1990. Placer Mining Reclamation Handbook. US Environmental Protection Agency, Region VIII, Montana Office: Helena (MT). 78 pp.)

The primary reclamation equipment to be utilized includes bulldozers, front-end loaders and two cutter suction dredges. The dredges were purchased from IHC Holland (IHC), the world's market leader in the design, fabrication and supply of equipment and services for the dredging and alluvial mining industries. The use of modern mining equipment, used in a manner consistent with best practices for environmental protection and reclamation, represents a significant, important and exemplary improvement over the practices of other operations currently mining in the Tuul River valley. Specific details regarding ground cover percentage, vegetation mix, etc. will be refined during the process to achieve best results, as successful reclamation efforts require implementation and monitoring of success and failures to achieve the intended goals.

4c. While the Reclamation discussion identifies general goals of reclamation from the World Bank/IFC guidelines, it fails to provide either a budget or schedule for any reclamation efforts or plan views – or any other views - of the projected Big Bend mine site or identify where and how reclamation practices will be accomplished.

A plan view map of the proposed mining area is provided in Figure III.2-14 of Part III of the SEIA. Figure III.2-14 identifies the dredge blocks where the proposed dredge mining will occur. No mining will occur, however, within 100 meters of the Tuul River. The mining and reclamation will be continuous during seasonal operations which extend from April to November. The proposed operation started in 2008 with planning and equipment purchases, and will continue for 11 years through 2017. See also response 4a.

4d. The sole discussion of a reclamation schedule in the RACP is found in the one paragraph RACP V-6.1. That paragraph merely restates conceptual reclamation process for the site, and fails to identify which portions of the mine are proposed for extraction-related activities at any time in the operating life of the mine. The RACP fails to identify which equipment will be used to conduct any surface management during reclamation and which revegetation goals will be attained at areas where re-seeding or re-vegetation would occur. The reclamation plan fails to differentiate between reclamation practices, such as planting seeds and planting seedlings, and the attainment of revegetation goals, such as biodiversity standards for the mix of vegetation to be established at a site, the density of ground cover from established plants or the long-term survival rates for plants in a revegetation program. Planting seed and seedling should not be confused with attaining re-vegetation goals. The BB SEIA fails to identify site-specific revegetation goals and merely discusses reseeding and replanting in a conceptual way.

Overall reclamation and revegetation goals and methods are discussed in the Mine Reclamation and Closure Plan in the SEMMP (see sections 3.5, 3.10, 3.11, 5.0 and 5.3) and were restated in Response 4b. Specific details regarding the timing of the mining of dredge blocks is contained in the Mine Plan. Monitoring of concurrent reclamation will be conducted by field evaluations of previously reclaimed areas once or twice a year during the growing season to evaluate erosion status and vegetation development. OPIC will also monitor reclamation activity. See 4b.

4e. The Reclamation Cost portion of the SEMMP project at Section 6.2 mentions a range of reclamation cost of \$1,470 – \$4,400/hectare without citing a source for those estimates, without comparing the reclamation activities between the mines cited and the BBGMP, and without determining whether reclamation at the relevant mines is complete and successful. These generalized reclamation costs are not converted to a budget or correlated with a schedule for the operation or reclamation of the proposed mine. The reclamation costs mentioned in the RACP are not recalculated from the unidentified source to reflect either actual reclamation costs for specific phases of the proposed mine or an actual budget for project activities through the life of the proposed mine.

See responses 4a through 4c. An annual budget has been established for reclamation activity, which will occur from day one of project operations. Reclamation activity will occur concurrently with mining activity, through ultimate closure of the project, anticipated in 2017. A reclamation and closure fund will be established per international best practices, as articulated in the International Finance Corporation's Environmental, Health and Safety Guidelines for Mining. This Guideline includes the following language:

“The costs associated with mine closure and post-closure activities, including post-closure care, should be included in business feasibility analyses during the planning and design stages. Minimum considerations should include the availability of all necessary funds, by appropriate financial instruments, to cover the cost of closure at any stage in the mine life, including provision for early, or temporary closure. Funding should be by either a cash accrual system or a financial guarantee. The two acceptable cash accrual systems are fully funded escrow accounts (including government managed arrangements) or sinking funds. An acceptable form of financial guarantee must be provided by a reputable financial institution. Mine closure requirements should be reviewed on an annual basis and the closure funding arrangements adjusted to reflect any changes.”

4f. The reclamation cost discussion fails to provide any discussion of financial assurance to guarantee that reclamation practices are implemented and that reclamation goals are attained at the project mine. Financial assurance estimates would identify the type of financial guarantee filed with a guarantor and appropriate regulatory agency and the full cost of third party completion of reclamation activities and attainment of reclamation requirements.

See responses 4b, 4d and 4e.

4g. The Reclamation discussion at SEMMP section 7.0 Public Involvement fails to acknowledge or provide any aspect of public involvement related to development of reclamation standards and monitoring of reclamation completion. The discussion merely identifies the potential opportunity for employment in revegetation activities. The BBSEIA fails to provide for public involvement in decision-making related to insuring that the reclamation of land restores mined land sufficiently to allow pre-mining uses such as animal- husbandry, the traditional land use activity practiced by local livestock herders.

