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## **Review of Alexco's Keno District Mine Operations' Reclamation and Closure Plan Revision 4 and Preparation of Independent Closure Cost Estimates for 3 Milestone Dates**

### **EXECUTIVE SUMMARY**

SteveJan Consultants (SJCI) has prepared this review memorandum along with independent closure cost estimates for the current mine developments at the Keno Hill District. Keno Hill Silver District Mining Operations (KHSDMO) has recently submitted an updated liability cost estimate as required in the Company's Quartz Mining License QML-0009.

The mine projects are located within the former Keno Hill mining region near the hamlet of Keno City, in north-central Yukon. The project area is located approximately 45 km. east of the settlement of Mayo. The Bellekeno Mine was the first mine to be brought back into commercial production in January 2011 within the Keno Hill district. The area is continuing to be actively explored by KHSDMO for possible further mine developments. Operations at the site have been suspended since August 2013.

The focus of this review is to consider changes in the updated Reclamation and Closure Plan for the site between the most recent version (Revision 4 dated June 2015) and the previous version (Revision 3 dated April 2015) but mainly to note changes in the closure cost estimates. The RCP deals with the site closure liability at 3 milestone dates; currently, out 2 years and at the end of mine life.

SJCI was previously involved in reviewing earlier versions of the Preliminary Reclamation and Closure Plan (RCP). The previous submission for the Keno Hill District Mine Operations was in October 2014 and was considered to be Version 3 update. It was reviewed by SJCI in a report dated April 2015. A teleconference meeting was held between the parties on May 6, 2015. Subsequently, AKHM issued RCP Rev4 dated June 2015 to YG EMR on June 22, 2015 for their review. SJCI was forwarded a copy of the report for review shortly thereafter.

YG EMR currently holds financial security of \$4.173M for the site, in a letter dated July 26, 2013. The security level is based on RCP Version 2 and an associated liability cost estimate in a SJCI report to EMR in September 2012.

A review of the latest update of the RCP (Version 4) has been found additional supporting details to the proposed closure plan to those previously provided. More detail would be beneficial in raising the accuracy of the closure plan from conceptual to comprehensive. However, it is

realized that the mining operation has been closed for almost 2 years (i.e., since August 2013) and resources for planning and detailing mining as well as closure plans can be very difficult. This report finds the latest RCP does not conform to the August 2013 Guidance document from the Yukon Water Board (YWB) & Yukon EMR (Yukon 2013a) in a number of areas. It is due primarily to the lack of development of detail and support information in the latest RCP.

In addition the RCP relies on work done previously at the closed and significantly reclaimed Brewery Creek minesite on various aspects (e.g., cover recipes, revegetation seed mix, etc.) and on-going or planned work at the wider historic Keno Hill District that is being undertaken and funded by a tri-party to provide detailed information on closure components for the Keno Hill Silver District Mining Operations. A number of the initiatives for detailing the individual closure components of the entire district are on hold or have not been initiated. However, KHSDMO is responsible to design closure components specific to its own developments. This is regardless of the timing of the district wide closure plan being developed which needs to be considered a different project for the purposes of developing and costing a mine closure plan for the Keno Hill operations for the Yukon Government to establish a reasonable but conservative financial security for the site.

SJCI finds the estimated total closure liability estimate for the KHSDMO project at the three milestones to be \$8.30M, \$8.76M, and \$9.51M for the Current, Year 2, and End of Mine milestone dates. The previous liability cost estimate by SJCI for the current site was found to be \$9.03M as of April 2015.

The cost estimates proposed in the RCP Ver4 report are \$4.78M, \$5.13M, and \$5.60M for the same milestones, respectively.

A number of elements contribute to the differences in the closure cost estimates prepared by KHSDMO and SJCI. The major sources of differences between the RCP and this report are outlined in this review memorandum.

## 1. INTRODUCTION

### 1.1 Overview

SJCI has been involved in reviewing KHDSMO's reclamation and closure plans and in the preparation of a number of closure cost estimates for the Yukon Government's Department of Energy, Mines and Resources (YG EMR) during mine exploration work on the Bellekeno site, then mine operations associated with that deposit and now with consideration of the nearby Flame and Moth deposits as well as the larger Keno Hill district and all of its historic mines.

