Kitsault Molybdenum Project
British Columbia, Canada
NI 43-101 Technical Report on Feasibility Study

Canada

Prepared for:
Avanti Mining Inc.

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Project No. 165003

Effective Date: 15 December 2010

CERTIFICATE OF QUALIFIED PERSON

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I, Gary Joseph Christie, P.Eng., am a Professional Engineer employed as a Project Manager of AMEC Mining and Metals,111 Dunsmuir Street, Vancouver, BC.

This certificate applies to the technical report entitled Avanti Mining Inc., Kitsault Molybdenum Project, British Columbia, Canada, NI 43-101 Technical Report on Feasibility Study" (the "Technical Report"), dated 15 December 2010.

I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). I'm a graduate mechanical engineer from the University of British Columbia with a Bachelors of Applied Science awarded in 1979.

I have practiced my profession continuously since 1979 and have been involved in industrial minerals and base and precious metals in projects and operations in North and South America.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Kitsault property on 15 October, 2009.

I am responsible for the preparation of Sections 1, 19, 20, 21, 22 and 23 of the Technical Report.

I am independent of Avanti Mining Inc. as independence is described by Section 1.4 of NI 43–101.

I have had no previous involvement with the Kitsault project.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and sealed"

Gary Christie, P.Eng. Dated: 27 January 2011

CERTIFICATE OF QUALIFIED PERSON

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I, Gregory Kenneth Kulla, P.Geo., am a Professional Geoscientist employed as a Principal Geologist of AMEC Mining and Metals Consulting Services,111 Dunsmuir Street, Vancouver, BC.

This certificate applies to the technical report entitled "Avanti Mining Inc. Kitsault Molybdenum Project British Columbia, Canada NI 43-101 Technical Report on Feasibility Study" dated 15 December, 2010".

I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). I graduated from the University of British Columbia with a Bachelors of Science, Geology in 1988.

I have practiced my profession continuously since 1988 and have been involved in base and precious metals, and industrial minerals exploration projects and operations in North and South America, Australia, and India.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Kitsault property between 23 and 24 June 2010.

I am responsible for the preparation of Sections 2, 3, 4 (excepting Section 4.8.7), 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17.1 and 17.3, and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections of the Technical Report.

I am independent of Avanti Mining Inc. as independence is described by Section 1.4 of NI 43–101.

I have had no previous involvement with the Kitsault project.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and sealed"

Greg Kulla, P.Geo

Dated: 27 January 2011

CERTIFICATE OF QUALIFIED PERSON

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I, Ryan Ulansky, P.Eng., am a Professional Engineer and was employed as a Senior Mining Engineer with AMEC Mining and Metals,111 Dunsmuir Street, Vancouver, BC until November 30, 2010 and am currently employed with Aura Minerals.

This certificate applies to the technical report entitled Avanti Mining Inc., Kitsault Molybdenum Project, British Columbia, Canada, NI 43-101 Technical Report on Feasibility Study" (the "Technical Report"), dated 15 December 2010.

I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). I graduated from the University of British Columbia with a Bachelor degree in Mining and Mineral Process Engineering in 1998 and a Masters of Applied Science – Mining and Mineral Process Engineering degree in 2003.

I have practiced my profession continuously since 1998 and have been involved in base and precious metals in projects and operations in North America and Africa.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I did not visit the Kitsault property.

I am responsible for the preparation of Sections 17.2, 17.3, 18.1, 18.2, 18.3, 18.5, and 18.6 and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections of the Technical Report.

I am independent of Avanti Mining Inc. as independence is described by Section 1.4 of NI 43–101.

I have had no previous involvement with the Kitsault project.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and sealed"

Ryan Ulansky, P.Eng. Dated: 27 January 2011

CERTIFICATE OF QUALIFIED PERSON

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I, Ignacy (Tony) Lipiec (P.Eng.) am employed as a Principal Metallurgical Engineer with AMEC Americas Limited.

This certificate applies to the technical report entitled Avanti Mining Inc., Kitsault Molybdenum Project, British Columbia, Canada, NI 43-101 Technical Report on Feasibility Study" (the "Technical Report"), dated 15 December 2010..

I am a Professional Engineer in the province of British Columbia. I graduated from the University of British Columbia with a B.A.Sc. degree in Mining & Mineral Process Engineering, in 1985.

I have practiced my profession for 25 years, and have previously been involved with metallurgical design and process engineering for base metal and disseminated sulphide projects in North America and South America.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I have not visited the Kitsault Project.

I am responsible for Sections 16.1, 16.2, 16.3, 16.5, 18.7, 18.8, 18.9, 18.10, 18.11, 18.12, 18.13, 18.14, and 18.15 and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections of the Technical Report.

I am independent of Avanti Mining Inc. as independence is described by Section 1.4 of NI 43–101.

I had not previously provided technical assistance to the Kitsault Project, and have no prior involvement with the project.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and sealed"

Ignacy (Tony) Lipiec (P.Eng.) Dated 27 January 2011

CERTIFICATE OF QUALIFIED PERSON

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I, Peter Healey, P.Eng, am employed as a Senior Civil/Geotechnical Engineer with SRK Consulting (Canada) Inc.

This certificate applies to the technical report entitled Avanti Mining Inc., Kitsault Molybdenum Project, British Columbia, Canada, NI 43-101 Technical Report on Feasibility Study" (the "Technical Report"), dated 15 December 2010..

I am a registered Professional Engineer in the Yukon (#1311) and in Ontario (#100041100) and in British Columbia (#13202). I graduated from the University of Auckland in 1976 with a B.Sc. in Civil Engineering.

I have practiced my profession for 30 years. I have been directly involved in mine decommissioning and reclamation since 1988.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101).

I visited the Kitsault property on many occasions from 1996 through to 2010.

I am responsible for Section 4.8.7 and those portions of the Summary, Conclusions and Recommendations that pertain to that section of the Technical Report.

I am independent of Avanti Kitsault Mine as independence is described by Section 1.4 of NI 43–101.

I have been involved with the Kitsault property since 2008, and have previously co-authored two technical reports on the property, entitled:

- Grills, F., De Ruijter, M.A., Vicentijevic, M., Volk, J., Levy, M., Healey, P., Day, S., Royle, M., Brouwer, K.J., Schmitt, H.R., and Malhotra, D., 2009: NI 43-101 Pre-Feasibility Study – Avanti Mining Inc. Kitsault Molybdenum Property British Columbia, Canada: unpublished technical report prepared by Wardrop Engineering Ltd for Avanti Mining, Inc., effective date 15 December 2009.
- Volk, J., Healey, P., Levy, M., Steininger, R., Collins, S., Greenaway, G., Dew, H., Schmitt, R., 2008: NI 43-101 Preliminary Economic Assessment Avanti Mining, Inc., Kitsault Molybdenum Property, British Columbia, Canada: unpublished technical report prepared by SRK Consulting Ltd for Avanti Mining, Inc., effective date 3 November 2008.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

“signed and sealed”

(Peter Healey P.Eng*)* Dated: 27 January 2010

CERTIFICATE OF QUALIFIED PERSON

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I, Michael Levy, P.E., P.G., am employed as a Senior Geotechnical Engineer with SRK Consulting (U.S.) Inc.

This certificate applies to the technical report entitled Avanti Mining Inc., Kitsault Molybdenum Project, British Columbia, Canada, NI 43-101 Technical Report on Feasibility Study" (the "Technical Report"), dated 15 December 2010.

I am a registered Professional Engineer in the states of Colorado (#40268) and California (#70578) and a registered Professional Geologist in the state of Wyoming (#3550). I graduated from the University of Iowa in 1998 with a B.Sc. in Geology and from the University of Colorado in 2004 with a M.Sc. in Civil-Geotechnical Engineering.

I have practiced my profession for 13 years. I have been directly involved in the geotechnical data collection and pit slope analysis and design at Kitsault since 2008.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101).

I visited the Kitsault property between 8 and 11 September, 2008.

I am responsible for Section 18.4 and those portions of the Summary, Conclusions and Recommendations that pertain to that section of Technical Report.

I am independent of Avanti Mining Inc., as independence is described by Section 1.4 of NI 43–101.

I have been involved with the Kitsault property since 2008, and have previously co-authored two technical reports on the property, entitled:

- Grills, F., De Ruijter, M.A., Vicentijevic, M., Volk, J., Levy, M., Healey, P., Day, S., Royle, M., Brouwer, K.J., Schmitt, H.R., and Malhotra, D., 2009: NI 43-101 Pre-Feasibility Study – Avanti Mining Inc. Kitsault Molybdenum Property British Columbia, Canada: unpublished technical report prepared by Wardrop Engineering Ltd for Avanti Mining, Inc., effective date 15 December 2009.
- Volk, J., Healey, P., Levy, M., Steininger, R., Collins, S., Greenaway, G., Dew, H., Schmitt, R., 2008: NI 43-101 Preliminary Economic Assessment Avanti Mining, Inc., Kitsault Molybdenum Property, British Columbia, Canada: unpublished technical report prepared by SRK Consulting Ltd for Avanti Mining, Inc., effective date 3 November 2008.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and sealed"

Michael Levy, P.E., P.G. Dated: 27 January 2011

Knight Piésold CONSULTING

CERTIFICATE OF QUALIFIED PERSON

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I, Bruno Borntraeger, P.Eng., am employed as a Specialist Engineer / Project Manager with Knight Piésold Ltd.

This certificate applies to the technical report entitled Avanti Mining Inc., Kitsault Molybdenum Project, British Columbia, Canada, NI 43-101 Technical Report on Feasibility Study" (the "Technical Report"), dated 15 December 2010.

I am a member of Professional Engineers and Geoscientists of British Columbia, Registration #20926. I graduated in 1990 from the University of British Columbia with a degree in Geological Engineering.

I have practiced my profession for 20 years. My relevant experience includes 21 years of practical experience from feasibility studies through detailed engineering, construction, operations and closure with respect to Geotechnical Engineering, Mine Waste Management Facilities, Tailings Dam Design and Heap Leach Pad Design.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Kitsault Property on 29 April, 2010.

I am responsible for Sections 16.4, and 18.9, and those portions of the Summary, Conclusions and Recommendations that pertain to those sections of the Technical Report.

I am independent of Avanti Mining Inc. as independence is described by Section 1.4 of NI 43–101.

I have had no previous involvement with the Kitsault Property.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and sealed"

Bruno Borntraeger, P.Eng. Dated: 27 January 2011

IMPORTANT NOTICE

This report was prepared as a National Instrument 43-101 Technical Report for Avanti Mining Inc. (Avanti) by AMEC Americas Limited (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC's services, based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Avanti subject to the terms and conditions of its contract with AMEC. This contract permits Avanti to file this report as a Technical Report with Canadian Securities Regulatory Authorities pursuant to National Instrument 43-101, *Standards of Disclosure for Mineral Projects.* Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party's sole risk.

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1.0 SUMMARY

AMEC Americas Limited (AMEC) was commissioned by Avanti Mining Inc. (Avanti) to prepare an independent Qualified Person's Review and NI 43-101 Technical Report (the Report) for the wholly-owned Kitsault molybdenum project (the Project), located in British Columbia (BC), Canada. Avanti will be using the Report in support of disclosures in the Avanti press release dated 16 December 2010, entitled "Avanti Mining Receives Positive Feasibility Study Confirming Robust Economics for Restart of Kitsault Molybdenum Mine".

The Project includes the Kitsault, Bell Moly, and Roundy Creek molybdenum deposits. Kitsault has previously been mined, from 1968–1972 and 1981–1982.

1.1 Location and Access

The Kitsault Project is situated about 140 km north of Prince Rupert, and south of the head of Alice Arm, an inlet of the Pacific Ocean, within British Columbia.

The Project is accessed via a 83 km long gravel road from Nass Camp on the Nisga'a Highway, 120 km north of Terrace, BC. The Project is also accessed by floatplane or boat from Prince Rupert, BC, to the former Kitsault town site, a distance of about 140 km.

A series of Forest Service roads and a private gravel road connect the proposed mine site to Nass Camp, north of New Aiyansh, Rosswood, and Terrace. The feasibility study envisages that the road from Nass Camp will be upgraded and maintained regularly for use as the main access road to site.

1.2 Mineral Tenure, Surface Rights, and Royalties

Avanti holds 35 mining leases and 310 mineral claims, covering an area of 43,668 ha. Claims and mining leases are held in the name of the wholly-owned Avanti subsidiary, Avanti Kitsault Mine Ltd. AMEC was provided with information from legal advisors retained by Avanti that the leases and claims are in good standing.

The majority of the leases and claims are located under Provincial Crown lands. Four claims are located under privately-owned lands at the former Kitsault town site that is situated on the Alice Arm. Surface rights held by Avanti, which overlap the non-Crown portions of the mineral leases and claims, include three land parcels, totalling 14.497 ha, and a statutory right-of-way.

A royalty is payable by the Climax Molybdenum Company of British Columbia (CMC) to Bell Molybdenum Mines Limited (Bell) on each tonne of ore mined and removed from claims 250340, 250341, 250342, 250343, 250344, 250345, 250346, 250347, 250390, and 250391 (covering the Bell Moly deposit only). The entire property is subject to a 9.22% net cash flow interest that is owned by Amax Zinc (Newfoundland) Limited. This net cash flow interest is only payable after the recovery of all operating and capital costs associated with construction or sustaining capital.

ALI has a 1% NSR on future production subject to the right, within 90 days from the presentation of a feasibility study, to elect to surrender the NSR in exchange for either an additional US$10 million payment (payable at commercial production or in Avanti shares within 30 days after the date of the election).

1.3 Permits

The primary BC authorization for the development of the Kitsault Project is a permit under the Provincial Mines Act. A preliminary list of the BC Provincial authorizations, licences, and permits that Avanti will potentially be required to obtain has been developed. Any required Federal and Provincial environmental assessment (EA) processes must be completed before the respective jurisdictions can issue permits, licences, or other authorizations required to allow the development to proceed.

1.4 Environment

The Kitsault mine is a permitted site with considerable past mining activity and basic infrastructure in place. Rehabilitation of the 1981–1982 mining program was started under an approved Reclamation Plan in the mid-1990s and completed, except for ongoing required monitoring, in 2006.

The proposed Project will require an environmental assessment certificate; Avanti has been engaged in discussions with regulatory agencies, the public, and First Nations on the approved application information requirements (AIR) for the EA. Following receipt of public comment, an AIR will be completed in the first half of 2011.

Avanti received a Section 11 order in November 2010 from the BC Government that established the formal scope, procedures, and methods concerning the EA. A considerable amount of environmental work, geochemical characterization, and geotechnical investigation has been carried out by previous owners of the historical Kitsault mine, by AKM, and by its consultants. Avanti anticipates filing an EA with the Provincial and Federal regulatory agencies during the first half of 2011.

A formal Notice of Commencement (NOC) was received from the Canadian Environment Assessment Agency (CEAA) in November 2010 and stated that a federal comprehensive study would be required. Avanti also began the Federal CEA process with the submittal of a Project Description.

Historical mining in the Kitsault area has resulted in the development of baseline data for more than 20 years. A number of Project-specific baseline studies were completed and include dust, noise, meteorological, groundwater and water monitoring studies, collection of physical oceanography data, wetland, flora and fauna surveys, site metal analysis, an Archaeological Impact Assessment, and desk-based socio-economic and land use reviews.

1.5 Geology and Mineralization

Mineralization is hosted within granodiorite to quartz monzonite stocks of the Coast Range Crystalline Complex that have intruded the Intermontaine Tectonic Belt of the Canadian Cordillera along its contact with the complex. Collectively, the stocks are known informally as the Alice Arm intrusions.