WM Mining has completed a Public Consultation and Disclosure Plan as well as a Community Development Plan, which are included in the Social and Environmental Management and Monitoring Program (SEMMP). During the stakeholder engagement process the project received input regarding a number of concerns including potential employment opportunities and the possibility of local herders providing meat, milk and services to the project. In addition, stakeholders also expressed concern for the existing pastureland grazing quality of the Tuul River valley, as most other mining operations have failed to properly reclaim their properties. Water quality was also identified as a key issue as the Tuul River is a major source of drinking water for not only livestock, but also as households. There is a common belief among local stakeholders that other mining projects in the valley have polluted the Tuul River. to such an extent that it is in danger of being compromised as a source of water for livestock and may be unsafe for human consumption.

The WM Mining project goals for reclamation are to return all mined areas to a high level of environmental integrity, and to establish the project concession area as an ecological preserve with pasture and riparian habitat value, as well as possibly enhancing wetland and open water habitat. Increases in such habitats would represent a significant biodiversity offset for the project and would only be conducted in accordance with MNET. Again the reclamation goal of the project is to ensure ultimate land-use compatibility with surrounding lands, and to leave reclaimed areas as a self-supporting ecosystem.

It is important to realize that the project area has been subject to recent overgrazing. Overgrazing occurs when plants are exposed to intensive grazing for extended periods of time, or without sufficient recovery periods. It can be caused by overpopulations of native or non-native animals. Overgrazing reduces the usefulness, productivity, and biodiversity of land and is a major cause of desertification and erosion. It is the intent of the project to return the project area to a sustainable level of animal husbandry, while simultaneously protecting the valuable ecological characteristics of the Tuul River valley. This intent has been communicated to all stakeholders including Mongolian Government officials.

The project is fully aware that the quality of the Tuul River is of great concern to stakeholders. As such, the project has been designed to protect the Tuul River and in fact will conduct no mining activity within 100 meters of the river, nor will soil stockpiles be placed within 50 meters of the river banks. As a result, adverse water quality impacts from the project are not anticipated. The project will virtually have zero discharge, with any direct or indirect discharges from mining activities controlled to regulatory standards. Some nonpoint source inputs may be anticipated, but advanced erosion control, sediment fencing, geotextiles, hydroseeding, and other soil stabilizing techniques will reduce sediment runoff to the Tuul River. The Project will not utilize chemicals in mining or processing, thereby minimizing the potential mobilization of metals or other contaminants that could cause water quality degradation. A modern water quality monitoring system will be implemented to ensure compliance with relevant and applicable water quality standards. There are anticipated to be no significant water quality impacts to the Tuul River from the project.

For additional information on disclosure and consultation activities see response 2.

4h. The Part V – 3.3 discussion of Reclamation in the SEIA fails to identify any site-specific reclamation plans or a schedule and budget for reclamation at areas proposed for mining. At Fig V-1 the SEIA purports to provide a picture of concurrent reclamation at gold mine in Mongolia however that the text fails to identify the mine in the picture, fails to compare the mine practices in the picture with practices proposed at BBGMP, and fails to identify if reclamation was successfully achieved at the site.

Fig. V-1 shows the mining and concurrent reclamation activities at the Yalbag Mine in northern Mongolia. It was not intended to represent the mining methods proposed at the project site; but rather to illustrate continuous and concurrent reclamation at a placer gold mining operation in Mongolia being conducted by Cold Gold Mongolia Ltd. Reclamation activities will occur concurrently with active mining and a budget and schedule for reclamation activity is described in responses 4b and 4c.

4i. The heavily forested landscape in the background the lack of a large flowing river in mine area shown and the lack of dredging equipment in Figure V-1 indicate that the location of Figure V-1 is quite different that the climatic, ecological and hydrologic setting of the BBGMP and that the mining method in use in Figure V-1 is not similar to that proposed at BBGMP. A view of the grassland ecosystems and large flowing river at the Big Bend site in the SEIA is at SEIA Fig II.2-5 and III.3-6.

See response 4h. The intent of Figure V-1 is to simply illustrate an example of continuous and concurrent reclamation.

4j. SEIA Figure V-2 shows a schematic diagram of placer mining with concurrent reclamation however the SEIA and SEMMP include no detailed plans of operations or other information to demonstrate how the concepts illustrated in Figure V-2 will be implemented in the BB GMP. The reclamation discussion fails to identify a single example of complete or successful reclamation at a gold mine using the dredge method proposed at BB GMP.

Both the SEIA and The SEMMP provide specific details regarding the mining and reclamation methods. See Response 4b. Examples of successful reclamation were provided in the SEIA in Part V, Section 3.3.4. The figure of the Yalbag Mine (Figure V-1 of the SEIA), located in northern Mongolia, was one example that shows continuous and concurrent reclamation, advancing in step as the mining advances. Successful reclamation, under direct order by the Mongolian Government, has also occurred at the Altan Dornod former mining site, which is located on a tributary to the Tuul River. This reclamation can be observed to have been effectively instituted, with contouring, drainage control, stock watering ponds, sediment control and successful natural revegetation.