Alexco Keno Hill Mining Corp (AKHM) commissioned the Bellekeno mine and mill in December of 2010 and in January 2011 commercial production was achieved. Subsequent expansions have added additional ore bodies. The mine currently holds a Type A Water License from the Yukon Water Board (QZ09-092) and a Quartz Mining License (QML-0009) from the YG EMR.

This report was prepared for the account of the Yukon Government. SJCI is not responsible for any use of the materials within this report by any other party without the express written authorization of SJCI and YG.

### 1.2 Methodology Used in Conducting Review

The following points summarize the methodology used:

- A review of the KHDSMO project was undertaken as a desktop exercise with information provided in the most recent Reclamation and Closure Plan and accompanying cost estimate reports for Current, Year2 and End of Mine (EOM) milestone dates submitted by KHDSMO, as listed in the next section;
- Follow-up information on the status on the Company's in-situ treatment system demonstration for the Bellekeno Mine provided in a letter to Robert Holmes-YG EMR from Brad Thrall-Alexco, dated October 7, 2015. An as-built report and operating manual is to be issued to YG by the end of November 2015, according to the letter;
- A comparison of the most recent RCP components to those proposed in earlier RCPs;
- Where considered appropriate, detailed costing numbers from the previous SJCI review and the detailed costing tables for the current milestone (April 1, 2015 review report) prepared for YG EMR were utilized and inserted into the appropriate costing tables provided in the RCP;
- Components provided in the RCP were compared against those specified in the Yukon Guidance document (Yukon 2013a) and directives by Yukon EMR;
- The costing tables provided in the RCP were utilized in this review as a template for this independent costing, to simplify comparison. Changes made where considered appropriate by the author;
- The previous SJCI closure cost estimate reports (esp SJCI 2015) covering the 3 milestone dates were used to assist in preparation of the closure cost estimates for this report; and
- The author's familiarity with the site based on several historical site visits including the most recent one in September 2015 and previously July 2012.

This report provides a comparison between Version 4 and Version 3 of the RCP. AKHM was asked to update Version 3 after a joint teleconference on May 6, 2015 at which additional information was provided that would affect what should be costed in the closure cost estimate.

A first draft version of this report was issued in July of this year. Subsequently, the author visited the site in September which provided valuable current information but also led to the author requesting additional information from the Company. Follow-up information was received from the Company which enabled several changes to this report. Importantly, a letter was received concerning the support from the authorities overseeing the district-wide closure plan for the proposed in-situ treatment of a number of the mines being decommissioned which provides higher confidence to this process also working for the Bellekeno Mine. This has allowed for the lowering of provisions in this report for supplemental active water treatment.

### **1.3 Primary Reference Materials Utilized**

The following reports and documents were utilized in preparing this report:

- *Reclamation and Closure Plan-Keno District Mine Operations-Keno Hill Silver District Revision 4 and Appendices*, by AKHM, dated June 2015
- *AANDC 2015. Letter of Support*, attached to back of AANDC untitled letter dated September 23, 2014, addressed to Ms. Shirley Abercrombie-A/Deputy Minister-Government of Yukon Energy, Mines and Resources and Chief Ed Champion-First Nation of Na-Cho Nyak Dun, from Dionne Savill-Regional Director General AANDC and Clynt Nauman-President and CEO Alexco Resource Group, *Letter of Support* signed by George Ross-Deputy Minister-Government of Yukon Energy, Mines and Resources on February 15, 2015 and Chief Ed Champion-First Nation of Na-Cho Nyak Dun on January 8, 2015
- *Quartz Mining License QML-0009*, issued by R. Holmes- Director of Energy, Mines and Resources-Mineral Resources Branch, dated January 25, 2013
- *Type A Water License QZ09-092*, issued by Yukon Water Board, last amended (first amendment) May 2013

### **1.4 Background to Financial Security Determinations**

Currently, security for the project as required by the Yukon Government is set at \$4.173M, all held under the *Quartz Mine Act*. There is currently no requirement for security under the *Waters Act*.

A letter dated July 26, 2013 from YG EMR to AKHM re-stated the requirement for an updated RCP to be submitted for review and approval by January 25, 2015. That requirement was met with the issuance of Version 3 of the RCP dated April 2015.

### **1.5 General Comments on Deficiencies in Submitted Reclamation and Closure Plan**

The text in the RCP, most specifically Section 7 discusses the closure tasks in a general manner, but without any specific numbers, and notably none of the numbers that are used in the costing tables for those closure tasks.