Intrusive rocks associated with molybdenum mineralization at Kitsault, Bell Moly, and Roundy Creek are multiphase diorite, quartz monzonite, and younger felsic units of the Lime Creek Intrusive Complex, the Clary Creek stock, and the Roundy Creek intrusive complex. Surrounding the intrusive rocks are hornfels aureoles that grade outwards into regionally- and thermally-metamorphosed interbedded argillite and greywacke of the Bowser Lake Group. Cross-cutting relationships within the intrusive suites indicate that molybdenum mineralization is the result of multiple mineralizing events.

Molybdenum mineralization at the Kitsault deposit forms a hollow, steeply-dipping, annular, cylindrical body that is well-developed on three sides of the margins of the central Lime Creek Intrusive Complex. The body has widths from 100 m to 150 m on the east, west, and north sides, and a less well defined zone to the south, where it is at least 300 m wide and may extend to nearly the southern limits of drilling. Molybdenum mineralization is hosted in a number of generations of stockwork and sheeted molybdenite–quartz veins within the body. Sphalerite, galena, and a variety of Pb–Bi sulphosalt minerals are associated with some vein phases.

The Alice Arm intrusive-hosted molybdenum deposits are part of a suite of porphyry molybdenum deposits in the North American cordillera that are classed as low-fluorine stockwork molybdenite deposits.

1.6 History and Exploration

Open pit mining commenced in 1968 under the Kennco Explorations (Western) Ltd. (KEL) subsidiary company B.C. Molybdenum (BC Moly), and continued to 1972, when low molybdenum prices forced closure. During that period, about 9.3 Mt of ore was produced, with about 22.9 Mlb of molybdenum recovered. Amax of Canada Limited (Amax) subsequently mined the deposit between 1981 and 1982, but closed the mine due to low molybdenum prices. During this second production period, about 4.08 Mt of ore and stockpile material were processed and 8.99 Mlb of saleable molybdenum were recovered.

Work completed by Avanti since Project acquisition in 2008 has comprised evaluation and interpretation of legacy mining and exploration data from the BC Moly and Amax mining phases; core drilling, including geotechnical, hydrological, confirmation and condemnation drill holes; baseline environmental studies and monitoring programs; geotechnical evaluations; metallurgical testwork; Mineral Resource and Mineral Reserve estimation, and engineering and design studies.

A preliminary assessment was undertaken in 2008, and a pre-feasibility study in 2009. Under the assumptions considered, the Project showed positive economics.

During 2010, a feasibility study was completed; this Report discusses the results of that assessment.

1.7 Drilling

A total of 62,223 m was drilled in 438 core drill holes on the Kitsault property between 1959 and 2010, of which 222 drill holes (41,686 m) were on the Kitsault deposit. The Kitsault total includes 139 core holes (27,652 m) of legacy data and 83 core holes (14,034 m) completed by Avanti.

Vertical and sub-vertical holes were drilled. The drill holes delineating the mineralization were drilled parallel to two main grids, an east–west grid and a north–south grid, with 29 drill holes oblique to both grids. The majority of sub-vertical holes were drilled from the center of the annular shaped mineralized body towards the outer edges of mineralization.

Core was logged for geological and geotechnical parameters, and photographed.

The collar survey methods for the Kitsault deposit varied over time, and there is little information on the methods used for the legacy drilling. The 2008 to 2010 Avanti collar surveys were conducted by McElhanney Consulting Services Ltd using global positioning system (GPS) instruments.

Several different methods were used in legacy data to determine the deflection of the core drill holes; Avanti drilling used a Reflex EZ Shot instrument for all down-hole surveys. Sixty percent of the total length drilled is supported by down-hole surveys; with the remainder not surveyed, or surveyed by acid-etch methods for dip deflection only.

The Project database includes 133 density determinations performed using a wax seal method on drill core from the 2008 Avanti drilling. There are limited density data for a project at feasibility level. AMEC notes, however, that most of the rock is unweathered, and only small variations in SG should occur due to weathering or depth. However, additional density determinations should be performed.

1.8 Analyses

The average sample length is 3 m, and in AMEC's opinion, this sample length is suitable for the style of mineralization encountered at Kitsault. The thickness of mineralized intercepts ranges between tens of meters to several hundred meters.

Several different laboratories were used by the various operators for primary analyses; laboratory accreditations prior to Avanti's involvement in the project are unknown. For the Avanti drill programs, ALS Chemex of Vancouver, BC was the primary analytical laboratory, and Acme Analytical Laboratories Ltd. (Acme), of Vancouver, BC was used as a secondary laboratory for check assays; both laboratories are ISO 9001:2000 certified.

Legacy samples from 1974 were crushed (100% passing 80 mesh) and pulverised (100% passing -100 mesh), then analysed using the Climax Molybdenum assay procedure which is a three-acid digestion of the pulp, titration of the aliquot, with analyses by mass spectrometer. All samples were analysed for Mo and reported as MoS_2. Lead data were only collected after 1978.

For the Avanti drilling, samples were crushed (85% passing 10 mesh) and pulverized (95% passing 150 mesh) then analysed using an ICP atomic emission spectrometry CP61 (four acid) method for a 33-element analysis. In addition, sulphide sulphur was determined using the sodium carbonate dissolution of sulphate, Leco furnace and infrared spectroscopy method. Sulphate sulphur was determined by carbonate leach, and gravimetric analyses. Check samples at Acme were analysed using a four-acid digestion followed by ICP mass spectrometry.

1.9 Quality Assurance and Quality Control

There is limited information on the quality assurance/quality control (QA/QC) program used for legacy drill programs.

The Avanti quality control on the assay data-set includes blanks, coarse duplicates, pulp duplicates, three Mo certified reference materials (CRMs) and check assays, with an approximate insertion rate of about 3%. Avanti conducted a more comprehensive check assay program in 2010 and included CRMs with the check assays to test the secondary laboratory accuracy for Mo, Zn, and Pb.

1.10 Data Verification

Two previous independent data checks were performed by SRK Consulting Ltd (SRK) and Wardrop Engineering Inc. (Wardrop), in support of preliminary assessment and pre-feasibility studies respectively, on the Project. No significant issues were noted in these reviews.

Avanti completed a set of six twin drill holes to confirm KEL data; similar grade intervals were produced. Infill drilling completed by AMAX in areas drilled by KEL also confirmed the sample and distribution of the nearby KEL holes. In addition, the Amax and Avanti drilling in areas where Avanti had infill drill holes were compared, and the analytical and geological data were found to be in reasonable agreement.

AMEC performed sufficient verification of the data and database to support Mineral Resources and Mineral Reserves being estimated for the feasibility study. Review of the analytical data, including performance of duplicate, blank and CRM samples indicated that the molybdenum analytical data were acceptable for Mineral Resources and Mineral Reserve estimation. In future drill assay programs, AMEC recommends that Avanti include CRM material that is suitable to measure the accuracy and precision for Pb, as Pb may be important to mineral processing. No significant errors that could affect Mineral Resources and Mineral Reserve estimation were noted with the data as entered into the Project database.

1.11 Metallurgical Testwork

Initial metallurgical testwork completed in support of the two phases of mine production, and information gained during the two mining phases showed that the mineralization is amenable to being processed using conventional technologies, and acceptable recoveries were returned.

Testwork completed by Avanti comprised comminution and flotation tests on samples of quartz monzonite, diorite, and hornfels, the three major rock types projected to have life-of-mine (LOM) distribution. These samples originated from the area designated as potential plant feed material indicated in the mine plan to have an ore feed grade of approximately 0.09% Mo.

Past production and current testwork indicate that saleable molybdenum flotation concentrates can be produced by the use of conventional comminution and flotation processes. The plant feed will be crushed and milled, then subjected to flotation. The resulting concentrate will be leached to remove the lead impurity, thereby producing a high-grade saleable molybdenum concentrate that meets smelter specifications. The final concentrate is expected to contain 52% Mo and <0.04% Pb, for an average, overall, life-of-mine molybdenum recovery of 89.9%.

Additional metallurgical testwork is required to assess the potential for recovery of silver. Dependent on the outcome of this future testwork the project may have the opportunity to generate additional revenue producing a silver-rich concentrate.

1.12 Process Description

The mineral processing plant is based on conventional technology and proven equipment. Process design is for a concentrator with a nominal processing capacity of 40,000 t/d of ore from the open pit. Run-of-mine (ROM) ore from the open pit will be crushed and conveyed to the concentrator where the ore will be ground to liberate the mineral values from the host rock and then separated by flotation into a molybdenum concentrate. The concentrate will be filtered and bagged for truck transport to the port facilities, where it will be loaded onto seagoing vessels for delivery for roasting. The roasting step will be performed by Molymet in either Chile or Belgium.

1.13 Tailings Management

The tailings management facility (TMF) was designed to provide environmentally secure storage for disposal of 233 Mt of tailing, and includes provision, if the Project were expanded, to store as much as 300 Mt. Water management components were designed to maximize the diversion of clean water around the Project components, while ensuring the capture of contact water throughout the site.

1.14 Mineral Resources

A total of 165 core holes (38,820 m) support the mineral resource estimate.

Avanti prepared lithological and grade shell interpretations from verticals sections in two different orientations, north–south and east–west. AMEC created bench plan polygons of the lithological units, reconciled them with the vertical sections, and extruded them 20 m. A grade-shell was produced based on a molybdenum threshold at a 0.05% indicator (low-grade shell). Within this shell, an inner (barren core) and an outer (high-grade) annulus solid were constructed. For the estimation of Mo grades inside the grade shell AMEC created six geometric zones to accommodate narrow search ellipsoids.

AMEC regularized the nominal 3 m drill hole intervals into 6 m composites; this size was selected to avoid splitting of original samples and to accommodate two composites per block, as the likely selective mining unit is 10 m high, and the majority of drill holes are inclined. Composites were coded using the domain and geometric zone solids.

The block model consists of regular blocks of 10 m x 10 m x 10 m and no rotation was used. Density values were assigned to blocks based upon the lithological codes. Outlier values were controlled by using a restricted search ellipse during grade estimation.

AMEC estimated molybdenum, silver and lead by estimation domains using ordinary kriging (OK) interpolation. The grade estimation was completed in three passes with the exception of Mo estimates for domains outside the high-grade shell.

AMEC validated the Kitsault model by using summary statistics, checking for global estimation bias, drift analysis, and by visual inspection. A nearest-neighbour (NN) model was generated to represent the declustered composites and to validate the OK model. No model bias was identified from these checks.

Mineral resource blocks were classified as Measured, Indicated or Inferred using a combination of distance to the nearest sample, and sample numbers. AMEC assessed the classified blocks for reasonable prospects of economic extraction by applying preliminary economics for potential open pit mining methods using a Lerchs-Grossmann (LG) pit shell. The cut-off grade of 0.021% Mo for reporting mineral resources was calculated based on the Mo price, metallurgical process recoveries and costs, and selling costs.

Mineral resources for the Kitsault Project are tabulated in Table 1-1 at a cut-off grade of 0.021% Mo. Mineral resources have an effective date of 8 November, 2010. AMEC cautions that mineral resources that are not mineral reserves do not have demonstrated economic viability.

Table 1-1: Kitsault Mineral Resources, Effective Date 8 November 2010, Greg Kulla, P.Geo. (cut-off 0.021% Mo)

Category	Volume (Mm^3)	Density (g/cm^3)	Tonnage (Mt)	Mo %	Mo (MLb)	Ag (ppm)	Ag (Moz)
Measured	27.6	2.65	73.0	0.093	150.3	4.28	10.0
Indicated	84.9	2.66	225.8	0.065	322.2	4.17	30.3
Measured + Indicated	112.4	2.66	298.8	0.072	472.5	4.20	40.3
Inferred	58.8	2.66	157.1	0.050	172.2	3.65	18.4

Notes:
1. Mineral Resources are inclusive of Mineral Reserves
2. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability
3. Mineral Resources are defined with a Lerchs–Grossmann pit shell, and reported at a 0.021% Mo cut-off grade
4. Mineral Resources are reported using a commodity price of CDN$15.62/lb Mo, an average process recovery of 89%, a process cost of CDN$ 5.84/t and selling cost of CDN$1.24 /lb of Mo sold. No revenue was assumed for Ag
5. Tonnages are rounded to the nearest 1,000 tonnes; grades are rounded to three decimal places for Mo and two decimals for Ag
6. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content
7. Tonnage and grade measurements are in metric units; contained molybdenum is in imperial pounds.
8. There is potential for a 30% to 50% recovery of the silver reporting to a saleable concentrate. As of December 1, 2010, the metallurgical work in support of this is indicative only, suggesting that although there may be a reasonable prospect to extract this silver resource there is insufficient work to define the level of benefit that would support inclusion of silver in a reserve estimate. No dedicated silver recovery circuit has been included in the process design, but there are reasonable expectations that this can be added in the future.

1.15 Mineral Reserves

Geotechnical domains and pit slope angles were provided by SRK Consulting Ltd (SRK). Overall slopes ranged from 42° to 48°.

As the mineralized material shows gradational changes across economic grade boundaries, loss and dilution adjustments were made only to remove isolated ore and waste blocks. Dilution and loss have a very small impact on the total mineralization, and are considered appropriate for a porphyry-type deposit.

A marginal cut-off grade of 0.026% Mo was used, being the point where the revenue from processing the ore is equal to the total ore-based costs (processing, sustaining capital allowance, tailings management, G&A). The revenue was based on net molybdenum price after refining charges and a 1.7% royalty deduction.

The mineral reserves for the Kitsault Project are tabulated in Table 1-2 at a cut-off grade of 0.026% Mo. Mineral reserves have an effective date of 8 November 2010.

Table 1-2: Kitsault Mineral Reserves, Effective Date 8 November 2010 Ryan Ulansky, P. Eng. (cut-off 0.026% Mo)

Category	Tonnage (Mt)	Mo (%)	Contained Mo (Mlb)
Proven	69.7	0.097	148.5
Probable	162.8	0.075	267.3
Total Proven and Probable	**232.5**	**0.081**	**415.8**

Notes: 1. Mineral Reserves are defined within a mine plan with pit phase designs guided by Lerchs-Grossmann (LG) pit shells and reported at a 0.026% Mo cut-off grade after dilution and mining loss adjustments. The LG shell generation was performed on Measured and Indicated materials only, using a molybdenum price of CDN$13.58/lb, an average mining cost of CDN$1.94/t mined, a combined ore-based cost (processing and G&A) of CDN$5.84/t milled, and a selling cost of $1.24 /lb of Mo. Metallurgical recovery used was a function of the head grade, defined as Recovery =7.5808*Ln(Mo%)+108.63 with a cap applied at 95%. Overall pit slopes varied from 42° to 48°.

2. Dilution and mining loss have been accounted for based on a waste neighbour analysis. 1.5 Mt of Measured and Indicated material above cut-off was routed as waste. 1.9 Mt of Measured and Indicated material below cut-off was included as dilution material.
3. Tonnages are rounded to the nearest 1,000 tonnes; grades are rounded to three decimal places for Mo and two decimals for Ag.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.
5. Tonnage and grade measurements are in metric units; contained molybdenum is in Imperial pounds.
6. The life-of-mine strip ratio is 0.77.

1.16 Mine Plan

The mine plan envisages a single open pit, consisting of six phases, based on nested LG shell guidance, molybdenum grade, Patsy Creek diversion requirements, strip ratio, access considerations, and operational constraints.