4k. The SEIA fails to discuss any substantive details regarding the literature it identifies regarding placer mine reclamation at SEIA V-The SEIA fails describe what measures were used to determine the “high success rate” asserted in Section V-3.3.4. The SEIA fails to demonstrate that any aspect of the mine reclamation discussed in the reports cited relates to the activities proposed at or ecological conditions associated with the BB GMP proposal. The SEIA fails to demonstrate that the reclamation activities addressed in the studies achieved sustainable results allowing for productive post-mining land use without active maintenance or supplemental reclamation activities. The SEIA fails to demonstrate that any of the reclamation activities in the reports cited involved restoration of the riparian habitat in an alluvial valley or the groundwater flow regime consistent with pre-mining conditions. The SEIA cites a 1990 Placer Mining Reclamation Handbook but fails to describe the applicability of that reference to any contemporary set of mine reclamation requirements or performance standards.

RECOMMENDATION: The SEIA should be rejected as incomplete and inadequate for further review. Future modifications of the SEIA, if any, should be reviewed for the completeness of reclamation plans, budget, schedule, cost, and financial assurance options before acceptance as complete by reviewing agencies.

See response 4j. The project anticipates engaging many advanced reclamation techniques, including customized hydroseeding, the first known application in Mongolia. Reclamation planning will take full consideration of the physical, chemical, biological, and social conditions occurring at the site.

The examples cited in Part V, Section 3.3.4 of the SEIA were not intended to represent the exact ecological conditions found at the project area but were used to show that reclamation of gold placer operations in cold climates similar to the project area can be successful. Slate River Mining received a 2002 award for outstanding placer mining reclamation practices at the Indian River gold placer mine.

5. *The SEIA fails to include a detailed mine development plan.*

At SEIA Volume I Section 1.5.2, the applicant asserts that “a detailed development plan for Big Bend has been prepared by WMMC in 2008 which includes start-up operations, a detailed drilling program and a block-by-block mining plan.”

That plan is not identified or presented elsewhere in the SEIA or SEMMP. The SEIA discussion of on-site drilling and mining activities fails to refer to or cite any detailed development plan. The failure to provide any site-specific development plan details and maps is a critical deficiency in the SEIA. The maps, aerial imagery, and schematic diagram used in the SEIA are too large scale and too generalized to provide details about specific locations in the proposed mine or specific activities in the proposed mine.

The failure of the SEIA to provide a detailed development plan results in the SEIA failing to any information that reflects detailed site-specific plan for mine development, mine operation or reclamation plan or and failure to provide the basis for Table I-2 “Annual Capital Expenditures.”

SEIA Figure III-2.13, the only attempt to show a geologic cross section of the proposed mine sites, fails to provide “ground control” or data from actual drill holes records at the site from either historic or recent exploration or development drilling as would be available were "a detailed development plan ... prepared by WMMC in 2008 which includes a detailed drilling program..." actually used in development of the SEIA. As noted below, the schematic diagram at Fig. III-2.13 fails to accurately identify the occurrence or distribution of ground water in the alluvial valley of the Tuul River where the BB GMP is proposed to operate. No information is provided to demonstrate the meaning or basis for the blue dashed line that appears an undeflected horizontal feature in Fig III-2.13 that may be intended to reflect a the ground water table - the piezometric surface – however that dashed line does not appear to show any effect of the topographic or geologic features identified on the schematic and does not show any seasonal variability reflecting high and low water conditions typical of rivers in Mongolia. Use of the detailed development plan including a detailed drilling program would provide verifiable site-specific data to support SEIA representations and assertions. The SEIA’s failure to use that detailed development and instead rely on “schematic diagram” of the site geologic, hydrologic and topographic as the sole representation of a cross-sectional view of the proposed mine site provide a strong basis for rejection of the SEIA as adequate for consideration as a thorough or complete environmental assessment or as a basis for a OPIC loan.

The lack of a reasonable or appropriate level of detail in the SEIA is further demonstrated by Fig III-2.14 which the SEIA calls “Dredge Blocks” which shows the proposed mine site at a scale of approximately 1:25000 while detailed mine plans are typically presented at a scale in the 1:200 – 1:1000 range. The SEIA fails to provide accurate cross-sections of these dredge blocks – the only cross-section provided is the schematic diagram at Fig III-2.13 - though red lines typical of those used on maps to indicate cross-sectional views are shown with explanation on Fig III-2.14.

RECOMMENDATION: The SEIA should be rejected as incomplete and inadequate for further review as result of its failure to include or utilize a detailed development plan for it description of the proposed project and assessment of environmental impacts. Future modification of the SEIA, if any, should be reviewed for the completeness of mine development, operation and reclamation plans, and associated budget, schedule, operating cost information based on a detailed plans included in the SEIA.

OPIC believes that the SEIA and SEMMP provide adequate information to evaluate potential social and environmental impacts for the Project. The general project description included in Part I of the SEIA describes the mining process, the current activities and the proposed activities of the Big Bend Placer Gold Mining Project. The SEIA project description does not present the extensive technical detail that was provided in the project Mine Plan, which was provided to the Mongolian Government for approval. The nature of the mine plan is to serve as a technical document for review and approval by technical mining staff of the Mongolian Government. The project SEIA is intended for review by the general public; therefore, mine activities are described in less detail but provide the necessary information for the evaluation of potential social and environmental impacts from the project.