There appears to minimal linkage between the text in the report and the numbers and work effort in the costing tables.

Each of the sub-sections in the costing tables should include reference to the appropriate section of the RCP where rationale, detailed assumptions and supporting information (and numbers and how they were determined) can be found.

## **1.6 Differences Between Versions 3 and 4 of Reclamation and Closure Plan**

Revision 4 includes a number of minor changes to the text of the report, several additional appendices with support information and a number of changes to the closure cost tables, most notably the inclusion of tables for 1) Interim Care and Maintenance and 2) Mobilization & Demobilization for the mine closure. A number of the changes were the direct result of the teleconference held between EMR (with its consultant from SJCI) and AKHM (and its consultant from Access Consulting). At that time it was agreed that AKHM would re-issue the RCP (as Revision 4) and incorporate the agreed to points from the teleconference, and that SJCI would then review the revised RCP and issue a revised closure cost estimate report. This report fulfills that requirement.

## **2 CHANGES IN KHSDMO MINE PLAN AND CLOSURE PLANNING**

The Company continues to utilize a 15% contingency allowance for the overall costing versus 25% utilized by the author in this and previous versions of the RCP. SJCI considers the higher number to be appropriate due to the continuing preliminary nature of the Plan and uncertainties with it.

It is understood from Alexco that a number of aspects of Bellekeno, Lucky Queen, Onek and Flame and Moth mine closures may overlap with implementation of a district-wide closure plan that falls under a separate Subsidiary Agreement and will require negotiation with AANDC and YG regarding terrestrial liabilities. Based on information provided to SJCI by YG, the district wide closure plan that has had several deadline extensions has not yet been submitted. It is the author's opinion that until an approved district wide plan is in place, the R&C Plan for the current mine developments (i.e., KHSDMO mine production units) needs to include sufficiently detailed plans for someone to be able to implement a closure of just those facilities, if so required. In addition, certain areas where the historic versus current responsibility for the areas reclamation is uncertain (i.e., AANDC & YG versus KHSDMO) should remain in the closure plan for the currently operating sites. And the R&C Plan should not rely on closure of all the entire historic mine areas to deal with closing the KHSDMO mine developments (i.e., Bellekeno, Lucky Queen, Onek, and Flame and Moth) as a part of it. The 'production unit' projects should be kept separate and financially secured separately to the full extent possible.

## **3. BASIC ASSUMPTIONS AND OUTLINES OF CLOSURE WORK TASKS FOR DETERMINING COST ESTIMATES**

### **3.1 Equipment Rates**

The SJCI rates are almost identical to those used in the April 2015 review reports with some minor updating based on professional experience. Pricing continues to be based primarily on available unit rates in the Yukon Third Party Equipment Rental Rates 2015 (online version) which is published by Yukon Highways and Public Works and updated annually.

#### **3.1.2 Closure Monitoring Program**

The Bellekeno site currently has a Class A Water Use License (QZ09-092) for the mine and associated facilities. The License has an expiry date of August 1, 2020. A detailed monitoring program is set out in the License.

The SJCI costing utilized the License as well as the tables provided in the RCP. KHSDMO incorporates reductions in the sampling load with the anticipation that the Company/Receiver would likely apply for an amendment to the License once loadings from the sites had dropped to pre-approved long-term (post-closure) values.

### **3.1.3 Bellekeno 625 Water Treatment Costs**

The latest RCP provides no provision for continued operation of the Water Treatment Plant through the Active Closure and Post-Closure phases. It shows a transition to a passive system.

This review includes a provision of operation of the WTP for a period of 1 year post closure, as well as continued active water treatment through the Interim Care and Maintenance period. This position is based significantly on the reliance on the same basic in-situ bio-treatment at the Bellekeno Mine as has been approved by the authorities for the other mines in the Keno District. Previous cost estimate reports by SJCI have included 2 additional years of post-closure active water treatment.

