11.0 CONCLUSIONS

In this report, Stantec Consulting Ltd. has documented the results of its environmental impact assessment (EIA) of the Sisson Project, an open pit tungsten-molybdenum mine project proposed by Sisson Mines Ltd. (SML) near Napadogan, in central New Brunswick. The elements of the Project and the activities that will be carried out as part of it have been described, and among other things, the potential environmental effects of the Project (including cumulative environmental effects) have been assessed to meet the requirements of the *Canadian Environmental Assessment Act* (*CEAA*) and the New Brunswick *Environmental Impact Assessment Regulation–Clean Environment Act.*

In accordance with the requirements of *CEAA* and the New Brunswick *Environmental Impact Assessment Regulation–Clean Environment Act,* the provincial Final Guidelines for the Environmental Impact Assessment (EIA) (NBENV 2009), and the Terms of Reference (Stantec 2012a) that also serve as EIA Guidelines under *CEAA*, this EIA Report has included a discussion and assessment of the following elements.

- Following some introductory context, a discussion of the planning of the Project was provided, including a brief overview of the worldwide supply and demand for tungsten and molybdenum, the purpose/rationale/need for the Project and alternatives to it, and project planning and management strategies that will be implemented as part of the Project to manage its environmental effects.

- A detailed Project Description of the proposed elements of the Sisson Project was provided, including the consideration of alternative means of carrying out the Project, and a discussion of how the Project will be constructed, operated, and ultimately decommissioned, reclaimed and closed at the end of its life. Project-related aspects including emissions and wastes, transportation requirements, and employment and expenditure during all Project phases were also described.

- The applicable regulatory framework to the federal and provincial EIA of the Project was described, including the regulatory requirements for the EIA, the scope of the Project and the scope of the EIA, a summary of public, stakeholder, and Aboriginal engagement activities conducted and issues and concerns arising from them, and other matters relevant to the scoping of the EIA. Valued environmental components (VECs) that form the basis of the environmental effects assessment of the Project were selected on the basis of the defined scope of the EIA, existing knowledge, and potential Project-environment interactions. Additionally, a list of other projects or activities that were considered for the assessment of cumulative environmental effects was provided.

- The EIA methodology that was used to conduct the EIA to meet the requirements of *CEAA* and the provincial *Environmental Impact Assessment Regulation* was described.

- A high-level overview of the existing environmental setting of central New Brunswick was provided, including the historical setting, ecological context, and socioeconomic context of the region.

- A summary of key predictive technical studies undertaken as part of the EIA of the Project to assist in characterizing its potential environmental effects was also provided.

- An assessment of potential environmental effects of the Project on each VEC of relevance and importance to this EIA was conducted, including the cumulative environmental effects of the Project in combination with other projects or activities that have been or will be carried out, for each Project phase. An assessment of the effects of the environment on the Project, and of accidents, malfunctions and unplanned events for key credible scenarios, was also carried out.

- A description of proposed follow-up or monitoring measures for the Project was provided. These are measures to verify the environmental effects predictions of this EIA, to verify the effectiveness of mitigation to avoid or minimize environmental effects, and to assist in the characterization of the environmental effects of the Project to demonstrate compliance with legislation or permit requirements as well as to assist in the development of any required adaptive management measures.

Fourteen VECs were identified as relevant and important to the EIA of the Project. They were:

- Atmospheric Environment;
- Acoustic Environment;
- Water Resources;
- Aquatic Environment;
- Terrestrial Environment;
- Vegetated Environment;
- Wetland Environment;
- Public Health and Safety;
- Labour and Economy;
- Community Services and Infrastructure;
- Land and Resource Use;
- Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons;
- Heritage Resources; and
- Transportation.

Additionally, Effects of the Environment on the Project, as well as Accidents, Malfunctions and Unplanned Events, were assessed.

Project interactions with all VECs were analyzed to determine potential environmental effects associated with Project components and activities. The environmental effects assessment for each VEC was carried out for all Project phases as well as for potential accidental and/or unplanned events and the effects of the environment on the Project. The analysis used qualitative and, where possible, quantitative information available from existing knowledge and appropriate analytical tools, as well as considering identified mitigation measures. To eliminate or reduce anticipated environmental effects, mitigation measures were incorporated into the Project design.