The project was recently approved (in March of 2009) by and Independent Environmental Review Committee. For additional information regarding the review and approval of the SEIA and SEMMP see response 1.

The scale of the maps, aerial imagery and schematic diagrams follow this form of a non-technically reviewed document, whereby the scales and diagrams are displayed in a simple manner. However, exploratory drilling cross sections extracted from the Mongolian Mine Plan are available and can be provided upon request; these provide an illustration of real geotechnical data recovered from the site with more precise location maps.

In 2008, the Mine Plan and an Environmental Impact Assessment were submitted to the appropriate Mongolian Governmental authorities. Details concerning the mine development plan are provided in the Mine Plan approved by the Minerals and Oil Authority, which provides mining licenses for Mongolian mining projects. In March of 2009 the Mongolian EIA was approved by MNET.

The project has prepared a separate document entitled: “Assessment of Water Supply Sources for Mining Operations at the Big Bend Project” which provides geohydrologic details of the project area, with a focus on mine water control and potential impacts to groundwater. This document can be provided upon request; this assessment has also been provided to and accepted by MNET. WM Mining continues to work closely with MNET on the geohydrological and surface water management programs for the site.

Figure III.2-13 of the SEIA contains a generalized geologic cross-section of the shallow placer deposits. This schematic displays the typical geologic horizons in a river valley with alluvial and terrace placers with the blue dashed line representing a conceptual water level. Actual placer exploration lines and geologic cross sections can be provided upon request.

A significant number of exploration boreholes were drilled within the project area. Russian drilling exploration lines, using large diameter holes, were completed approximately 20 years ago. Ikh

Tokhoirol and Khan Resources Inc. drilled a number of exploration lines using smaller diameter holes. The holes are generally spaced 40 meters apart, with a 400-meter spacing between lines for mineral resource definition, and wider intervals for exploration drilling. The Mongolian Mine Plan provides the locations of the placer exploration lines and exploration borehole cross sections, which again can be provided upon request.

The “*Assessment of Water Supply Sources for Mining Operations at the Big Bend Project*” offers supplemental information regarding potential impacts to the Tuul River and the alluvial aquifer from the mining operations of the project, and alternatives to minimize impacts. Numerous localized surface-water and groundwater studies have been conducted at the Big Bend project site, including extensive monitoring by Soviet and Mongolian specialists. These studies were supplemented by surface-water studies performed by Tahoe-Baikal Institute specialists in 2001, and by AATA International, Inc. in 2002 and 2008. Data that have been collected include surface-water and groundwater levels, several single-well pumping tests, a multiple-well pumping test and a number of streamflow gauging events.

The Soviet Geological Exploration Unit (USSR) installed several monitoring wells in the Tuul River Basin and performed a number of single-well pumping tests in the project area from 1986 to 1988. The Darkhan Geological Exploration Unit (Mongolia) conducted further studies in 1988 to 1990, including multiple well pumping tests. Figures in the referenced *Assessment of Water Supply Sources for Mining Operations at the Big Bend Project* show the aerial extent of the alluvial aquifer and the monitoring/pumping wells to the southwest of the project area. A map showing the extent of the alluvial aquifer within the project area is provided in a study based on the 2004 geological exploration by Ikh Tokhiorol XXX .

Two separate studies, conducted by Soviet and Mongolian specialists from 1986 to 1990, monitored seasonal water level changes in the Tuul River and its alluvial aquifer. Locations of the stream gauging stations, monitoring well locations and hydrographs are displayed on figures within the study. To reduce or eliminate potential impacts to the alluvial aquifer or the Tuul River, WM Mining has evaluated the following attributes of the hydrogeologic system:

- aquifer saturated thickness;
- aquifer hydraulic conductivity;
- river bed leakage coefficient;
- aquifer specific yield; and
- well locations/distances from the river.

For the project a total of two pumping wells will be installed in the alluvial aquifer. These wells will be placed about 250 meters or more from each other to minimize communication between the two, and about 350 meters or farther from the river to eliminate induced infiltration from the river. The pumping rate at each well will be about 850 cubic meters per day. This well configuration and placement will ensure that the cone of depression (zone of influence) around these wells will be of limited extent and

will not deplete the alluvial aquifer, and that no induced infiltration from the Tuul River will take place.

The peak water demand for mining operations of the project will occur during construction of an initial dredge launch pond which will need to be excavated in the alluvial deposits and filled with water. The initial dimensions of the dredge launch pond required to start the dredging/mining operations are about 100 meters by 50 meters by 5 meters, equivalent to about 25,000 cubic meters. Due to a number of conservative assumptions, the actual amount of water from external sources (e.g., natural groundwater inflows into the pond) needed to fill up the dredge launch pond will likely be significantly less than 25,000 cubic meters. It is currently planned to fill the launch pond in about 15 days; an approximate pumping rate of about 1,700 cubic meters/day. Therefore, although the pumping wells will not directly influence existing flow in the Tuul River, for comparative purposes only the withdrawal rate from the alluvial aquifer would represent between 0.17 and 0.33% of the river's average monthly discharges during the April – May time period, when such activity would be conducted.