## **3.2 Major Assumptions**

The following major assumptions were utilized in preparation of the detailed cost estimate tables:

- There are no additional monitoring requirements under the two primary licenses for the project, those being QML-0009 and WL QZ09-092, to those costed in the 2013 review reports by SJCI;
- The costing estimates assume the use of a third-party contractor to undertake the specified work. It is understood that Alexco (through its wholly owned subsidiary ERDC) is currently working in the area on a multi-year care and maintenance contract of all the Keno Hill area mines for Canada. But for the purposes of this costing report they are considered to be out of the picture (possibly insolvent) and therefore not able to undertake the closure works on the Keno Mine Operations project while maintaining their work in the district for Canada. Another contractor that is not necessarily established and working in the area will be required for closure of the Bellekeno, Lucky Queen, Onek and Flame and Moth mines and shared infrastructure. The same contractor may or may not be undertaking the district-wide C&M program;
- Unit costs are based on previously utilized quantities, unit cost rates and lump sum cost estimates used in previous reports as well as generally accepted equipment unit rates from the Yukon Third Party Equipment Rental Rates publication (2015) with costs adjusted at the discretion of the author;
- Post-closure water treatment of site waters will consist of underground in-situ (in-mine pool) treatment, active portal & DSTF discharge treatment and two passive treatment systems (at BK-625 and Flame & Moth). One year of active treatment is considered reasonable prior to a conversion to passive treatment. A longer period of active treatment was considered but is considered Unlikely to be required due to progress advancing this technology including in the adjacent district-wide mines and was therefore dropped;
- Equipment and personnel Mob and Demob charges as well as Interim Care and Maintenance costs (for the period of time between mine closure and Yukon Government

- being able to start site reclamation work, here estimated as 2 years) were added in conformance with the Yukon Guidelines document (Yukon 2013a);
- No credit was given for the possible sale of site assets, consistent with the Yukon Guidelines document (Yukon 2013a);
  - Other costs sometimes considered part of a broader General and Administration cost center (e.g., contractor profits, insurances, bonding, permitting, licensing, taxes, etc.) have not been included. However, a 15% across the board provision for indirect costs as included in the RCP has been accepted as reasonable;
  - For all three milestone dates, the major portion of the anticipated closure work will be undertaken over two summer seasons (each one estimated to be 7 months long). A number of tasks will continue year-round including minewater treatment from B-625 and the F&M mill area as required, and site monitoring and maintenance. In addition, the monitoring and maintenance tasks are planned to extend for 10 years after completion of the active mine closure phase (i.e., 12 years after commencement of mine closure work). A number of other tasks will extend for several additional years beyond the active closure phase;
  - A Subsidiary Agreement is in place between Canada and ERDC for the reclamation of the historic Keno Hill mine workings which includes the Bellekeno site and on-going water treatment from its discharge to surface. It is understood that when Alexco “declared a production unit” of the Bellekeno site a number of responsibilities transferred from Canada to Alexco and thus to YG. However, a number of sites are understood to remain with the federal government. The author is not familiar with the details of the agreement but incorporated suggested responsibilities as outlined in AKHM’s last R&C Plan and those that were stated in conversations with Alexco and YG staff in the course of preparing earlier liability cost estimate reports on the project. A number of terrestrial disturbances which had previously been left for discussion with AANDC and YG concerning ultimate liability have now been shifted to KHSDMO now that the mine is in production;
  - The approach taken by SJCI is conservative as is considered appropriate due to the role of the Yukon Government’s Department of Energy, Mines and Resources being the lead regulatory agency overseeing the project and being responsible for setting appropriate securities; and
  - A contingency of 25% has been added to cover the uncertainty of the components and the lack of details on the individual elements required to undertake the specified work. This is the same contingency allowance as was added in previous SJCI estimate of site closure liability. Its larger size (relative to RCP use of 15% number) is due to the extent of uncertainties that surround the current conceptual closure plan, and its continued lack of detailed supporting information on the plan’s specifics. It was calculated on the Total Closure Costs before any Mitigative Contingencies were considered. However, the estimated cost for implementing the compliance monitoring and reporting and maintenance items (Table 11) has had only a 10% contingency added due to the relative firmness of the established monitoring program (as per Water License), historic unit pricing and minor anticipated post-closure maintenance requirements. The RCP has included a 12.5% contingency allowance on the Compliance Monitoring and Reporting and Maintenance table.

The above assumptions are consistent with those utilized in other mine closure cost estimates prepared for YG EMR by SJCI.

## **4 ASSUMPTIONS & COSTING DETAILS**

The detailed cost tables are provided in the Appendix section which is attached to the end of this report.

This cost estimate report for the Current Site considers the project as of mid-2015. Year 2 is year-end 2016, and End-of-Mine is year-end 2020. Net Present Value calculations have been undertaken on the post-closure costs, using the same templates and assumptions provided in the AKHM costing tables.