Under the project master plan, construction and pre-stripping are scheduled over a one-year period. The primary objective of preproduction mining is to supply material for the South Embankment of the TMF and other construction projects. Preproduction mining will also focus on developing mine access roads suitable for large mining equipment and “facing-up” the initial pit phases into productive set-ups for the start of production.

The plan assumes that the mine will operate 365 d/a, with 10 days allowed for delays due to fog and winter conditions. The plant was scheduled to operate 365 d/a with sufficient materials stockpiled at the crusher and coarse ore stockpile to accommodate mine outages resulting from weather constraints. Maximum vertical advance per phase per year was eight 10 m benches. Total pre-stripping is 8.5 Mt. Peak material movement is 124 kt/d. The highest rate of vertical advance is in Year 1, when both Phase 1 and 2 are mined at a rate of 8 benches a year. In the production years, two to three phases are typically active in any period. The maximum mining rate of 42 Mt/a is achieved in Year 2. The average rate from Years 1 to 10 is 33 Mt/a.

Short-term stockpiling will be required to buffer crusher downtime and production fluctuations from the pit. Low-grade ore mined early in the life will need to be stored in long-term stockpiles to improve the NPV of the project. The material between the elevated cut-off and the economic cut-off will be placed in a long-term stockpile and be processed through the mill at the end of the mine life.

Mill feed constitutes the ore transported directly from the mine plus ore reclaimed from the stockpiles. After plant ramp-up, mill feed will average 40 kt/d. Contained Mo in the mill feed is projected to average approximately 29.7 Mlb in the first five years and 23.4 Mlb/a over the life of the mine; the maximum is 33.7 Mlb in Year 3.

Waste rock in the block model was characterized as either non acid-generating (NAG) or potentially acid-generating (PAG); and will be placed in the east waste rock management facility (EWRMF) in the Patsy Creek drainage, buttressing the TMF South Embankment. Two small in-pit waste rock management facilities (WRMFs) with a capacity of 2.3 Mt will also be utilized.

Mining equipment is conventional, consisting of a truck–shovel–loader configuration, and appropriate auxiliary equipment. The strategy for repair and maintenance of the mobile equipment fleets at the Kitsault project will be an Owner-managed maintenance program.

Blasting will be required due to the rock hardness; blast hole patterns will be designed by the drill and blast engineers for optimal “digability”, cost, and fragmentation for ore and waste areas.

Geotechnical design criteria were developed for bench, inter-ramp, and overall pit slope scales to satisfy a minimum static factor of safety of 1.2. Limited bench-scale failures were considered acceptable during design.

A two-dimensional pit inflow model was developed that incorporates three separate hydraulic zones, and predicts a total groundwater inflow to the pit of 4,800 m^3/d at end of mining. Water will be managed via ditching, sumps, pipes, pumps, booster pumps and diversions.

1.17 Cost Estimates

The capital cost estimate was developed in accordance with AMEC Feasibility Standards (Class 3), AACE Class 3 international classifications, and is expected to be within ±15% of final project costs. Sustaining capital cost was based on the mining equipment replacement costs and sustaining TMF material take-offs provided by Knight Piésold. Mine closure costs were not included in the estimate, but were developed independently by SRK. The estimated Project capital costs are summarized in Table 1-3.

Table 1-3: Capital Cost Summary by Major Area

Area	Description	Cost (CDN$M)
1000	Mining	91.1
2000	Site preparation and roads	38.6
3000	Process facilities	212.1
4000	Tailings management and reclaim systems	97.6
5000	Utilities ties	43.1
6000	Ancillary buildings and facilities	41.7
	Total Direct Costs	524.2
8000	Owner's costs	22.9
9000	Indirects	289.9
	Total Indirect Costs	312.8
	Total Direct + Indirect Costs	837.0
	Contingency	Incl above
	Total Capital Costs	**837.0**

The operating cost estimate for the Kitsault project was assembled by area and component, based on estimated staffing levels, consumables, and expenditures, according to the mine plan and process design. The mine operating cost estimate incorporates costs for operating and maintenance labour, staff, and operating and maintenance supplies for each year. Processing costs include the costs for operating and maintaining the processing facilities, from the primary crusher through to concentrate load-out, as well as process and reclaim water pumping and tailings management. The general and administrative (G&A) operating costs are the expenses for cost centres that are not directly linked to the mining and process disciplines, and include labour, logistics, camp, finance, site management administration, maintenance, power, insurance and environmental costs. The estimated Project operating costs for the life-of-mine (LOM) are summarized in Table 1-4.

Table 1-4: LOM Operating Costs ($000)

Area	Total LOM	$/t Milled	$/lb Mo recovered
Mine Operations	573,954	2.47	1.54
Processing Operations	1,102,207	4.74	2.95
Administration	252,984	1.09	0.68
Total	**1,929,145**	**8.30**	**5.17**

1.18 Markets

Avanti has a molybdenum concentrate tolling agreement with Molibdenos y Metales S.A. (Molymet) of Chile for the life-of-mine molybdenum concentrate production. Avanti retains an option to reduce the molybdenum concentrate delivered to Molymet for processing to 80% of the total production in the event one of the company's strategic partners wants to take its 20% share in the form of molybdenum concentrate.

Avanti has determined that the best strategy for selling the processed molybdenum concentrate produced from the Kitsault mine is to enter into off-take agreements with several selected end-users of the product. Terms of these off-take agreements would vary depending on project financing conditions. Although Avanti has entered an off-take commitment Letter of Intent with one potential purchaser, consisting of 10% of production for the first four years with an option to increase to 20%, the terms have not yet been finalized. After the project financing has been discharged, off-take agreements would be indexed to a spot price. Discussions with several other parties are in progress at the time of preparation of this Report.

1.19 Taxation

Taxation considerations include Provincial and Federal corporate income taxes and BC Mineral taxes as determined using a taxation model provided by PriceWaterHouseCoopers LLP.

1.20 Financial Analysis

The results of the economic analysis represent forward-looking information that is subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented here.

The project has been evaluated using a discounted cash flow (DCF) analysis. Cash inflows consist of annual revenue projections for the mine and two years of preproduction. Cash outflows such as capital, operating costs, and taxes are subtracted from the inflows to arrive at the annual cash flow projections. The discounted, present values of the cash flows are summed to arrive at the project's net present value (NPV). In addition to NPV, internal rate of return (IRR) and payback period are also calculated.

The pre-tax NPV @ 8% is CDN$1,325 million with an IRR of 31.8%. The cash flow analysis shows that the project will generate a positive cash flow in all years except Year -2 and Year -1 on a pre and after tax basis.

After tax results of the financial analysis indicate an NPV @ 8% of CDN$863 million and an IRR of 26.8% with a payback period of 2.6 years after two years of construction. Results of the financial analysis are as summarized in Table 1-5.

Table 1-5: Summary Results of Financial Analysis

Item	Unit	Value
Pre-Tax		
IRR	%	31.8
CNCF	CDN$000	3,185
NPV 8%	CDN$000	1,325
NPV 10%	CDN$000	1,056
Payback	years	2.6
After Tax		
IRR	%	26.8
CNCF[1]	CDN$000	2,143
NPV 8%	CDN$000	863
NPV 10%	CDN$000	684
Payback	years	2.6

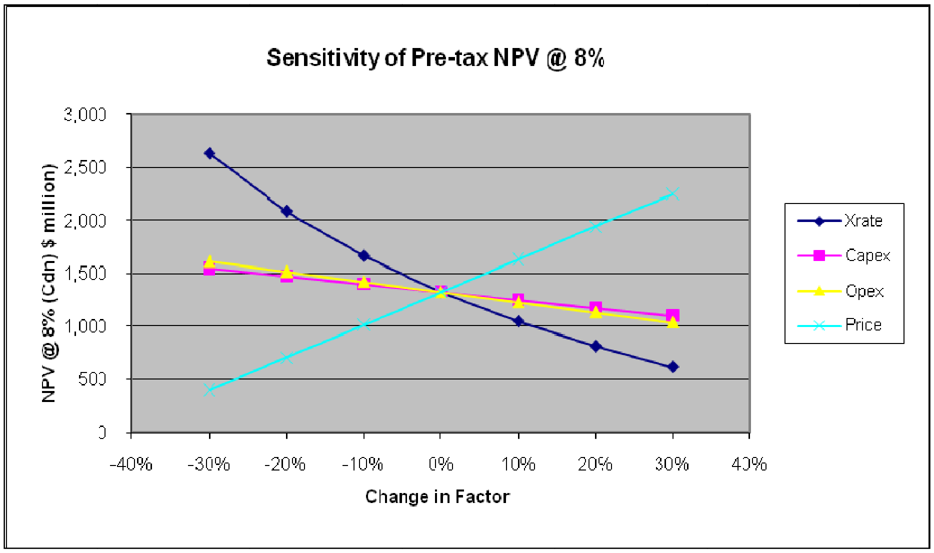
Note: CNCF = Cumulative Net Cash Flow

Sensitivity analysis was performed using the CPM Group's base case metal prices assessing variations in the metal price, operating cost, CDN/US exchange rate and mining cost. Analysis shows that the Kitsault project is most sensitive to changes in molybdenum price and the exchange rate, as these items directly affect the revenue stream. The sensitivity analysis shows that the project is also sensitive, but less so, to capital expenditure and operating cost (Figure 1-1).

1.21 Exploration Potential

Potential exists to expand the limits of the known zones to the northwest, south and west sides of the Kitsault deposit. The deposit also remains open at depth. Outside the Kitsault deposit, exploration potential remains south of Patsy Creek, and at the Bell Moly and Roundy Creek deposits.

Figure 1-1: Sensitivity Analysis



1.22 Conclusions

In the opinion of the QPs, the Project that is outlined in this Report has met its objectives in that mineralization has been identified that can support estimation of Mineral Resources and Mineral Reserves, and there was sufficient additional scientific and technical information to allow the completion of a more detailed study at feasibility level to support potential mine development. A decision to proceed with development will require appropriate permits, and approval by both relevant statutory authorities and Avanti's board.

The key Project risks are the sensitivity of the Project to fluctuations in the molybdenum price, and US:Canadian dollar exchange rate variations.

Project opportunities include the potential for recovery of silver. Depending on the outcome of future metallurgical testwork the Project may have the opportunity to generate additional revenue by producing a silver-rich concentrate. A second upside will be if Inferred Mineral Resources that are identified within the LOM production plan can be upgraded to higher confidence Mineral Resource categories.

1.23 Recommendations

Recommendations for additional work are based on a two-phase work program. Work phases are independent of each other, and can be conducted concurrently. The first phase consists of recommendations to support detailed project design. The second phase consists of exploration drilling. The first program is estimated to cost approximately CDN$875,000 and the second phase is estimated to cost approximately CDN$2 million.

2.0 INTRODUCTION

AMEC Americas Limited (AMEC) was commissioned by Avanti Mining Inc. (Avanti) to prepare an independent Qualified Person's Review and NI 43-101 Technical Report (the Report) for the wholly-owned Kitsault molybdenum project (the Project), located in British Columbia (Figure 2-1).

This Report will be used by Avanti in support of disclosures in the Avanti press release dated 16 December 2010, entitled "Avanti Mining Receives Positive Feasibility Study Confirming Robust Economics For Restart Of Kitsault Molybdenum Mine".

Avanti holds the Kitsault Project through a wholly-owned subsidiary, Avanti Kitsault Mines Ltd. For the purposes of this Report, the name "Avanti" is used for both the parent and subsidiary companies.

All measurement units used in this Report are metric, and currency is expressed in US dollars unless stated otherwise. The Report uses Canadian English.

2.1 Qualified Persons

The following people served as the Qualified Persons (QPs) as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects*, and in compliance with Form 43-101F1:

- Gary Christie, P.Eng., Project Manager, AMEC
- Greg Kulla, P.Geo., Principal Geologist, AMEC
- Ryan Ulansky, P.Eng., formerly Senior Mining Engineer, AMEC
- Tony Lipiec, P.Eng., Principal Process Engineer, AMEC
- Peter Healey, P.Eng., Senior Civil/Geotechnical Engineer, SRK Consulting, Vancouver
- Michael Levy, P.Eng., Senior Geotechnical Engineer, SRK Consulting, Denver
- Bruno Borntraeger P.Eng., Specialist Engineer/Project Manager, Knight Piésold Ltd, Vancouver

2.2 Site Visits

QPs conducted site visits to the Project as shown in Table 2-1.

Figure 2-1: Project Location Map

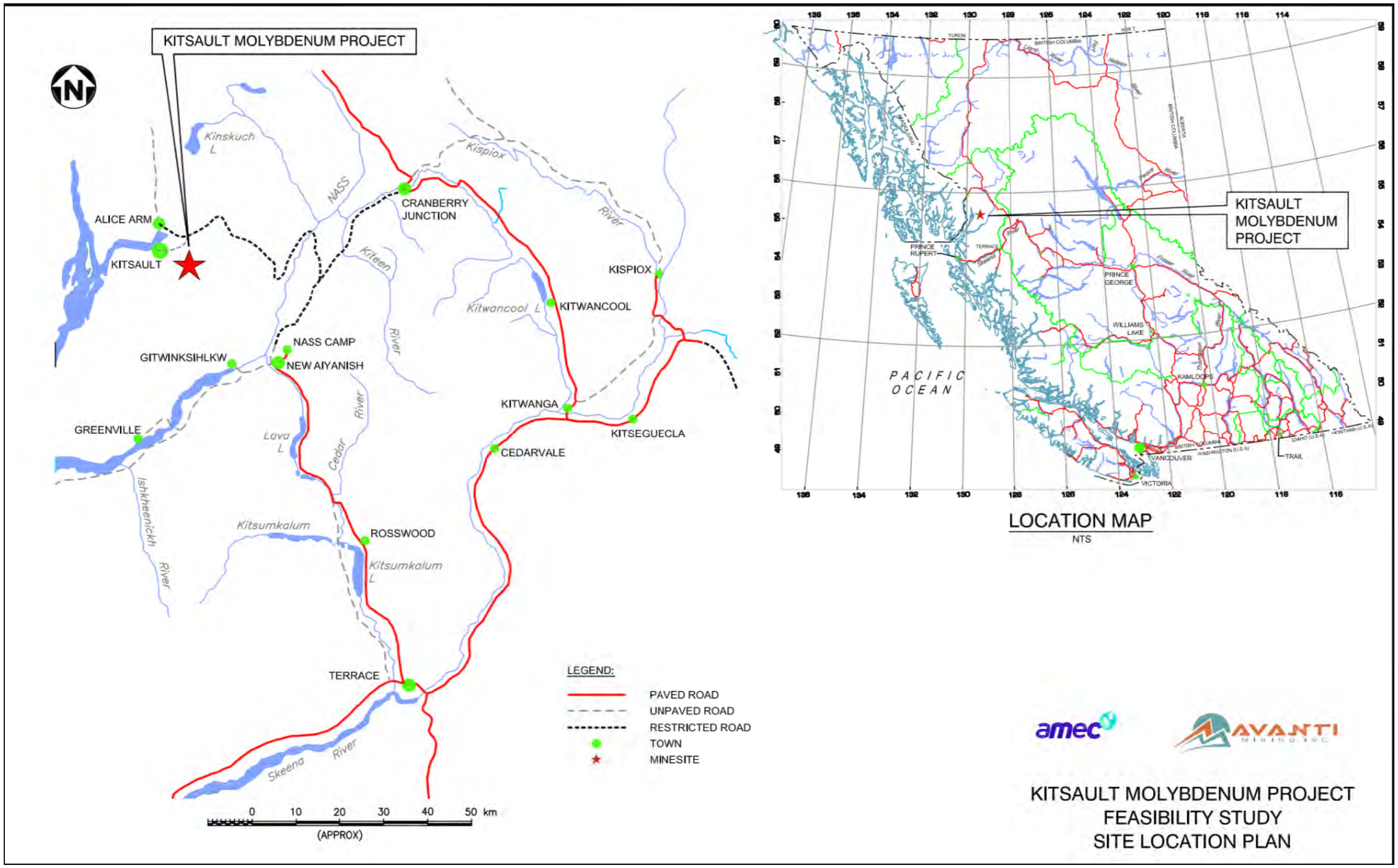


Table 2-1: QPs, Areas of Report Responsibility, and Site Visits

Qualified Person	Site Visits	Report Sections of Responsibility (or Shared Responsibility)
Gary Christie	15 October 2009	Sections 1, 19, 20, 21, 22, and 23
Greg Kulla	23 to 24 June 2010	Sections 2, 3, 4 (excepting Section 4.8.7), 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17.1 and 17.3, and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections
Ryan Ulansky	No site visit	Sections 17.2,17.3, 18.1, 18.2, 18.3, 18.5, and 18.6 and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections
Tony Lipiec	No site visit	Sections 16.1, 16.2, 16.3, 16.5, 18.7, 18.8, 18.9, 18.10, 18.11, 18.12, 18.13, 18.14, and 18.15 and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections
Peter Healey	June 2010	Section 4.8.7 and those portions of the Summary, Conclusions and Recommendations that pertain to that Section.
Michael Levy	8 to 11 September 2008	Section 18.4, and those portions of the Summary, Conclusions and Recommendations that pertain to that Section.
Bruno Borntraeger	29 April, 2010	Sections 16.4 and 18.9, and those portions of the Summary, Conclusions and Recommendations that pertain to those Sections.