As the operations progress, the dredge launch pond will be excavated to a greater depth and the water level in the pond will be maintained at (or about) the water table level due to groundwater inflows from the alluvial aquifer. Minimal amounts, if any, of additional water from external sources will be needed to maintain the water level in the dredge pond. Groundwater from the alluvial aquifer will be used as the main water supply source for mining operations. It is estimated that, once in production, over 95 percent of the process water will come from recycling of previously used process water. Therefore, the most significant water demand will occur during the initial stages of the project, when the dredge launch pond is filled. It is this peak water demand at the project start-up that is used as the worst-case scenario in the assessment of the impacts to the Tuul River and the alluvial aquifer.

6. Baseline Environmental Information in the SEIA is deficient and fails to provide a summary of reasonable baseline of surface or ground water quality and quantity data at the proposed mine site.

The Applicant failed to conduct a long-term baseline data-gathering program in the development of the SEIA. Rather than investing in research necessary to compile a site specific data base describing baseline environmental conditions from a multi-year investigation of site conditions, the baseline environmental information in the SEIA relies almost exclusively on data gathered from an 11-day, July 10 – July 21, 2008, trip to Mongolia, and only a portion of which was spent in the project area and two other brief site visits in August and October 2008. The SEIA Application relies almost exclusively on the July 2008 trip for site specific data to characterize baseline conditions rather than systematic, multi-year studies of local conditions. The SEIA refers to a brief data efforts in 2002 related to a previous SEIA for the site no data gather during the 2002-2008 period when the mine leases were active or site investigation related to the detailed development plan if any, may have been conducted.

The lack of long-term, multi-year or seasonal data prevents the SEIA from using site-specific data to accurately identify seasonal variations or multi-year trends in environmental conditions at the site.

As result of lack of continuous baseline data compilation the SEIA has no information on seasonal or long-term surface water flow patterns in the Tuul River and merely reports flow conditions during sampling trips in July, August and October 2008, along with a historic report of Tuul River flow characteristics from 1989. As a result, the SEIA fails to provide a reasonable or useful baseline of surface water flow in the Tuul River in the area to be affected by the proposed mine. The SEIA fails to identify the surface flow variations related precipitation or spring melt-related peak flows. As a result, the SEIA does not present data to support the design and construction of mine components necessary to prevent impacts of floodwater flows on mine operations and reclamation activities. The SEIA fails to locate on a map or identify recent flow characteristics and water quality conditions at the small creeks and springs in the project area identified in Table III.2-8.

The SEIA provides an even more limited baseline regarding groundwater than surface water, acknowledging at Volume III – Section 2.4.2 that, “[o]verall, there is limited information on the local groundwater hydrology of the Project area.” This deficiency is particularly significant as groundwater flow and quality conditions are of fundamental importance to an environmental assessment of the proposed mine since: 1) all of proposed mine activities are proposed to occur in the alluvial valley of the Tuul River – see Figure III.2-10 - and 2) the dredge technology proposed relies on operation of dredge equipment floating in ponds filled with groundwater from the alluvial valley conditions.

The SEIA merely summarizes a groundwater information from a 1986 - 1989 study as seen in Figures III.2-8, III.2-9, III.2-11 and III.2-12 or Table III.2-10, among others but fails to update that 20-year old data with any recent information or data from the brief investigation trips in 2008. THE SEIA fails to provide any data from re-sampling of any of the data points in the pre-1990 study cited to identify changes in since that time.

The SEIA fails to report on surface or ground water quality sufficient for the comparison to ground or surface water protection criteria identified in either IFC performance guidelines or Mongolian regulatory standards.

The lack of information about groundwater occurrence and quality is typified, sadly, by Figure III.2-13 which fails to accurately identify the occurrence of ground water - or any water other than a “cartoon” version of the Tuul River - though the occurrence of groundwater is a fundamental part of the hydrology of an alluvial valley such as the alluvial valley of the Tuul River than is proposed for mining in the BB GMP SEIA.

RECOMMENDATION: *The SEIA should be rejected as incomplete and inadequate for further review as result of its failure to include a long-term – one-to-two-year minimum – baseline of surface and ground water flow and quality conditions and incorporate those conditions into the mine operation and mitigation plans.*

See Response 5. Again a detailed study: “Assessment of Water Supply Sources for Mining Operations of the Big Bend Project” has been prepared and is available upon request. During 2008, the baseline investigation team included specialists who covered all key disciplines: geology, soils, vegetation, wildlife, aquatic ecology, archaeology, limnology, water quality, fisheries, wetlands, socio-economics,

meteorology, health and safety, air quality, noise, historical and cultural resources, and other fields. All important physical, chemical, biological, social, and regulatory aspects have been covered in the SEIA and SEMMP.