The following section provides information in support of the cost estimates that were revised from the previous SJCI review report (April 2015) and the latest RCP (Rev 4) costing tables, under the worksheet tabs that represent the various mine areas headings utilized.

### **4.1 General and Administration**

No substantive changes were made to this section.

### **4.2 Waste Rock Dumps, Quarries & Storage Facilities**

No substantive changes were made to this section.

### **4.3 Underground Mines**

A number of individual line items have been adjusted based on additional information provided in the latest RCP as well as the joint teleconference.

This includes adjustments (i.e., reductions) to areas that will require closure and reclamation based on the current LOM Plan for the mine.

In addition, several minor changes were made where considered appropriate.

### **4.4 Water and Solutions Management**

Costing has also been provided for implementing AKHM's proposed passive biological infiltration galleries for treating future minewater at the reconfigured BK-625 and at Mill Ponds. SJCI continues to include a provision for their operation for 10 years.

A provision has also been included for in-mine pool treatment at the Flame & Moth mine which the RCP costing table states is included in the P-C C&M costing sheet but was not found by the author.

Otherwise, only minor changes were made where considered appropriate.

### **4.5 Dry Stack Tailings Facility**

By default, KHSDMO's surface areas for the DSTFs at the three milestone dates have been accepted.

The provision for the addition of a capillary break between the tailings and cover material has been removed in this updated cost estimate based on new information provided in the RCP and a

review of closure covers being proposed for other DSTFs. However, the author continues to provide for a 0.5m thick cover versus the 0.25m thick cover proposed in the RCP. A 0.5m thick cover is considered the minimum and therefore the volume in the costing table have been adjusted accordingly. The 0.5m thickness continues to be used throughout documentation and studies being undertaken by the Company, as evidenced in the RCP and its appendices.

The current recipe for the cover material is considered a first estimate and conceptual. Detailed work is required to determine the optimal recipe with the materials available in the area of the site, and specified closure performance criteria. The RCP includes an Appendix that includes a Memorandum from Alexco which provides general information about the initial test plots set up in 2012. But no follow-up monitoring results nor discussion of results have been seen. A provision for undertaking such additional studies has therefore been included in the Supporting Studies table (Table 10).

The date of transitioning from the current DSTF to a new larger adjacent facility is not specified in the RCP. However, this review considers it to take place between the Yr2 and EOM milestones.

A provision has been added for construction of a toe berm to surround the downstream toe of the new DSTF as per the RCP (i.e., text Sec. 7.3.4.2 and Figure 7-29). It has been added only the EOM milestone, as it has been assumed the current facility has sufficient capacity to contain the tailings up to the Yr2 milestone.

#### **4.6 Mill and Infrastructure / Facilities**

No substantive changes were made to this section.

#### **4.6 Haulage and Access Roads**

By default, the Company's estimates of the lengths of the various roads have been accepted in this review.

The exact separation of which roads are considered part of AKHM's production unit mine areas and which remain part of the district-wide network of roads used for accessing other areas of the district continues to be unclear, and as stated above the author has accepted the breakdown of responsibilities as provided in the RCP.

No substantive changes were made to this section.

#### **4.8 Supporting Studies**

Several line items for cost estimates for future studies have been reduced in this review report. This was based on work the Company has undertaken in the areas of passive treatment and on-going reclamation and closure research work. One outstanding study is that demonstrating long-term effectiveness of the currently installed cover over the DSTF, which may or may not be underway but no such work has been seen by the author.

#### **4.9 Post-Closure Care, Maintenance and Monitoring**

No substantive changes were made to this section.

#### **4.10 Interim Care and Maintenance**

No substantive changes were made to this section.

#### **4.11 Mobilization and Demobilization**

No substantive changes were made to this section.

### **5. CONTINGENCIES**

#### **5.1 Mitigative Contingencies**

A number of additional closure activities may be required that have not been previously considered.

Final closure of the site will primarily involve activities that are of a low to medium risk and the need for additional mitigative measures to deal with them is considered to be Unlikely. Only risks that are considered Probable or Possible have been considered further in this evaluation.

No risks were considered to currently fall into those higher categories. A previously included mitigative contingency for an additional 2 years of active treatment of BK-625 (beyond the 1 year provided for in this review) has been removed due to the confidence in the Company's plans for several levels of redundant passive systems of water treatment, and a reasonably sized contingency allowance.