2.3 Effective Dates

The report has a number of effective dates, as follows:

- Date of Mineral Resource estimate: 8 November 2010
- Date of Mineral Reserve estimate: 8 November 2010
- Completion of financial analysis: 15 December 2010
- Completion of draft feasibility study: 15 December 2010

The effective date of the Report is the effective date of the draft feasibility study and is 15 December 2010.

2.4 Previous Technical Reports

Avanti has previously filed the following technical reports:

- Grills, F., De Ruijter, M.A., Vicentijevic, M., Volk, J., Levy, M., Healey, P., Day, S., Royle, M., Brouwer, K.J., Schmitt, H.R., and Malhotra, D., 2009: NI 43-101 Pre-Feasibility Study – Avanti Mining Inc. Kitsault Molybdenum Property British Columbia, Canada: unpublished technical report prepared by Wardrop Engineering Ltd for Avanti Mining, Inc., effective date 15 December 2009.
- Volk, J., Healey, P., Levy, M., Steininger, R., Collins, S., Greenaway, G., Dew, H., Schmitt, R., 2008: NI 43-101 Preliminary Economic Assessment Avanti Mining, Inc., Kitsault Molybdenum Property, British Columbia, Canada: unpublished technical report prepared by SRK Consulting Ltd for Avanti Mining, Inc., effective date 3 November 2008.
- Volk, J., and Steininger, R., 2008: NI 43-101 Technical Report on Resources, Avanti Mining, Inc., Kitsault Molybdenum Property, British Columbia, Canada: unpublished technical report prepared by SRK Consulting Ltd for Avanti Mining, Inc., effective date 16 July 2008.

2.5 References

Reports and documents listed in the Reference section of this report were used to support preparation of the Report.

2.6 Technical Report Sections and Required Items under NI 43-101

Table 2-2 relates the sections as shown in the contents page of this Report to the Prescribed Items Contents Page of NI 43-101. The main differences are that Item 25 “Additional Requirements for Technical Reports on Development Properties and Production Properties” is incorporated into the main body of the Report, following Item 19, “Mineral Resource and Mineral Reserve Estimates”.

Table 2-2: Contents Page Headings in Relation to Form 43-101 F1 Prescribed Items—Contents

NI 43-101 F1 Item No.	Form NI 43-101 F1 Heading	Report Section No.	Report Section Heading
Item 1	Title Page		Cover page of Report
Item 2	Table of Contents		Table of contents
Item 3	Summary	Section 1	Summary
Item 4	Introduction	Section 2	Introduction
Item 5	Reliance on Other Experts	Section 3	Reliance on Other Experts
Item 6	Property Description and Location	Section 4	Property Description and Location
Item 7	Accessibility, Climate, Local Resources, Infrastructure and Physiography	Section 5	Accessibility, Climate, Local Resources, Infrastructure and Physiography
Item 8	History	Section 6	History
Item 9	Geological Setting	Section 7	Geological Setting
Item 10	Deposit Types	Section 8	Deposit Types
Item 11	Mineralization	Section 9	Mineralization
Item 12	Exploration	Section 10	Exploration
Item 13	Drilling	Section 11	Drilling
Item 14	Sampling Method and Approach	Section 12	Sampling Method and Approach
Item 15	Sample Preparation, Analyses and Security	Section 13	Sample Preparation, Analyses and Security
Item 16	Data Verification	Section 14	Data Verification
Item 17	Adjacent Properties	Section 15	Adjacent Properties
Item 18:	Mineral Processing and Metallurgical Testing	Section 16	Mineral Processing and Metallurgical Testing
Item 19	Mineral Resource and Mineral Reserve Estimates	Section 17	Mineral Resource and Mineral Reserve Estimates
Item 20	Other Relevant Data and Information	Section 19	Other Relevant Data and Information
Item 21	Interpretation and Conclusions	Section 20	Interpretation and Conclusions
Item 22	Recommendations	Section 21	Recommendations
Item 23	References	Section 22	References
Item 24	Date and Signature Page	Section 23	Date and Signature Page
Item 25	Additional Requirements for Technical Reports on Development Properties and Production Properties	Section 18	Additional Requirements for Technical Reports on Development Properties and Production Properties
Item 26	Illustrations		Incorporated in Report under appropriate section number

3.0 RELIANCE ON OTHER EXPERTS

The QPs, authors of this Report, state that they are qualified persons for those areas as identified in the "Certificate of Qualified Person" attached to this Report. The authors have relied on, and believe there is a reasonable basis for this reliance, upon the following Other Expert reports, which provided information regarding mineral rights, and surface rights in sections of this Report as noted below.

3.1 Mineral Tenure

The QPs have fully relied upon and disclaim information relating to the tenure status for the Project through the following documents:

- Blake, Cassels & Graydon, 2010: Avanti Kitsault Mine: legal opinion prepared by Blake, Cassels & Graydon LLP for AMEC Americas Limited, 7 December 2010.
- Nelsen, C., 2011: AMEC Questions re Title Opinion: Information supplied by Craig J. Nelson, President and CEO Avanti Mining Inc., to AMEC Americas Limited, 25 January 2011; email from Craig Nelsen to Gary Christie, AMEC Kitsault Project Manager.

This information is used in Section 4.3 of the Report.

3.2 Surface Rights

The QPs have fully relied upon and disclaim information relating to the surface rights status for the Project through the following document:

- Nelsen, C., 2011: AMEC Questions re Title Opinion: Information supplied by Craig J. Nelson, President and CEO Avanti Mining Inc., to AMEC Americas Limited, 25 January 2011; email from Craig Nelsen to Gary Christie, AMEC Kitsault Project Manager.

This information is used in Section 4.4 of the Report.

3.3 Royalties

The QPs have fully relied upon and disclaim information relating to encumbrances on the mineral tenure for the Project through the following confidential legal opinion prepared for Avanti:

- Blake, Cassels & Graydon, 2010: Avanti Kitsault Mine: legal opinion prepared by Blake, Cassels & Graydon LLP for AMEC Americas Limited, 7 December 2010; specifically Schedule I of the opinion, and supporting Appendices C, D, E, F, and G.

This information is used in Section 4.5 of the Report.

3.4 Encumbrances

The QPs have fully relied upon and disclaim information relating to encumbrances on the mineral tenure for the Project through the following documents:

- Blake, Cassels & Graydon, 2010: Avanti Kitsault Mine: legal opinion prepared by Blake, Cassels & Graydon LLP for AMEC Americas Limited, 7 December 2010; specifically Schedule H of the opinion.
- Nelsen, C., 2011: AMEC Questions re Title Opinion: Information supplied by Craig J. Nelson, President and CEO Avanti Mining Inc., to AMEC Americas Limited, 25 January 2011; email from Craig Nelsen to Gary Christie, AMEC Kitsault Project Manager.

This information is used in Section 4.6 of the Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The Kitsault Project is situated about 140 km north of Prince Rupert, and south of the head of Alice Arm, an inlet of the Pacific Ocean, within British Columbia (BC). The approximate Project centroids are latitude 55°25'19"N and longitude 129°25'10"E.

The Project contains the closed Kitsault open pit molybdenum mine, and the Roundy Creek and Bell Moly deposits.

4.2 Project Acquisition

On 19 June, 2008 Avanti signed a Kitsault Purchase and Sale Agreement with Aluminerie Lauralco, Inc. (ALI), a wholly owned subsidiary of Alcoa, Inc., to purchase the Kitsault Property. The Kitsault Purchase and Sale Agreement required Avanti to pay US$20 million to ALI for a direct 100% interest in the Kitsault Property.

The acquisition of the Kitsault Property was funded through a US$20 million secured convertible bridge loan from Resource Capital Fund IV L.P. (RCF), and termed the "RCF loan" under the terms of the RCF loan agreement. The RCF loan had a maturity date of 15 July 2009 and an interest rate of 15% per annum. Interest is payable at the end of each calendar quarter in cash or in Avanti common shares. As part of the consideration for the RCF loan, Avanti issued 3,000,000 common shares to RCF on the closing date of the RCF loan. As security for the RCF loan, Avanti granted to RCF a security interest in the Kitsault Property and a pledge of securities in a subsidiary and guarantees.

The acquisition was completed on 17 October 2008. On the closing of the Kitsault Property acquisition, a finder's fee of 2,000,000 common shares was paid to a third party and a success fee of 500,000 common shares was paid to a financial advisor.

ALI can elect (within 90 days of Avanti delivering a feasibility study) to receive either:

- (a) US$10,000,000 in cash at commercial production or in common shares of Avanti within 30 days of election; or
- (b) retain a 1% net smelter royalty on future production.

As security for the payment of the royalty, Avanti granted to ALI a security interest in the Kitsault Property and a pledge of securities in a subsidiary. The security granted to ALI is subordinate to the security provided to RCF for the RCF loan.

On 15 January 2009, in accordance with the terms of the RCF loan agreement, Avanti made an interest payment of US$750,000 on the bridge loan by issuing RCF with 9,248,353 common shares. At the same time, also under the terms of the RCF loan agreement, RCF was issued an additional 1,000,000 common shares because Avanti did not obtain a listing on the Toronto Stock Exchange or TSX-V prior to 15 December, 2008.

On 2 October 2009, an amended and restated convertible bridge loan agreement (the amended loan agreement) was concluded with RCF. Under this agreement US$15,116,667 of the bridge loan was converted into shares, where one common share and one-half of one common share purchase warrant were collectively assigned as an RCF unit. This allowed RCF to purchase, at a fixed exercise price of CDN$0.16 per RCF unit, shares and warrants until 6 November 2013. RCF also agreed to fix the conversion price of the remaining US$5 million of the RCF loan to a specified price of CDN$0.24 until Avanti was able to complete an equity offering; this transaction was termed a convertible loan. After the offering, RCF could convert the US$5 million at the price at which Avanti made any subsequent equity offering. An offering was completed in 2010, so that the conversion price will be CDN$0.20 for the convertible loan. The convertible loan is due 15 June 2012, but Avanti can pay the full outstanding amount at any time.

As a result of these transactions, at the effective date of the Report, RCF held 41.48% of Avanti. Subsequent to the effective date, Avanti have issued additional shares to RCF, and as at 31 December 2010, RCF held 36% of Avanti.

On January 13 2010, Avanti entered into a purchase and sale agreement with TA Mineral Resources Ltd. (TA) and Quadra Coastal Resources Ltd. (Quadra) to purchase a 100% interest in 102 mineral tenements (the TA claims) adjacent to the ALI tenure package. The acquisition was closed on 28 January 2010. Considerations for the deal comprised two cash payments, of $100,000, and $285,000, and issuing of two sets of Avanti units, of 1,500,000 units and 4,000,000 units respectively. An Avanti unit was defined as one common share and one-half of a share purchase warrant exercisable at $0.30 per common share until 28 January 2012. TA and Quadra retain 1.5% net smelter royalty (NSR) on 100 of the mineral tenements. Two tenements, 517367 and 517364, are not included in the NSR.

On 21 April 2010, Avanti signed a definitive agreement with Mr Nicholas Carter to purchase a 100% interest in the two NC claims that are internal to the Project. Consideration for the purchase was CDN$100,000 in cash and issuance of 250,000 Avanti Mining common shares over a four-year period. A 2% net smelter royalty was retained on the claims; however, Avanti may purchase 1% of the net smelter royalty at any time by paying the vendor $1,000,000, thus reducing the royalty burden to 1%.

4.3 Mineral Tenure

4.3.1 Mineral Title in British Columbia

Mineral claims in British Columbia are of two types. Cell mineral claims are established by electronically selecting the desired land on government claim maps, where the available land is displayed as a grid pattern of open cells, each of approximately 450–500 hectares. Payment of the required recording fees is also conducted electronically. This process for claim staking has been in effect since January, 2005, and is now the only way to stake claims in British Columbia. Prior to January, 2005, claims were staked by walking the perimeter of the desired ground and erecting and marking posts at prescribed intervals. Claims staked before January, 2005, remain valid and may be converted into cell claims.

Cell mineral claims may be kept in good standing by incurring assessment work or by paying cash-in-lieu of assessment work in the amount of CDN$4.00 per hectare per year during the first three years following the location of the mineral claims. This amount is increased to CDN$8.00 per hectare in the fourth and succeeding years. Claims staked before January, 2005 may be kept in good standing by incurring assessment work or by paying cash-in-lieu of assessment work in the amount of CDN$100 per mineral claim unit per year during the first three years following the location of the mineral claim. This amount increases to CDN$200 per mineral claim unit in the fourth and succeeding years.