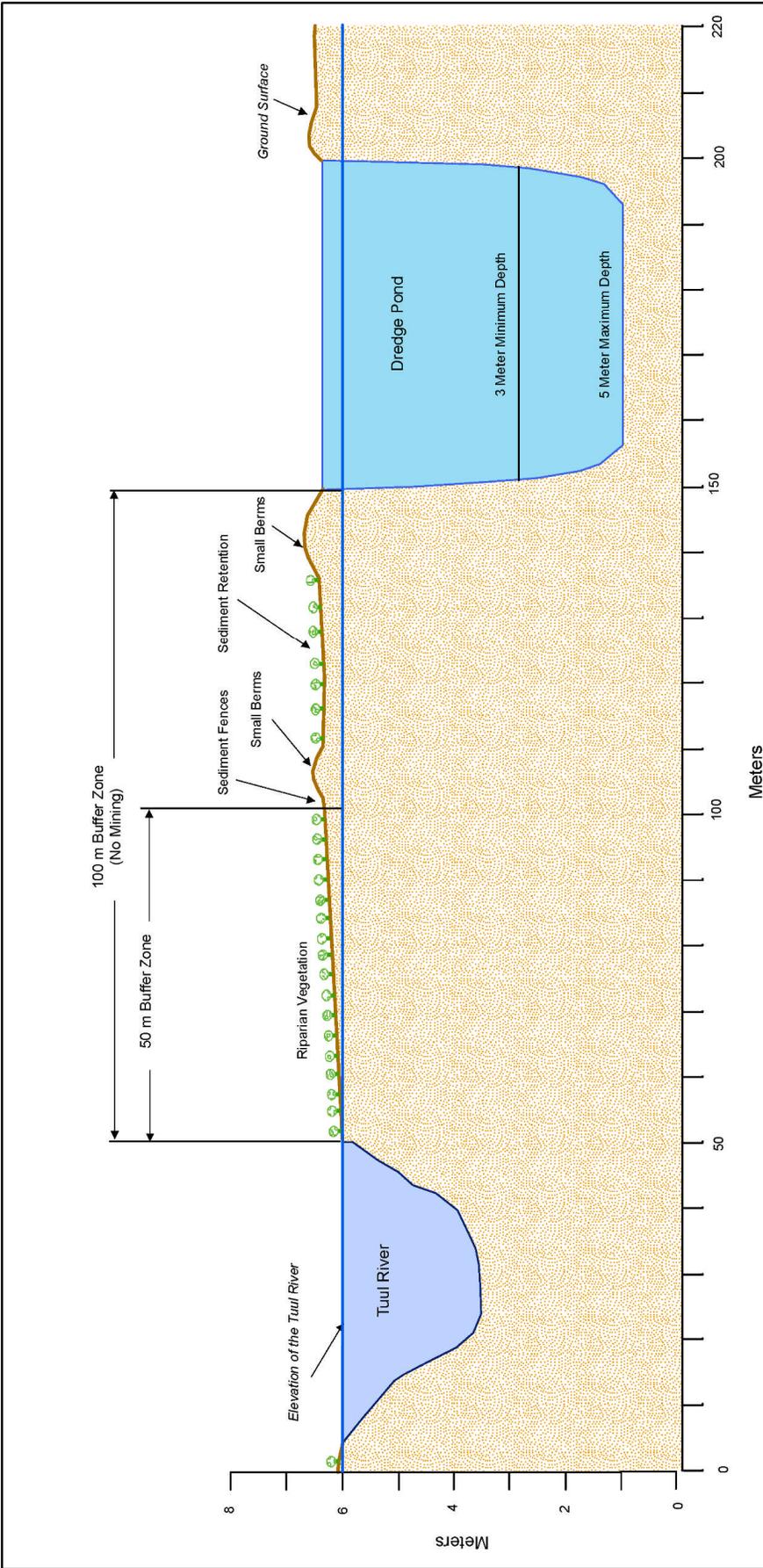
There is no requirement for multi-year baseline monitoring. The baseline monitoring of surface water, in particular, has included winter, summer, and fall seasons, during low-flow, high-flow, and frozen conditions. The fact that pre-existing mining operations in the region are having a demonstrable impact on suspended sediments in the Tuul River is well understood, documented, and an existing problem. As such, WM Mining has committed to minimizing if not eliminating hydrologic impacts through its project design, environmental controls and methodology. Modern environmental monitoring will be continued throughout the life of the project, including solid-state meteorological and hydrological measurement stations, and routine surface-water and groundwater monitoring.

Flow data have been collected to support the design and construction of mine components necessary to prevent impacts of floodwater flows on mine operations and reclamation activities. These data are presented in Section 2.3.1, Part III of the SEIA and the study referenced in Response 5. Small creeks and springs have been identified in the Tuul River watershed near the project area. The flow characteristics of these small creeks and springs is provided in Table III.2-8 and discussed in Section 2.3.2, Part III of the SEIA. In addition, a spring in the Khailaast Valley was observed and sampled in 2002. The results of this sampling are presented and discussed in Section 6.2.1.4, Part III of the SEIA.

Surface-water and groundwater quality results are presented and discussed in Section 6.2, Part III of the SEIA, including Table III.6-5 through Table III.6-20. These results are compared to Mongolian standards (as seen in Table III.6-11 and Table III.6-13 of the SEIA) and the US Environmental Protection Agency's aquatic life criteria.