Residual environmental effects were predicted for VECs following the application of planned mitigation measures. The residual environmental effects of each Project phase were evaluated as either not significant ("NS"), significant ("S", with likelihood of occurrence identified in such cases), or positive ("P"), based on thresholds of significance previously defined in the Terms of Reference. The significance of residual environmental effects, as determined for each of the VECs, is summarized in Table 11.1.1 below.

Table 11.1.1 Summary of the Significance of Residual Environmental Effects

Valued Environmental Component (VEC)	Project Phase			Accidents, Malfunctions and Unplanned Events	Project Overall
	Construction	Operation	Decommissioning, Reclamation and Closure		
Atmospheric Environment	NS	NS	NS	NS	NS
Acoustic Environment	NS	NS	NS	NS	NS
Water Resources	NS	NS	NS	NS	NS
Aquatic Environment	NS	NS	NS	NS	NS
Terrestrial Environment	NS	NS	NS	S/U (SAR only) NS (all others)	NS
Vegetated Environment	NS	NS	NS	NS	NS
Wetland Environment	NS	NS	NS	NS	NS
Public Health and Safety	NS	NS	NS	S/U	NS
Labour and Economy	NS	NS/P	NS	NS	NS/P
Community Services and Infrastructure	NS	NS	NS	NS	NS
Land and Resource Use	NS	NS	NS	NS	NS
Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons	NS	NS	NS	NS	NS
Heritage Resources	NS	NS	NS	NS	NS
Transportation	NS	NS	NS	NS	NS
Effects of the Environment on the Project	NS	NS	NS	NS	NS

Notes:
NS = Not Significant Residual Environmental Effect Predicted.
S = Significant Residual Environmental Effect Predicted.
L = Residual Environmental Effect is Likely to Occur.
U = Residual Environmental Effect is Unlikely to Occur.
P = Positive Residual Environmental Effect Predicted.
SAR = Species at Risk.

The EIA determined that there would be no significant adverse residual environmental effects from the Sisson Project during all phases and in consideration of normal activities of the Project as planned. Positive environmental effects were predicted for Labour and Economy, specifically for employment, incomes and government revenues, during both the Construction and Operation phases. Effects of the environment on the Project were predicted to be not significant due to the engineering design of Project components that incorporates factors of safety and other mitigation strategies to minimize the likelihood of a significant adverse effect of the environment on the Project. The potential residual environmental effects of credible Accidents, Malfunctions and Unplanned Events were also found to be not significant for the most part. The EIA determined that the only potentially significant environmental effects due to such credible events would be if a Project-related fire put the life and/or health of the public and/or Project employees in immediate danger, or if a Project-related fire or vehicle collision resulted in the death of listed species at risk (SAR). These environmental effects were predicted to be highly unlikely to occur. A major failure of containment in the tailings storage facility was determined to be extremely unlikely to occur, with an annual probability of occurrence of 1-in-1 million to 1-in-10 million, though if it did occur the environmental effects of such an event would likely be significant, especially for the Aquatic Environment.

Cumulative environmental effects of the Project in combination with other past, present or reasonably foreseeable future projects or activities were also assessed. Project management and mitigation measures will be applied as part of the Project such that the potential environmental effects of the Project in combination with other projects or activities that have been or will be carried out are not significant.

An appropriate follow-up program has been developed to verify the predictions of this EIA Report and to verify the effectiveness of mitigation. As well, monitoring measures have been developed to measure compliance with regulatory requirements, and to assist in the identification of adaptive management measures as necessary to avoid or minimize any potentially significant adverse environmental effects if they occurred.

Overall, based on the results of this EIA, it is concluded that, with planned mitigation and the implementation of best practices to avoid or minimize adverse environmental effects, the residual environmental effects of the Project, including cumulative environmental effects and the effects of the environment on the Project, during all phases are rated not significant, except in the event of certain worse-case Accidents, Malfunctions and Unplanned Events, for which some environmental effects could be significant but are highly unlikely to occur.