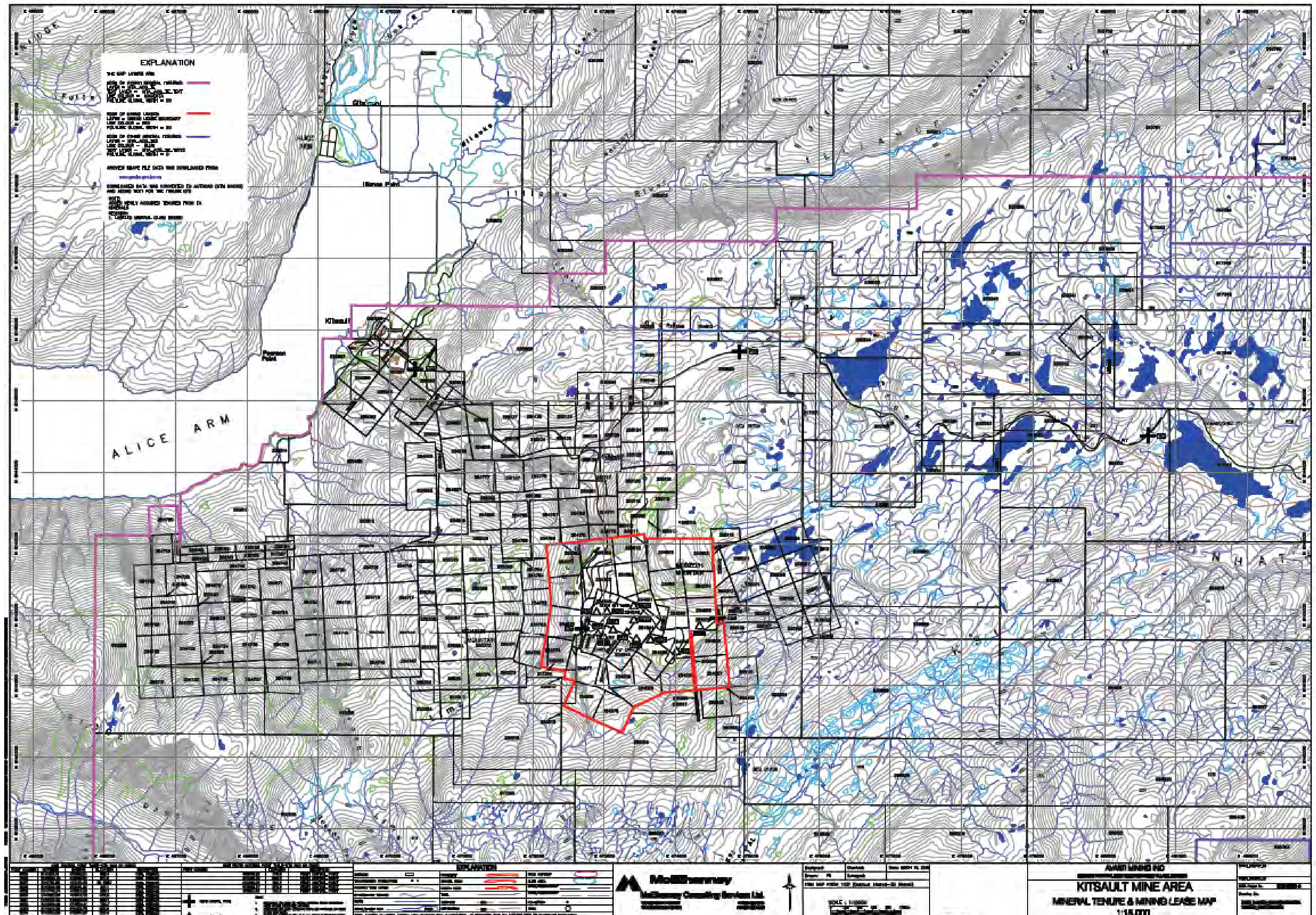
Mineral leases (mining leases) are granted over mineral claims on request, and upon payment of prescribed fees. Survey of the lease boundary may be requested, and if such a request is made, the survey must be undertaken by a British Columbia land surveyor and have the survey approved by the Surveyor General. Mining leases are granted for an initial term of not more than 30 years. If the lease was granted prior to 1 December 1995, it can be renewed for additional 30-year terms.

4.3.2 Project Mineral Tenure

Avanti holds 35 mining leases and 310 mineral claims, covering an area of 43,688 ha (Figure 4-1). Claim details are included as Appendix A.

The claims are held in the name of the wholly-owned Avanti subsidiary, Avanti Kitsault Mine Ltd.

Figure 4-1: Tenure Location Plan



Electronically acquired claims (cell claims) are legally defined by the BC mining titles online (MTO) grid. For claims located prior to 12 January 2005 (legacy claims), a new section was enacted in the Mineral Tenure Act under Section 24.1 (5) on 1 January 2008, which confirms the mapped position of legacy claims as being the prevailing position. As such, the mapped locations of legacy claims are confirmed, making MTO maps the authoritative source for defining the ground location of mineral and placer claims. Mineral claims within the Project are defined by the MTO grid. The mining leases were surveyed by a professional surveyor.

Expiry dates are listed in Appendix A, and are variable. The mining leases have an expiry date of 23 February 2013. As at the Report effective date, all claims and leases were current.

AMEC notes that the 35 mining leases have an annual lease payment due date of 23 February 2011 and a term expiry date of 23 February 2013. Avanti have advised AMEC that the required payments for 2011 to ensure continuity of tenure are underway. Avanti has also advised AMEC that the company plans to submit an application for renewal of the existing leases during 2011, well in advance of the 2013 expiry date. Based on this information, AMEC concludes that it is a reasonable expectation that the mining leases will be renewed, and that Avanti will continue to hold 100% of the mining leases.

In addition, six mineral claims have expiry dates in April 2011, and one in December 2011. Renewal of such claims in BC is not considered to be an issue, providing the statutory requirements have been met. Avanti has advised AMEC that the company plans to submit timely applications for renewal of the claims during 2011. Based on this information, AMEC concludes that it is a reasonable expectation that the mineral claims will be renewed.

Avanti have also advised that additional mining lease applications will be lodged to cover portions of the areas proposed as tailings dam and plant site locations.

4.4 Surface Rights

In British Columbia, surface rights are granted under the mineral leases from the Crown. Mineral claims surface rights are obtained through the process of converting claims to leases.

Information on surface rights in this sub-section is taken from the Avanti 2010 Annual Information Form (AIF), and is supported by written confirmation provided by Avanti to AMEC.

The majority of the leases and claims are located under Provincial Crown lands. Four claims are located under privately-owned lands at the former Kitsault town site that is situated on the Alice Arm.

Surface rights held by Avanti, which overlap the non-Crown portions of the mineral leases and claims include three land parcels, totalling 14.497 ha, and a statutory right-of-way (Statutory Right of Way No. BX201679) for access through Kitsault town site privately-owned lands:

- Parcel Identifier 015-583-031, District Lot 2656 Cassiar District (2.34 ha)
- Parcel Identifier 015-562-531, Block A District Lot 35 Cassiar District (12.1 ha)
- Parcel Identifier 015-562-611, Block B District Lot 35 Cassiar District (0.057 ha)
- Right of Way over:
  - District Lot 2757 Cassiar District
  - Block B (Plan 9849) District Lot 63 Cassiar District
  - Block A District Lot 63 Cassiar District
  - Block B District Lot 63 Cassiar District
  - Block A District Lot 64 Cassiar District Except Plan 6531
  - District Lot 6930 Cassiar District
  - District Lot 6931 Cassiar District
  - Lot 1 District Lot 64 Cassiar District Plan 6531.

The site powerline is owned by BC Hydro, and the powerline easement is in the name of BC Hydro.

Forestry road access and special use permits are discussed in Section 4.7.1.

4.5 Royalties

Information on royalties in this sub-section is taken from the Avanti 2010 Annual Information Form (AIF), and is supported by legal opinion provided to AMEC.

4.5.1 1975–1976 Royalty Agreement

A royalty is payable by the Climax Molybdenum Company of British Columbia (CMC) to Bell Molybdenum Mines Limited (Bell) under an agreement dated 17 February 1976 (the 1975–1976 Royalty Agreement) on each tonne of ore mined and removed from claims 250340, 250341, 250342, 250343, 250344, 250345, 250346, 250347, 250390, and 250391, covering the Bell Moly deposit only. No Mineral Reserves are currently estimated within the Bell Moly claims. The royalty is as follows:

US$0.10/t of ore mined from the above-listed claims and treated thereon or shipped to Climax's molybdenum concentration mill at Kitsault, BC or another place of treatment, provided that for each US$0.25 that the base price per pound, as defined therein, of molybdenum contained in concentrate increases above or decreases below US$2.50, the royalty shall in like manner increase or decrease by US$0.01.

AMEC was supplied with legal opinion that indicates the current ownership of this royalty is in question, as the corporation with the apparent rights has been dissolved.

4.5.2 1984 Royalty Agreement

A royalty purchase agreement, dated 31 December 1984 (the 1984 Royalty Agreement) between Amax of Canada Ltd and Amax Zinc (Newfoundland) Limited (Amax Zinc), gave Amax Zinc a 9.22% net cash flow interest over the entire Kitsault property, described in the 1984 Royalty Agreement as comprising mining leases numbered M157 to M191 inclusive, corresponding to 35 mining leases (refer to Appendix A).

This royalty is considered in the cashflow analysis in Section 18.12, where it is termed the “pre-tax cash royalty”. The royalty amounts to about $289 million with payment starting in the third year after the capital and operating costs on a cumulative basis are exceeded by the cash flow from net revenues.

4.5.3 ALI Agreement

Under a Purchase and Sale Agreement (the ALI Agreement) dated 19 June 2008, ALI has a 1% NSR on future production subject to the right, within 90 days from the presentation of a feasibility study, to elect to surrender the NSR in exchange for either an additional US$10 million payment (payable at commercial production or in Avanti shares within 30 days after the date of the election). Leases subject to the royalty are indicated in Appendix A. The 1% NSR figure was used in the cashflow analysis in Section 18.12, where it is termed the “NSR Royalty”, and amounts to about US$64 million over the mine life.

4.5.4 TA Agreement

Under a Purchase and Sale Agreement (the TA Agreement) dated 13 January 2010, between TA Mineral Resources Ltd., Quadra Coastal Resources Ltd, Avanti Mining Inc., and Avanti Kitsault Mine Ltd., TA and Quadra retain a 1.5% NSR on 100 of the mineral tenements within the TA claim group. Two tenements, 517367 and 517364, are not included in the NSR. No Mineral Reserves are currently estimated within these claims.

4.5.5 NC Agreement

Under a Purchase and Sale Agreement (the NC Agreement) dated 21 April 2010, between Nicholas Carter, Avanti Mining Inc., and Avanti Kitsault Mine Ltd., Nicholas Carter retained a 2% net smelter royalty on the two NC claims. However, Avanti may purchase 1% of the net smelter royalty at any time by paying the vendor $1,000,000, thus reducing the royalty burden to 1%. No Mineral Reserves are currently estimated within these claims.

4.6 Encumbrances

Information on encumbrances in this sub-section is taken from the Avanti 2010 Annual Information Form (AIF), and is supported by legal opinion provided to AMEC.

In a “Wrap Up Agreement” dated 29 September 2005 between CMC and ALI and Alumax Inc., ALI covenanted and agreed with CMC that it would not dispose of any of the leases, claims, or lands required for or associated with the completion of the work program, as defined in the Wrap Up Agreement, until the completion of the pit remediation and reclamation work program. This program was completed in 2006.

There are two claims of liens, filed in 1998 under Form 5 of the Builders Lien Act in respect of the following 11 leases: 254543, 254544, 254545, 254546, 254547, 254548, 254563, 254569, 254571, 254573, and 254576. The first claim, to the amount of CDN$820,000, was filed by 508514 BC Ltd, against Amax of Canada, now ALI. The second claim, to the amount of CDN$40,917.15, was filed by Brian Wasson, an agent for Purves Ritchie Equipment Limited, against Amax of Canada, now ALI. A “Certificate of Pending Litigation” and “Writ of Summons”, were filed against ALI and Climax Canada Ltd in 1999 by 508514 BC Ltd. against the 11 claims, and a land parcel that has the parcel identifier 015-562-531, Block A District Lot 35 Cassiar District (12.1 ha); no other pleadings were filed with respect to the Writ of Summons. AMEC was provided with legal opinion that indicated that no discharges of the claims of lien have been filed with the Ministry of Energy, Mines and Petroleum Resources. AMEC considers that there is a reasonable expectation that the liens can be discharged either by negotiation or by outright payment, and the total lien amount of US$860,917.15 does not present a material risk to the Project. Avanti has advised AMEC that the company is planning to make a court application to have the liens removed.

There is also a trust indenture between Bell and The Canada Trust Company (Canada Trust) dated 1 July 1980. The trust indenture is a charge over the rights of Bell to receive the royalty payable by CMC to Bell on the Bell Moly claims. Legal opinion provided to AMEC indicates that Canada Trust can enforce the charge on Bell by default, and includes corporate dissolution. Additional information would be required to determine whether the charge has expired, been satisfied, or enforced.

4.7 Permits

Mining projects in British Columbia require numerous Provincial and Federal permits, approvals, licenses, and authorizations. Avanti holds some permits, related to previous mining activities, and will need to apply for additional permits prior to any mining recommencement.

4.7.1 Permits Acquired as Part of July 2008 Acquisition

Permit number M-10, an Amended Permit Approving Reclamation Program issued by the BC Ministry of Energy, Mines, and Petroleum Resources (MEMPR), supports reclamation activities associated with the Kitsault mine. Since 1996, reclamation has included building demolition, rock dump re-sloping, revegetation, remediation of the pit area and the Orange Pond. Remediation was concluded in 2006.

In 2008, an amendment to the conditions of the permit was approved by MEMPR; the approval included a number of conditions, including:

- Submission of a reclamation/closure update by 2011
- Continued monitoring of site drainage chemistry and vegetation
- Continued monitoring of all ditches, culverts, and the settling pond
- Submission of an annual reclamation report each year by 31 March
- Development of a contingency plan should the 2006 pit remediation work fail
- Collection and treatment of mine discharge if water quality monitoring indicates that water quality has been affected at water monitoring point W-01.

Avanti has advised AMEC that the annual reclamation reports have been filed, a contingency plan has been developed, and the reclamation/closure update is expected to be filed by 31 March 2011.

A road access permit, No. 08-7876-01, issued by the BC Ministry of Forests and Range (MFR), was acquired from ALI. The permit allows for industrial use of a forest service road.

ALI also transferred Special Use Permit 9228, issued by the MFR. A special use permit gives non-exclusive authority to a company or an individual to occupy and use an area of Crown Land, within a designated Provincial Forest, when they have demonstrated to the District Manager that the intended use is in accordance with the Provincial Forest Use Regulation.

4.7.2 Permits Required to Support Development

The primary BC authorization for the development of the Kitsault Project is a permit under the BC Mines Act. Kitsault already has a valid M-10 permit; however, Avanti will have to obtain an amendment to the M-10 permit, as this currently only permits reclamation activities.

The BC Mines Act permit process includes an environmental assessment (EA) as described in Part 10 of the Health, Safety, and Reclamation Code for Mines in British Columbia. In any situation where the BC Environmental Assessment Act (BCEAA) does not apply, this Act constitutes the primary Provincial review process. Once a certificate is granted under the BCEAA, the Northwest Mine Development Review Committee will assist in coordinating the issuance of other major Provincial authorizations required for the Project, and the Federal Major Projects Review Office may do likewise for Federal authorizations required.

Table 4-1 is a preliminary list of the BC Provincial authorizations, licences, and permits that Avanti will potentially be required to obtain. Table 4-2 is a preliminary list of the required and potential Federal authorizations, licences, and permits Avanti may need to obtain to operate the Project.