Turbidity and total suspended sediment loads of the Tuul River were measured during a relatively wet period in 2008 to determine the nonpoint source sediment contributions from the project area resulting from non-reclaimed mining areas upstream and downstream of the project area. These measurements are shown and discussed in Section 6.2.1.8, Part III of the SEIA. The results indicate the need for much more management of non-point source sediment inputs (soil erosion and runoff) to limit sediment sources and contributions to the Tuul River.

To avoid or eliminate potential water quantity and quality impacts, several mitigation measures will be implemented. For instance, no mining will occur within 100 meters of the Tuul River proper and no chemicals will be used in the process. Additionally, more than 95 percent of the process water will be recycled from previous process water to minimize water consumption. Advanced erosion and sediment controls will be implemented to address turbidity and suspended sediment load concerns. Concurrent reclamation will reduce the amount of disturbed area prone to erosion. Exposed areas in front of the stripping dredge, the tailings, and exposed overburden/topsoil areas would be the most susceptible to erosion from floods. Small berms, sediment fencing and the 100-meter buffer will minimize erosion from flood waters as shown in the figure below.



Meters

WMM Mining Company, LLC

ADAMA INTERNATIONAL, INC.
Denver, Colorado, USA

Social and Environmental Impact Assessment
Big Bend Placer Gold Mining Project, Mongolia

FIGURE 6-2
Cross-Section Schematic of the Tuul River and Dredge Pond

Drawn By: HN
 Issued/Revised: Jan. 28, 2009
 Vertical Exaggeration 1:10

Legend

- Ground Surface
- Elevation of the Tuul River
- Dredge Pond
- Tuul River
- Riparian Vegetation

Potential indirect discharges may occur in the rare case of severe flooding of the Tuul River. However, as stated in the SEIA settling ponds and dredge ponds will be designed and constructed to ensure that there will be no uncontrolled discharge of any process water even during storm events. Also, as stated in the SEIA, in the unlikely case discharge to surface water drainage is required, water quality samples will be taken and analyzed before this release to ensure that discharged water quality is in conformance with all relevant and applicable standards. A monitoring program for surface water and groundwater is described in the Environmental Management and Monitoring Plan of the SEMMP.

Topsoil piles will be isolated from surface water drainages and the Tuul River by the use of modern sediment fencing, placement and engineering design. Topsoil piles will be engineered to generally have shallow slopes of 4:1 and rip-rap, terracing, and/or contouring may be used to further prevent erosion if necessary. The placement of the topsoil piles will be engineered to protect from major flood events and to encourage deposition of sediment rather than erosion. Surface water runoff from the topsoil piles will be diverted by vegetative buffer strips, sediment fencing, riprap and possibly other mitigation measures. In general, improving the health of the riparian vegetation along the Tuul River will aid in flood retention. By not allowing grazing on-site, willows and other riparian vegetation will be able to grow, which will stabilize banks and provide valuable habitat.

The camp, fuel depot, and all ancillary facilities will be outside of (higher in elevation than) the flood plain of the Tuul River. As shown in the figure, mining will be conducted in the floodplain and is protected from flooding using natural vegetation, silt fencing and small berms. All of the mining equipment is floating. Flood frequency and magnitude analysis will be updated as continuous monitoring of the Tuul River is conducted throughout the life of the project, using modern, solid-state hydrological monitoring equipment installed at the site.

- 7. The SEIA presents no information regarding the financial capacity or experience of the applicant necessary to design, manage the finances for or operate a placer gold mine in Mongolia or any experience operating a gold mine, a placer mine or successfully completing a reclamation plan for a surface or placer mine.***

The SEIA provides no information regarding the financial capacity or experience of the applicant necessary to design, manage the finances for or operate a placer gold mine. The SEIA fails to identify any experience by WM Mining LLC, its 100% owner – Wallace Mays, or WM Mining’s its 100%-owned Mongolian subsidiary, Ikh Tokhoirol XXK – see SEIA Fig.I-I.9 - related to operating a gold mine, operating a placer gold mine or successfully completing a reclamation plan for a surface or placer mine.

No information on the corporate structure or financial status of WM Mining, LLC is provided in the SEIA. References to Wallace Mays’ mining experience readily available on the Internet appears to be limited to uranium properties except for references to litigation vs. Khan Resources related to the Big Bend gold mine licenses.

RECOMMENDATION: The SEIA should be rejected as incomplete and inadequate for further review until a revised version identifying the placer gold mine operating

experience and placer gold mine reclamation completion experience of the applicant and its subsidiaries or parent companies.

Corporate structure and financial information for WM Mining has been provided to OPIC. The corporate structure for the company is located in Section 2.0 of Part I of the SEIA. The mining licenses of the project are held by Ikh Tokhiorol XXK (ITK), a 100-percent-owned subsidiary of WM Mining. ITK is a limited liability company organized under the laws of Mongolia. WM Mining Corporation will be the sponsor and operator of the project.