#### **5.2 Contingency Allowance**

A contingency factor has been included for the possibility that implementation of the closure plan tasks may involve additional costs than were estimated during this first-order cost estimate. This is based on the uncertainty of what the final installed features will consist of, the uncertainty in determining the exact work tasks required for the closure and the uncertainty in estimating their quantities and unit costs. Better defined work components for all the closure tasks would reduce this uncertainty. For the above reasons a contingency allowance of 25% was added to the final sub-total cost (as in previous review reports of the site by SJCI), with the exception of post-closure compliance monitoring, maintenance and reporting which was assigned a 10% contingency.

### **6. CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1 Conclusions**

The review finds the most recent Reclamation and Closure Plan is an improvement to Revision 3 of the RCP. However, it continues to lack details, reviews of alternatives and plans as well as detailed support information to demonstrate its understanding of the site, selection of the optimal closure options and from it to be able to provide a comprehensive closure plan.

This report provides a first-order liability cost estimate for the current Bellekeno, Onek, Lucky Queen, and proposed Flame and Moth mines and their supporting infrastructure.

The liability cost estimates for final closure were found to be \$8.30M, \$8.76M and \$9.51M for the Current, Year 2 (2016) and End-of-Mine (2024) milestone dates, including a 25% contingency on most of the closure cost items.

The previous SJCI closure cost estimate from April 2015 for the Current mine based on Revision 3 of the RCP was \$9.03M.

As a comparison, the latest RCP from June 2015 by the Company estimates the closure liabilities at \$4.78M, \$5.13M and \$5.60M for the Current, Year 2 and EOM milestones. The previous AKHM estimates were \$3.36M, \$3.79 and \$4.20M for the same milestones, as of October 2014.

The largest contributors to the differences in the cost estimates in this review report and the RCP are:

- The inclusion in this review of provisions for active water treatment for 1 full year after cessation of mining operations, versus none by AKHM;
- Differences in duration of an Interim Care and Maintenance period, the time between the mine ceasing operation and physical active work beginning:
  - This review proposes it to be 2 years in duration, versus the 1 year by AKHM;
  - The author proposes full time active water treatment at BK-625 during the 2-year IC&M period, whereas AKHM proposes 6 months of active treatment; and
  - This report proposes manned site coverage 24/7 versus 1 person at 20% of full-time proposed by AKHM;
- The use of a 25% overall contingency allowance versus the 15% used by the Company;
- Several differences in the unit rates used;
- Differences in the estimated work effort to undertake a number of the closure tasks; and
- A number of additional closure associated tasks are included in this review report; one example is the inclusion of a toe berm below the proposed expansion DSTF

## **6.2 Recommendations**

### **6.2.1 Preparation of More Comprehensive RCP**

In conformance with the 2013 Yukon Guidelines document (2013a) and with the continuing site presence the RCP should be more detailed than it is currently, as presented in the RCP. This is the Company's fourth Reclamation and Closure Plan (or 5<sup>th</sup> if the 2013 Security Estimate letter report is considered) since operations began, and as a result more progress is to be expected in detailing the closure plan, with detailed supporting information, rationale for selecting the options chosen and consideration of alternatives. Relevant directives, policies and the guidance document provide information on what is required.

Numbers used in the costing tables need to be supported by rationale and details in the text of the RCP report.

### **6.2.2 Other Site Initiatives**

An as-built report and operating manual on the in-situ mine treatment system demonstration project is due to be issued to YG by the end of November 2015.

The Company should implement the demonstration in-situ treatment system in the underground Bellekeno Mine and provide monitoring results on its performance as soon as practicable. Pending favorable results, reductions in the need to include provision for active treatment during the transition (IC&M) period as well as into the Post-Closure period could be possible.

Similarly, continued testing and evaluations of cover performance on the DSTF would be useful to confirm the optimal cover material, its thickness and characteristics as well as the vegetation recipe and results of tests of various vegetation recipes on site test plots.

## **REFERENCES**

Yukon 2013a, *Reclamation and Closure Planning for Quartz Mining Projects-Plan requirements and closure costing guidance*, by Yukon Water Board & Yukon Energy, Mines and Resources, dated August 2013

## **APPENDIX**

### **Keno Hill Silver District Mine Operations Reclamation and Closure at 3 Milestone Dates**

#### **Liability Cost Estimate – Detailed Costing Sheets**