Table 4-1: BC Authorizations, Licences, and Permits Required for Kitsault Mine Project

BC Government Permits and Licences	Enabling Provincial Legislation
Amendment to Permit Approving Work System & Reclamation Program (Mine Site – Initial Development)	Mines Act
Amendment to Permit Approving Work System and Reclamation Program (Pre-production)	Mines Act
Amendment to Permit Approving Work System and Reclamation Program (Bonding)	Mines Act
Amendment to Permit Approving Work System and Reclamation Program (Mine Plan – Production)	Mines Act
Permit Approving Work System and Reclamation Program (Gravel Pit/Wash Plant/Rock Borrow Pit)	Mines Act
Mining Lease amendment (if required)	Mineral Tenure Act
Water Licence – Notice of Intention (Application)	Water Act
Water Licence – Storage and Diversion	Water Act
Water Licence – Use	Water Act
Water Licence – Construction of fences, screens and fish or game guards across streams to conserve fish or wildlife	Water Act
Water Licence – Alteration of Stream or Channel	Water Act
Authority to Make a Change In and About a Stream – Notification	Water Act / Water Regulation
Authority to Make a Change In and About a Stream – Approval to Make a Change	Water Act / Water Regulation
Authority to Make a Change In and About a Stream – Terms and Conditions of Habitat Officer	Water Act / Water Regulation
Occupant Licence to Cut – Access Road	Forest Act
Occupant Licence to Cut –Mine Site/Tailings Impoundment	Forest Act
Occupant Licence to Cut – Gravel Pits	Forest Act
Occupant Licence to Cut – Borrow Areas	Forest Act
Road Use Permit (existing Forest Service Road)	Forest Act
Special Use Permit – Access Road	Forest Practices Code of British Columbia Act
Licence of Occupation – Staging Areas	Land Act
Licence of Occupation – Pump House/Water Discharge Line	Land Act
Licence of Occupation – Borrow/Gravel Pits	Land Act
Surface Lease – Minesite Facilities	Land Act
Waste Management Permit – Effluent (Sediment, Tailings and Sewage)	Environmental Management Act
Waste Management Permit – Air (Crushers, Ventilation, Dust)	Environmental Management Act
Waste Management Permit – Refuse	Environmental Management Act
Special Waste Generator Permit (Waste Oil)	Environmental Management Act (Special Waste Regulations)
Sewage Registration	Environmental Management Act
Camp Operation Permits (Drinking Water, Sewage Disposal, Sanitation and Food Handling)	Health Act / Environmental Management Act
Waterworks Permit	Drinking Water Protection Act
Fuel Storage Approval	Fire Services Act
Food Service Permits	Health Act
Highway Access Permit	Highway Act

Table 4-2: Federal Authorizations, Licences, and Permits Required for Kitsault Mine Project

Federal Government Approvals and Licences	Enabling Federal Legislation
CEAA Approval	Canadian Environmental Assessment Act
Metal Mining Effluent Regulations (MMER)	Fisheries Act / Environment Canada
Fish Habitat Compensation Agreement	Fisheries Act
Section 35(2) Authorization for harmful alteration, disruption or destruction of fish habitat	Fisheries Act
Navigable Water: Stream Crossings Authorization	Navigable Waters Protection Act
Explosives Factory Licence	Explosives Act
Explosives Magazine Licence	Explosives Act
Ammonium Nitrate Storage Facilities	Canada Transportation Act
Radio Licences	Radio Communications Act
Radioisotope Licence (Nuclear Density Gauges/X-ray Analyzer)	Atomic Energy Control Act

Note: A Fish Habitat Compensation Agreement and Section 35(2) Authorization is required if a Fisheries Act HADD (harmful alteration deterioration or destruction of fish habitat) occurs.
A Navigable Water: Stream Crossings Authorization is required if Transport Canada determines there to be a potential effect on navigation from the Project under the Navigable Waters Protection Act.
The Project will be subject to the Metal Mining Effluent Regulations (MMER) enabled by the Fisheries Act. The regulations require that Avanti achieve the specified effluent discharge standards, to implement a comprehensive Environmental Effects Monitoring program, and to provide compensation for the harmful alteration of fish habitat should this occur.

4.8 Environment

4.8.1 Supervising Authorities

New and modified mining projects in BC are subject to environmental assessment and review prior to certification and issuance of permits to authorize construction and operations. Generally, the scope, procedures, and methods of the assessment are flexible and tailored specifically to the project circumstances. These are defined in an approved application information requirements (AIR). Federal government review under the Canadian Environmental Assessment Act (CEAA) is an independent review, but is harmonized with the Provincial review as the Federal agencies, deemed responsible authorities (RAs), will ascertain if the Project invokes federal “triggers,” thereby resulting in an applicable level of Federal review (e.g., none, screening level assessment, or comprehensive review).

The Kitsault Project will undergo comprehensive study as required by the Comprehensive Studies Regulation of the CEAA, with key triggers being the requirement for a Fisheries Act permit, explosive permit under the Explosives Act, and potentially Navigable Waters Protection Act permits.

Any required federal and provincial EA processes must be completed before the respective jurisdictions can issue permits, licences, or other authorizations required to allow the development to proceed.

4.8.2 Current Status

The Kitsault mine is a permitted site with considerable past mining activity and basic infrastructure in place. It is not an "abandoned mine" because a Mines Act Permit is in place, and there are outstanding reclamation obligations for which the Ministry of Natural Resources Operation (MNRO) holds security. The project meets the criteria that constitute a non-reviewable project under Part 3 of the Reviewable Project Regulation. Re-opening the mine could well be considered a modification of an existing project. In a letter dated 9 November 2009, the BC Environmental Assessment Office (EAO) concluded that the Project was not reviewable under the BCEAA.

The Project does not automatically trigger BCEAA review because of the grandfathering provision of Section 51 of the Environmental Assessment Act, which applies to Avanti's existing Permit M-10. Avanti had two choices regarding an environmental assessment: the BC environmental assessment review process or an assessment as a major mine under the Mines Act review process administered by the Northwest Mine Development Review Committee. Previous discussions with the Nisga'a Lisims Government (NLG) had revealed that they were of the opinion that the only environmental assessment process that could comply with the Nisga'a Final Agreement (Treaty) (NFA) was the BCEAA.

On 19 March 2010, Avanti submitted an application (Project Description) to the BC EAO to build and operate an open pit molybdenum mine with an extraction rate of 40,000 t/d of ore and requested that the Project be designated as a reviewable project under the BCEAA to initiate an EA for the proposed project. On 18 April 2010, Avanti received an order from the BC EAO under Section 7(3) of the Act that the proposed project be designated a reviewable project under the BCEAA. On 24 June 2010, Avanti received a Section 10 (1)(c) order from the BC Government ordering that:

- The proposed Project requires an environmental assessment certificate
- The Proponent may not proceed with the proposed project without an assessment.

Since then, Avanti has been engaged in discussions with regulatory agencies, the public, and First Nations on the AIR for the EA. In September 2010, Avanti submitted a draft AIR to complete an EA to the BC Government and Canadian Environmental Assessment Office for review and comment by Provincial, Federal, local authorities and First Nations. The deadline for comments on the draft AIR was 10 December 2010.

On 24 November 2010, Avanti received a Section 11 order from the BC Government that established the formal scope, procedures, and methods concerning the EA. In addition, the Section 11 order set out the consultation requirements, including which First Nations were to be involved, for the Project. With the Section 11 order, Avanti can move to finalize the AIR following a 30-day public comment period which may commence in the first half of 2011.

Avanti also began the Federal environmental assessment process with the submittal of the Project Description. An Amendment to this Project Description was submitted to the Canadian Environmental Assessment Agency on 4 August 2010 addressing the specific federal "triggers" under the CEAA. On 18 August 2010, Avanti received an email from the Canadian Environmental Assessment Agency that the amended Project Description had been accepted and the formal Notice of Commencement (NoC) would be delivered within 90 days. The NoC was received from the Canadian Environmental Assessment Agency on 8 November 2010 and stated that a federal comprehensive study would be required. Under Section 5 of the CEAA, an environmental assessment is required in relation to this project because Fisheries and Oceans Canada may issue a permit or licence under subsection 35(2) of the Fisheries Act, and Natural Resources Canada may issue a permit or license under paragraph 7(1)(a) of the Explosives Act.

A Canada–BC agreement on environmental impact assessment outlines a harmonized process that satisfies the requirements of both the BC Environmental Assessment Act and the Canadian Environmental Assessment Act. The process is managed by the BC Environment Office with as many common documents, reviews, and public hearings as possible to coordinate efforts between the various agencies and First Nations.

A considerable amount of environmental work, geochemical characterization, and geotechnical investigation has been carried out by previous owners of the historical Kitsault mine, by Avanti and by its consultants. Avanti anticipates filing an EA with the Provincial and Federal regulatory agencies during the first half of 2011.

4.8.3 Baseline Studies

Historical mining in the Kitsault area has resulted in the development of baseline data for more than 20 years. A number of Project-specific baseline studies were completed by Rescan Environmental Services Ltd (Rescan) and SRK Consulting (SRK) in 2008 and 2009, and AMEC, SRK, and Knight Piésold in 2010. Studies and monitoring included

- Completion of dust-fall monitoring for air quality determination purposes
- Completion of noise level monitoring to collect background noise data that could be used to evaluate the potential and cumulative effects of sensitive receptors to noise emissions associated with activities of the Project
- Installation of an automated meteorological station in the Project area
- Installation of three hydrometric stations at Patsy Creek near the mouth, Lime Creek below Patsy Creek, and Lime Creek near the mouth
- Installation of two groundwater monitoring wells
- Completion of ground water baseline data, including drilling of 22 boreholes, installation of 22 monitoring wells; hydraulic conductivity testing of the subsurface formations; monitoring groundwater levels; and determining baseline groundwater quality
- Collection of monthly water samples from four sites; collection of quarterly water samples from two sites; collection of weekly (freshet) samples from four sites; sampling of wetlands and Patsy Lake
- Collection of physical oceanography data; including seven water quality samples; ten sediment samples; and marine biota samples
- Completion of a survey of 97 sites in the study area; analysis for metals
- Completion of a survey of 73 wetland sites; wetland mapping identified 82.45 ha of wetlands within the study area
- Identification of six ecosystems listed by the British Columbia Conservation Data Centre (CDC) in the study area
- Completion of a survey of terrestrial and marine wildlife; including aerial and ground-based surveys for mammals, birds, and amphibians.
- Establishment of a visual landscapes baseline by inspection of eight sites
- Completion of an Archaeological Impact Assessment under the Heritage Conservation Act permit 2009-0085. A total of 785 shovel tests were conducted at 86 locations within the Project area; no archaeological sites were identified, and seven historical features were found
- Completion of a desk-based review of information available primarily in published reports and data. Phone interviews were conducted to obtain additional statistical and socio-economic information from provincial government offices
- Completion of a comprehensive overview of regional land and resource use in and around the project area was prepared from desk-based research.

4.8.4 Proposed Environmental Management

An Environmental Management System (EMS) will be designed to ensure a consistent approach to responsible environmental management. The EMS will emphasize key stakeholder engagement initiatives for environmental management, including educational and consultation programs with local First Nations communities and others.

A project-specific environmental management plan (EMP) will be designed to provide an integrated, systematic approach to environmental management and will help interested parties understand the phases and activities of the project. The EMP will be based on the principle of adaptive management. It is Avanti's intention to develop an EMP that is compliant with and can be certified and audited by the principles of ISO 14001:2004, an international certification.

4.8.5 Bonds

Section 10 of the Provincial Mines Act stipulates that the Chief Inspector of Mines may, as a condition of issuing a permit, require that the mine owner provide monetary security for mine reclamation and to provide for protection of, and mitigation of damage to, watercourses and cultural heritage resources affected by the mine. Security will remain in effect until such time as the Chief Inspector of Mines determines that all reclamation obligations have been met and the Company can be indemnified. Avanti has posted a CDN$100,000 bond, which is required under the current M-10 permit.

Avanti currently has an approved Notice of Work permit to conduct its exploration and feasibility work programs on the Project. Avanti has posted an additional CDN$119,900 bond as required under this permission.

4.8.6 Decommissioning and Reclamation

The Kitsault Project will be developed, operated, and closed with the objective of leaving the property in a condition that will mitigate potential environmental impacts and restore the land to an agreed-upon land use and capability. Mine decommissioning and reclamation activities will be carried out following the completion of production. The proposed mine development lies in very rugged and steep terrain, and much of the development area has already been disturbed from the former Kitsault mine activities. Based on the current closure work, limited sources of good-quality soil/growth medium will be available for reclamation. Therefore the degree of new disturbance has been minimized as much as possible.

At the end of mine life, the open pit will be allowed to fill with water. Diversion channels would be breached as part of the closure plan, and the flow would be directed into the open pit. More detailed hydrological and hydrogeological studies will be undertaken during the final design phase to refine the flooding model for the pit. A safety berm will be constructed around the pit.

Waste rock facilities will be re-sloped and vegetated. Closure of the tailings management facility (TMF) will involve maintaining a water cover or lake over the tailings in perpetuity. The TMF pond surface elevation will be regulated and is expected to fluctuate throughout the year.

Buildings and structures at the mine site, including the process plant, the camp, the explosives plant, the administration and maintenance shop, the laboratory, the site roads, the fuel storage area and the explosives storage area, will be demolished at closure. Salvageable items within the buildings will be removed from site and sold. Hazardous wastes will be removed from site and disposed of in an approved facility. Most of the non-hazardous, inert building materials will be disposed of in an on-site landfill or placed in the bottom of the open pit. The tailings and reclaim water pipelines will be removed and disposed of in the open pit. Concrete footings will be broken up and disposed of in the open pit. Any metal-contaminated soils will be removed and disposed of in the tailings facility. Hydrocarbon-contaminated soils will be excavated and treated on-site in a land farm. Following removal of the facilities and any associated contamination, the disturbed areas will be re-graded, capped with topsoil where needed, and fertilized and seeded with native species.

Some of the roads on site will be maintained post closure for ongoing site maintenance and monitoring. This will include the main road to the Kitsault town site and any access road for post-closure maintenance. Where the roads can be reclaimed, culverts will be removed, stream crossings re-graded, and surfaces scarified to encourage vegetation growth.

Acid rock drainage (ARD) is not likely to start during the operating life of the mine, and there is expected to be a lag time of decades before management of potentially acid-generating (PAG) rock and ARD will need to be considered. This will negate the need for water treatment during the life of the mine and in the immediate post-closure period. The seepage from the TMF and the waste rock facility will be allowed to discharge directly to the newly formed pit lake.

However, an allowance for water treatment of the pit lake at about 30 years after closure of mine has been included in the post-closure costs.

The level of post-closure monitoring will be a function of the environmental performance of the mine site. Monitoring requirements are expected to decrease over time as the potential impacts to the receiving environment decrease. Under the current scenario, however, there may be a need for effluent treatment sometime in the future, which in turn would necessitate a post-closure monitoring program.

Under the current mine plan (see Section 18) decommissioning costs are incurred in 2030, 2031, and 2032. Costs from 2033 to 2060 are based on ongoing water quality sampling, site surveillance, and maintenance. In 2060, the capital costs are increased to cover the possible construction of a water treatment system, and the water treatment operating and maintenance costs start in 2061. Closure costs are estimated at CDN$31.4M.

4.8.7 Existing Environmental Liabilities

Tailings

During historic operational phases, tailings from the Kitsault mine were deposited into Alice Arm. This was permitted under the "Alice Arm Tailings Deposit Regulations", under the Federal Fisheries Act, which explicitly allowed for the deposit of mill process effluent from the Kitsault mine into the waters of Alice Arm, BC. Avanti advised AMEC that based on due diligence conducted during Project acquisition in 2008, there is no known risk of environmental statutory liability under the Fisheries Act associated with the Alice Arm tailings deposit.

Reclamation

Reclamation commenced in 1996 and was completed in 2006 (refer to Section 4.7.1). Monitoring of the area, in relation to environmental commitments, is ongoing. The Kitsault mine closure and reclamation is regulated by the Kitsault Mine Reclamation Workplan (SRK, 1997) and is administered by SRK. SRK conducts yearly assessments of the property to monitor reclamation progress. The on-site investigations completed as part of the annual reclamation reporting requirement have concluded that water quality of discharge from the Kitsault mine site continues to meet all applicable water quality guidelines. Specifically:

- None of the waste rock or low-grade ore is currently discharging net acidic drainage
- Seeps emerging from Clary Dump, Patsy Dump, and the Mill Area are similar in chemical composition

- Seeps emerging from below the original low grade ore stockpile have higher molybdenum and sulphate concentrations than seeps from other areas, likely due to the greater mineralization present in the low-grade ore.