WM Mining and its management have operated the Berleg Placer Gold Mine in Mongolia for four years and successfully reclaimed portions of that mine. The Chief Geologist for WM Mining has 20 years of experience of exploring, defining, and directing the planning for many placer gold mines in Mongolia. His PhD dissertation at St. Petersburg Technical University was on the Zaamar Placer Deposit. He served many years as the Director of Geology for Mongolia when all mining was managed by the Mongolian Government. Gerrit Bazuin has more than 28 years as a degreed Engineer operating and managing dredges and placer mines in many parts of the world, including China, Indonesia and Mongolia. Mr. Bazuin has more than 8 years experience with placer gold mining in Mongolia.

Mr. Wallace Mays has developed eight in-situ uranium mines in the US, and has managed three uranium mining companies, including Everest Exploration, Energy Fuels Nuclear, and Uranium Resources. WM Mining has operated the Dornod Uranium Mine in Mongolia and the Haraat In-Situ Mine.

Mr. Mays has reclaimed five in-situ uranium mines in Texas, including groundwater and surface reclamation. Mr. Mays has assisted in financing a US\$500 million IPO to develop three very large in-situ Mines in Kazakhstan and successfully developed them each property. The successful financing and managing of a variety of mines in a variety of countries, including Mongolia, where Mr. Mays has financed and operated the Dornod, Haraat, and Berleg Mines, demonstrates that Mr. Mays and his team are qualified to develop and manage the Big Bend Placer Gold Mining Project. Mr. Mays is known among his peers as a principal developer of in-situ mining technology and techniques and has several patents to his credit. Mr. Mays financed and managed the reclamation of the Pawnee, Lamprecht and Zamzow in-situ uranium mines under contract. In the US, Mr. Mays is a recognized expert in uranium mining and uranium mining environmental areas by the International Atomic Energy Agency.

8. The SEIA would allow gold placer mining in last portion of the floodplain of the Tuul River in Zaamar Soum not yet affected by placer mining to be conducted by a company with no demonstrated experience successfully reclaiming such a mine.

As Figures I.1-3 and III.4-3, shows, the site of the proposed Big Bend Gold Mining Project is the last unmined portion of the Tuul River alluvial valley in the Zaamar area. No successful reclamation of gold placer mining operations in the Tuul River is identified in the SEIA or in the experience of WM Mining and its 100% owned Mongolian subsidiary.

The lack of experience reclaiming alluvial valleys affected by gold mining by either Mongolian mining companies or the application undercuts the unsupported assertions of

the applicant that its operation and its capacity to reclaim its operation will be fundamentally different that that experience in the Tuul River valley since 1990. Mining in the Tuul River since 1990 has devastated a stream system, surrounding riparian area and a traditional livestock-raising indigenous population.

The SEIA provides no indication that the applicant has the capacity to attain the conceptual reclamation and restoration goal identified in the SEIA. The failure to identify statistically reliable, detailed, long-term baseline of environmental conditions in the area proposed for mining prevents effective enforcement of environmental standards that rely on pre-mining environmental data to determine attainment of performance standards.

RECOMMENDATION: The SEIA should be rejected due to the devastating impact that gold mining has had on the Tuul River alluvial valley and the lack of a demonstration that the proposed mine operator has the technical experience or financial capacity to prevent long-term damage to the last unmined portion of Tuul River alluvial valley in Zaamar Soum.

There are more than 100 kilometers of untouched Tuul River floodplain in Zaamar Soum, and the Tuul River occurs both upstream and downstream of the Zaamar area as well. As discussed in the response to Comment Number 7, WM Mining has successfully reclaimed mines much more complicated than the Big Bend Placer Gold Mining Project.

Other Mongolian companies have started rehabilitating historical mining impacts. In 2004, the Mongolian enterprise Monpolymet Ltd became the first Zaamar placer company to replace topsoil and attempt proper revegetation, albeit importing the soil, as the original topsoil had been lost by failure to strip and store it. In 2005, both Shijiir Alt Ltd and Altan Dornod Mongol Ltd started basic recontouring of two of the worst derelict mining sites in the Zaamar goldfield, namely the south dredge area and the ruined Hailaast Valley.

As previously discussed, Altan Dornod is the only Mongolian placer mining operation to institute comprehensive reclamation in the area, on a tributary to the Tuul River, and under direct order from the Mongolian Government. This reclamation can be observed to have been effectively instituted, with contouring, drainage control, sediment control, and natural revegetation.

The Big Bend Project anticipates engaging many advanced reclamation techniques, including customized hydroseeding, the first known application in Mongolia. The reclamation planning has taken full consideration of the physical, chemical, biological, and social conditions occurring at the site. The financial capacity and experience of WM Mining and its subsidiary, Ikh Tokhoirol LLC, to successfully design, manage and finance the operation and reclamation of the Project are discussed in the Response to Comment 7.

In the long term, WM Mining will reclaim the Project area to a higher level of environmental integrity, as an ecological preserve with enhanced riparian, wetland, open water and upland pasture values. To accomplish this level of reclamation, WM Mining is committed to a serious improvement of the current environmental and social regional mining legacy. While this may not be previously demonstrated in the area, WM Mining and its associates will apply their comprehensive knowledge

and skills, operate in a financially responsible manner and utilize modern technology to achieve this high industrial standard, which will set an example for responsible wet placer mining in the region.