With regards to revegetation of the site, ongoing inspections have concluded that:

- The planted trees/shrubs are continuing to increase in size and are growing well at all of the reclamation sites
- A considerable amount of natural establishment is occurring at the sites
- The sites are becoming productive and are sustaining tree/shrub growth
- Sampling results for foliar metal concentrations indicate that the majority of elements are within the “normal/adequate” range of dietary tolerances for beef cattle.

A due diligence environmental audit completed on the property by SRK in 2008 concluded that all the physical works associated with reclamation had been completed and ongoing monitoring, site maintenance and the preparation of an annual reclamation report were the only outstanding financial liabilities.

The audit concluded that there were three areas of the site that should be monitored for water quality changes in the future. These areas are the Patsy and Clary Dumps and the pit. Both dumps have been weathering in place for over 25 years with no significant change in seep quality. It is unlikely that a sudden change in seep quality will occur in the near future.

The pit, and more specifically the Orange Pond, is the only area where there has been acidic drainage. This was remediated in 2006 by admixing limestone with the weathered intrusives on the west side of the central core and covered with a low permeability cap. These remedial works are being monitored to verify the continued efficacy.

Exploration

At Bell Moly the only evidence of past exploration activity are faint traces of drill pads and access trails. At Roundy Creek, there are two small adits and associated dumps.

4.9 Socio-Economic Studies

The four Nisg̲a’a communities on Nisg̲a’a Land are the closest to the proposed mine site. They are the following: Gitlaxt’aamiks (New Aiyansh); Gitwinksihlkw; Laxgalts’ap; and Gingolx and any surrounding populations. The Nisg̲a’a Lisims Government (NLG) has also provided guidelines to Avanti for the preparation of an Economic Social and

Cultural Impact Assessment that complies with Chapter 8(f) of the Nisga'a Final Agreement. Avanti, BC, and Federal agencies are in final discussions with NLG regarding this assessment.

The communities of Prince Rupert, Smithers, and Terrace would have a reasonable likelihood of providing labour, goods, and services to the Project. Kitimat is farther away and has an economic base tied to manufacturing (aluminium and wood products) rather than construction or mineral development. Prince Rupert will be included in the economic and social effects assessment if it plays a measurable role in shipment/transhipment of ore or mine-related materials.

Other nearby communities and rural populations that could interact with Project activities include Kitimat Stikine Regional District Electoral Area A (RDEA A) and the District Municipality of Stewart, the communities and rural populations in Kitimat Stikine RDEA B (Hazelton, New Hazelton, and 10 Indian reserves), the communities and rural populations in Kitimat Stikine RDEA C1 (around Terrace) and Kitimat Stikine RDEA E, and the communities and rural populations in Bulkley Nechako RDEA A (the area around Smithers).

4.10 Consultation with Nisga'a and First Nations

The Kitsault mine area falls outside of Nisga'a Lands owned by the Nisga'a Nation, under the terms of the Nisga'a Final Agreement (NFA), which became effective on 11 May 2000. However, it is within the Nass Area and the Nass Wildlife Area (as defined in, and governed by the NFA), and as such it is subject to constitutionally-protected rights of the Nisga'a Nation under the terms of the NFA.

The NFA states that if the proposed mining activities at the Kitsault Mine area may reasonably be expected to have adverse environmental effects on residents of Nisga'a Lands, the Nisga'a Lands, or NFA interests, then a specific process for consultation by either or both of the Federal or Provincial government, as the case may be, is set out in the NFA. In addition, when an EA is carried out under Provincial or Federal law, the NFA grants specific rights to the Nisga'a Nation in respect of any environmental assessment process. The NFA also enumerates various requirements that are additional to the requirements under EA legislation.

Other than the Nisga'a Nation, Avanti is not aware of any other First Nations that may have aboriginal rights, interests, or claims relevant to the proposed mining activities at the Kitsault Mine area. Final confirmation will be obtained from BC Ministry of Aboriginal Relations and Reconciliations' office responsible for treaty negotiations.

4.11 Comment on Section 4

In the opinion of the QPs, the information discussed in this section supports the declaration of Mineral Resources and Mineral Reserves, based on the following:

- Legal opinion provided to AMEC indicated that Avanti holds 100% of the Project
- Information from legal experts supports that the mining tenure held is valid and is sufficient to support declaration of Mineral Resources and Mineral Reserves
- Avanti advised AMEC that Avanti holds sufficient surface rights in the Project area to support the mining operations, including access and power line easements
- Three permits were acquired with the Project from ALI, a remediation permit, a forest roads access permit, and a special usage permit. These support reclamation monitoring activities. Reclamation of the 1980s mining operation was completed in 2006
- Avanti will need to apply for additional permits as appropriate under local, Provincial, and Federal laws to allow mining operations.
- Avanti anticipates filing an EA with the Provincial and Federal regulatory agencies during the first half of 2011
- At the effective date of this Report, the major environmental liabilities from previous activities consist of monitoring activities related to the completed site remediation of the Kitsault mine
- All Avanti drill sites are reclaimed on completion of the drill hole
- Closure provisions for the planned mining operation are considered in the mine plan and are preliminary in nature.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

The Project is accessed via a 83 km long gravel road from Nass Camp on the Nisga'a Highway, 120 km north of Terrace, BC. The Project is also accessed by floatplane or boat from Prince Rupert, BC, to the former Kitsault town site, a distance of about 140 km. From the town site, a gravel road is traversed to the Project site.

The road access from the Kitsault town site is covered by a statutory right of way held by Avanti, which allows the company to use the roads within the town of Kitsault for mine-related activities. Litigation that was launched on 16 September, 2008 by the owner of the town of Kitsault, Kitsault Resort Ltd. (KRL), in relation to the right-of-way was resolved in favour of Avanti on 24 August 2010. KRL have subsequently appealed this decision.

Access to the Bell Moly portion of the property is by all-terrain vehicle over primitive trails. Access to Roundy Creek is by gravel road to within a few hundred metres of the adits and then by foot.

5.2 Climate

The Kitsault Project is in a temperate coastal area. January is the coldest month, with an average minimum temperature of -2.1°C; the warmest month is August with an average maximum temperature of 16.7°C. Combined rainfall and snowfall on average is about 2 m.

Although exploration activities can be curtailed by snowfall, the former mining operations ran year round. The projected mining operation is also expected to be able to be conducted on a year-round basis, with appropriate management and control of high-snowfall events.

5.3 Local Resources and Infrastructure

The closest towns to the Project are the town of Kitsault, the hamlet of Alice Arm, on the opposite side of the inlet from Kitsault, and Prince Rupert. The Project is relatively close to the town of Terrace, which can provide most services. Most of the necessary external infrastructure is already in place.

5.3.1 Access

A series of Forest Service roads and a private gravel road connect the proposed mine site to Nass Camp, north of New Aiyansh, Rosswood, and Terrace. This road is approximately 83 km long and parallels the powerline from the BC Hydro New Aiyansh substation. Avanti owns Special Use Permit (SUP) 09228 for the private section of this road and has road use permits for the public sections. The feasibility study envisages that the road will be upgraded and maintained regularly for use as the main access road to site.

The mine site will also need a network of general vehicle access roads around facilities, service roads to remote structures, and haul roads.

The existing barge facilities both within the Kitsault town site and adjacent to it will be used during the construction phase of the Project. Facilities for offloading equipment, aggregate, and other supplies were constructed during previous mining developments. No new barge-loading facilities are currently planned

5.3.2 Personnel

Part of the workforce will come from surrounding communities and the rest will commute weekly or bi-monthly from outside the immediate area.

5.3.3 Existing Infrastructure

The Kitsault mine site includes the Kitsault open pit, reclaimed mill foundations, and several mine dumps. During the most recent production period, CMC maintained the Kitsault town site for its employees. The town site was subsequently sold to a third-party and is not available to Avanti.

5.3.4 Proposed Infrastructure

Kitsault Project infrastructure will consist of:

- An open pit
- A camp/accommodation complex
- A processing plant
- Maintenance and administration facilities
- A tailings management facility (TMF)
- Various ancillary buildings
- Diversion ditches

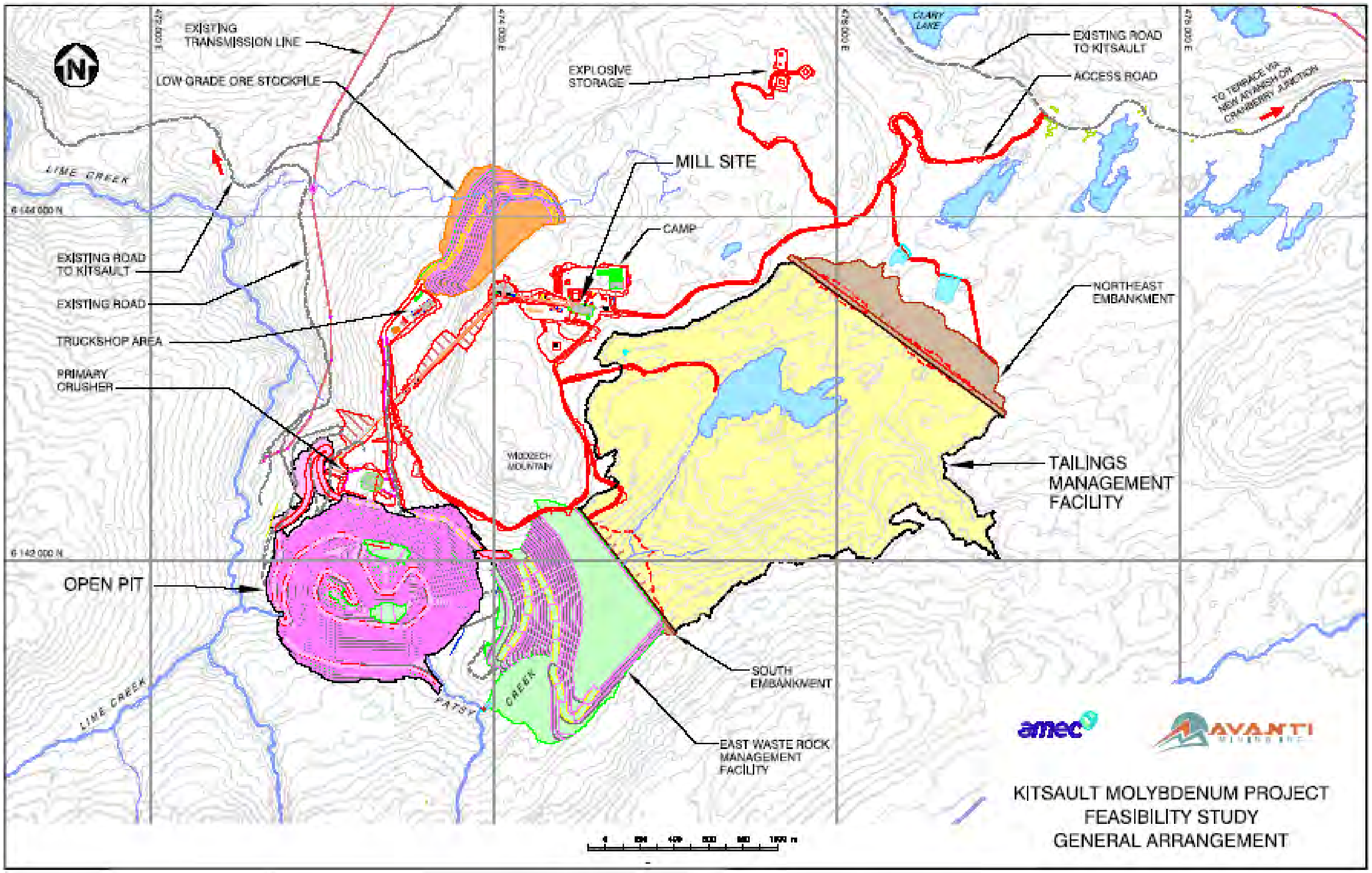
- Pipelines for water and tailing
- A revised transmission line alignment to the proposed process plant location.

A layout plan is included as Figure 5-1.

The locations of the process plant and several ancillary facilities have changed from those presented in the 2009 pre-feasibility study:

- The mill has been sited on the eastern flank of an existing knoll with a peak elevation of 935 m and average high elevation of 930 m. Platform grading of the process circuit layout will allow for gravity flow through the process plant and then to the TMF to the southeast.
- The truckshop/warehouse and fuel storage compound is at an elevation of 742 m and is approximately 1.3 km north of the open pit. Site selection considered topography, suitability of ground conditions, and convenience for the mining trucks to pull in for service or refuelling. It will also keep most of the noise below and away from the camps and mill site.
- The explosives plant will be located up a side road from the mine access road, about 500 m to the northeast of the TMF.
- The primary crusher will be installed as close as possible to the rim of the open pit. The crushed ore will be conveyed at an angle of 14° over a horizontal length of approximately 1,380 m to the coarse ore stockpile west of the plant site. A semi-mobile crusher was chosen to permit relocation within the pit as mining progresses.
- The facility layout considers a 500 m flyrock clearance limit beyond the ultimate pit limit, in accordance with Mines Department recommendations. With the exception of the primary crusher, the plant site, including the truckshop and fuel storage compound, falls outside this limit.

Figure 5-1: Plan Layout of Open Pit, Waste Dump, and Plant Site



5.3.5 Accommodation

The construction camp is envisaged as 15 stand-alone, single-storey dormitories designed to accommodate 700 people and a stand-alone, single-storey primary services facility. The permanent accommodation complex will be built within the construction camp, which will be upgraded once full-time staff are in place and operations commence. The permanent camp will include six stand-alone, single-storey dormitories and the same pre-built primary services facility from the construction camp. Employees will work 12-hour shifts on a three-weeks-in/three-weeks-out rotation.

5.3.6 Power

Power supply for the Kitsault site will be 138 kV from an existing power transmission line from the BC Hydro New Aiyanish substation approximately 70 km (42 miles) from the site. The BC Hydro line was originally built to 138 kV standards but is currently energized at 25 kV.

A substation consisting of interrupting breaker, isolation switches, and protective relaying will be required at the tap point on the existing line to feed the Kitsault mine site. The new transmission line from the tap point to the site will meet utility standards.

The incoming transmission line will terminate at a new main site substation. The substation will have an incoming circuit breaker, disconnect switches, power transformers, switchgear, and protective equipment for the transformation of power from the transmission voltage level of 138 kV to the site distribution/utilization level of 13.8 kV.

Emergency power will be provided in a standby power station sized to provide power to camp and process equipment requiring electric power in the event of a power failure.

5.3.7 Water

Process water will be a combination of reclaim water from the TMF and fresh water from a storage tank. The minimum freshwater requirements for the process plant were estimated to peak at 120 m^3/h.

Fresh water for the project will be obtained from Clary Lake for firefighting, potable water, reagent mixing, and gland water. Water from the lake will be pumped to a 1,475 m^3 combined freshwater/firewater storage tank at the mill. Water will be distributed from the tank to the various use areas.

5.3.8 Communications

Site communications will be designed to meet the needs of the ongoing operation and will consist of an optic fibre network, and voice, data, fax, Internet, and video (1000Base T devices) capabilities, using voice-over-Internet protocols (VOIP).

5.4 Physiography

The Project is situated in hilly, plateau country that is dominated by thick stands of timber interspersed with small lakes, meadows, and swamps. The topography rises rapidly from the ocean at Alice Arm to an elevation of 600 m to 800 m at the plateau. The Kitsault and Bell Moly sites are on the plateau and the Roundy Creek site is midway up the elevation change from oceanfront to the plateau.

The dominant topographic features are a series of eroded basaltic lava flows that commonly form cliffs up to 100 m high. Bedrock is generally blanketed by a few metres of glacial till and is commonly overlain by a layer of peat bog up to 1 m thick. Outcrop in this area, except for the basalt cliffs, averages less than 1%.

Vegetation at the lower elevations consists of spruce and pine trees along with juniper bushes. At higher elevations, the property is essentially barren of vegetation.

5.5 Comment on Section 5

In the opinion of the QPs:

- There is sufficient suitable land available within the mineral tenure held by Avanti for any future tailings disposal, mine waste disposal, and installations such as a process plant and related mine infrastructure.
- A review of the existing and likely power and water sources, manpower availability, and transport options indicate that there are reasonable expectations that sufficient labour and infrastructure is available or under construction to support declaration of Mineral Resources, Mineral Reserves, and the proposed mine plan.

6.0 HISTORY

The first recorded mining or exploration activity in the Project area was in 1911, when exposures of silver-bearing polymetallic veins were staked southeast of the Kitsault molybdenum deposit. The first recognition of molybdenite-bearing exposures in the Project was in 1916, along Lime Creek (Woodcock and Carter, 1976; Turnbull, 1916).

A small quantity of molybdenite was produced from the Alice Arm area during World War 1; however these excavations are outside the Project area.

In 1956, Kennco Explorations (Western) Ltd. (KEL) evaluated the Lime Creek molybdenum deposit (now the Kitsault molybdenum deposit), and optioned the property in 1957. Drilling commenced in 1959, and a first-time mineral resource estimate was prepared in 1964. Open pit mining commenced in 1968 under the KEL subsidiary company B.C. Molybdenum (BC Moly), and continued to 1972, when low molybdenum prices forced closure. During that period, about 9.3 Mt of ore was produced, with about 22.9 Mlb of molybdenum recovered (Hodgson, 1995).

Climax Molybdenum Company of British Columbia (CMC) purchased the deposit from KEL in 1973. Additional drilling was completed, and mineral resources updated. In 1979, the property title was transferred to Amax of Canada Limited (Amax). Amax conducted engineering studies, and constructed the town of Kitsault. Production recommenced in April 1981, but due to low metal prices, was suspended in November 1982. During this second production period, about 4.08 Mt of ore and stockpile material were processed and 8.99 Mlb of saleable molybdenum were recovered (Amax, 1982; 1983).

The Bell Moly deposit was discovered in 1965 when Mastodon Highland Bell Mines, Ltd. and Leitch Gold Mines identified anomalous molybdenum values from geochemical sampling. Staking followed, and subsequent exploration funding requirements saw the two companies amalgamate as Bell Molybdenum Mines, Ltd. (Bell). Work completed by the end of 1975 comprised drilling and mineral resource estimation (Carter, 1967; Steininger and Card, 1979). CMC optioned the deposit area in 1975, and conducted drilling programs from 1976 to 1977, which supported an updated mineral resource estimate (Steininger and Card, 1979).

Molybdenite was first identified at Roundy Creek in the early 1900s. The principal exploration program was in the period 1965 to 1971 when Silurian Chieftain Minerals Company Limited undertook core drilling, underground development, and a mineral resource estimate. CMC subsequently acquired the property in 1975.

The three properties were transferred to the Alumax aluminum division of Amax. In late 1993, Amax merged with Cyprus Minerals, and as part of the merger the Alumax division was spun off to the Amax shareholders. The Kitsault molybdenum deposits were included in the Alumax divestment (Alumax, 1996). Alcoa, Inc. (Alcoa) purchased Alumax in 1998, and transferred the Kitsault molybdenum deposits to its subsidiary, Aluminerie Lauralco, Inc. (ALI).

From closure in 1982 to 1995, Amax, its subsequent successor, Phelps Dodge Corporation (Phelps Dodge) and CMC managed maintenance of the town site and reclamation under a joint management agreement. Mine reclamation commenced in 1996 and was completed in 2006, at which point the project title was transferred 100% to ALI. The Kitsault town site was purchased by a third-party, Kitsault Resort Ltd., in 2006.

Avanti acquired the Project in 2008. Since that date, work has comprised drilling, including confirmation and condemnation drill holes, evaluation and interpretation of legacy data, engineering and metallurgical studies, mineral resource and mineral reserve estimates. A preliminary assessment was completed in 2008; the results indicated that more detailed studies were supported. In 2009, a pre-feasibility study (PFS) that envisaged a conventional open pit mining operation and process route, producing molybdenum concentrates. Under the assumptions reported in the PFS, the project showed positive economics, and a feasibility study was commissioned.

The remainder of this Report discusses the findings of the feasibility study.

7.0 GEOLOGICAL SETTING

7.1 Regional Geology

Information on the regional geological setting of the Project is primarily based on work by Carter (1981).

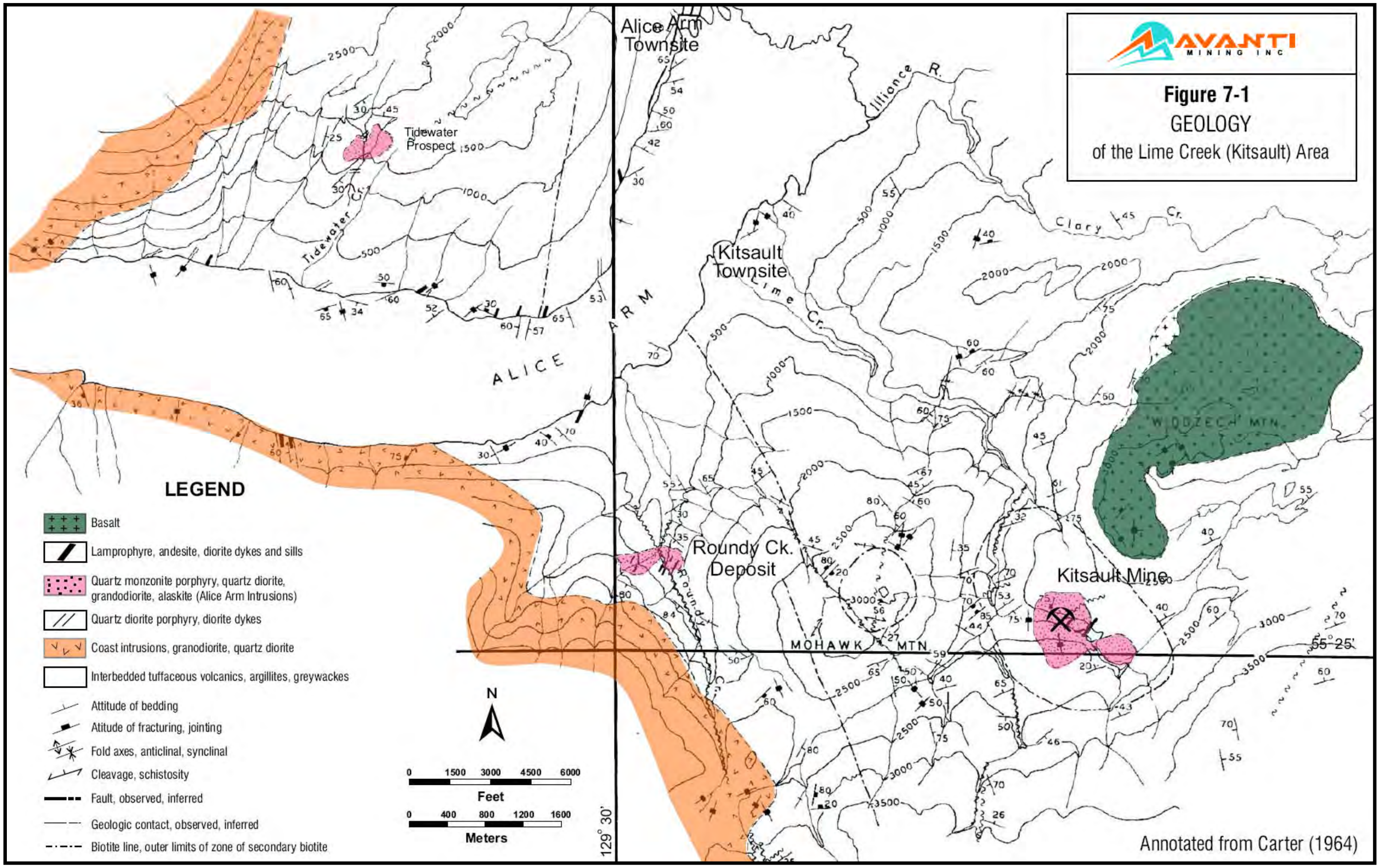
The deposits are hosted within the Intermontane Tectonic Belt of the Canadian Cordillera along its contact with the Coast Range Crystalline Complex. The Intermontane Tectonic Belt is an assemblage of accreted sedimentary and island arc terranes that docked against the North American craton in the Early to Middle Jurassic. The Coast Range Crystalline Complex intrusive rocks range in composition from granodiorite to quartz monzonite and have an age span from Late Jurassic to early Tertiary. Overlying both the Intermontane Tectonic Belt and the Coast Range Crystalline Complex are the eroded remnants of more recent plateau-type lava flows. Figure 7-1 presents an overview of the geology of the general area, adapted from Carter (1964).

In the general Project area, the primary sedimentary lithologies within the Intermontane Tectonic Belt are the Lower to Middle Jurassic Hazelton Formation and Upper Jurassic Bowser Lake Group. The Hazelton Formation consists of volcanic breccias, tuff, conglomerate, volcaniclastic sedimentary rocks, and andesite flows, all metamorphosed to greenschist facies. The Bowser Lake Group consists of interbedded greywacke and argillite with minor conglomerate and limestone metamorphosed to greenschist facies.

The Coast Range Crystalline Complex is represented by 50 Ma to 55 Ma granodiorite to quartz monzonite stocks in the Project area; this suite is informally referred to as the “Alice Arm intrusives”. Many of the Alice Arm intrusive bodies are loci for molybdenum mineralization, including at Kitsault, Roundy Creek, Bell Moly, Tidewater, and Ajax.

Following the emplacement of the Alice Arm intrusive suite and related molybdenum mineralization, a swarm of c. 34–36 Ma, northeast-striking, lamprophyre dikes was intruded into the Bowser Lake Group and Alice Arm Intrusives. The youngest igneous event comprises c. 0.62–1.6 Ma basaltic plateau-type flows and related vesicular basaltic dikes. The entire area was exposed to glaciation, the majority of which occurred after the last igneous event.

Figure 7-1: General Project Geology Plan



7.2 Project Geology

The Bowser Lake Group in the Project area consists of regionally- and thermally-metamorphosed interbedded argillite and greywacke. These lithologies were intruded by the Early Tertiary Lime Creek Intrusive Complex, the Clary Creek stock, and the Roundy Creek intrusive complex.

Intrusive rocks associated with molybdenum mineralization at Kitsault, Bell Moly, and Roundy Creek are multiphase diorite, quartz monzonite, and younger felsic units. Surrounding the intrusive rocks are hornfels aureoles. Cross-cutting relationships within the intrusive suites indicate that molybdenum mineralization at all three deposits is the result of multiple mineralizing events.

Away from the Kitsault open pit and the adits at Roundy Creek, surface rock exposures are limited, as the area is covered by soil, swamp, glacial till, and in places basalt flows. The primary source of geological data is drill core.

7.3 Deposit Geology

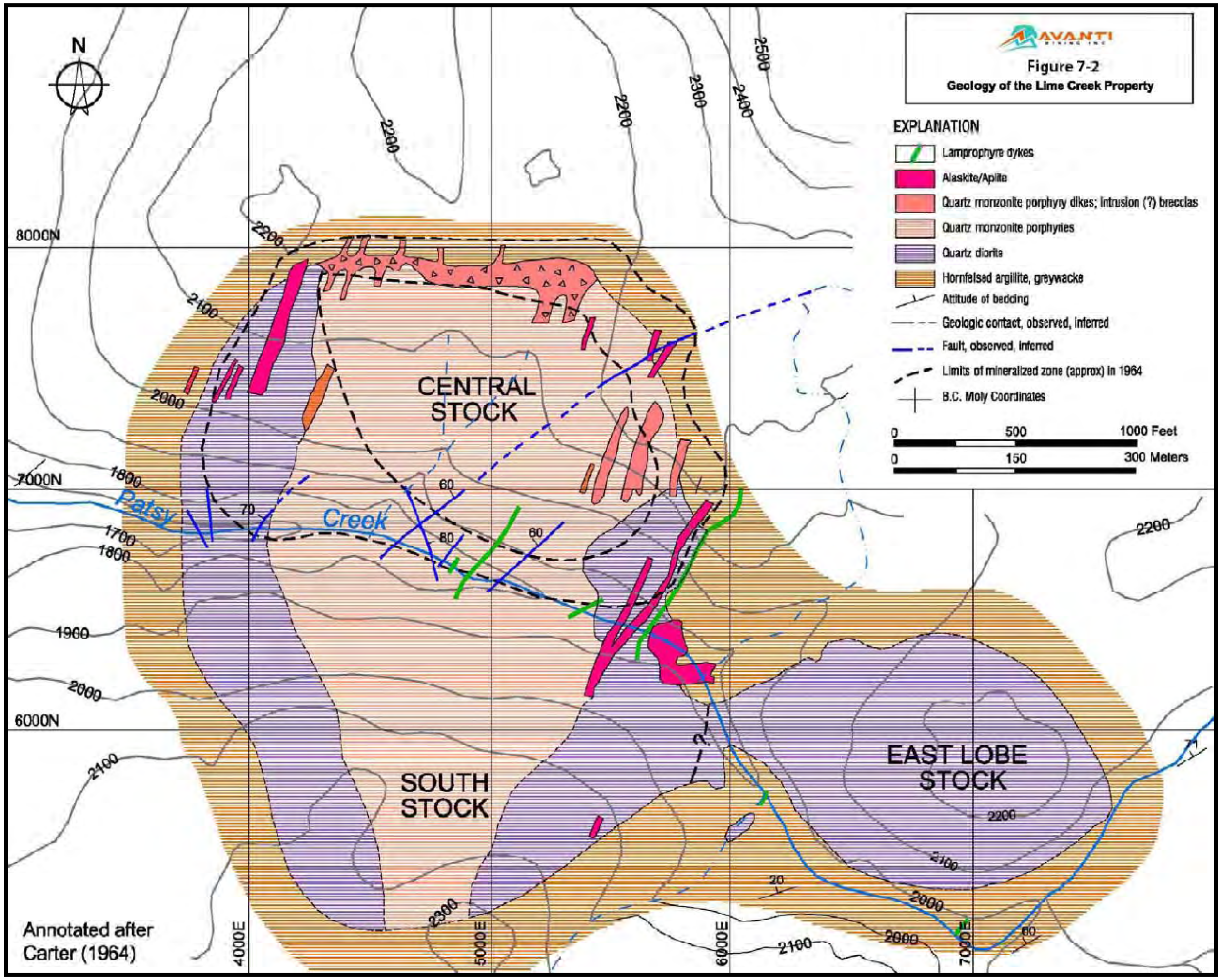
7.3.1 Kitsault

Originally, the stocks in the Kitsault mine area, from oldest to youngest intrusive phase, had been defined as (Woodcock, 1964; Carter, 1964; Steininger, 1978, 1985):

- East Lobe: the oldest intrusive phase, poorly exposed. Now covered by mine dumps
- Border Stock: medium-grained and equigranular quartz diorite or diorite. Locally displays a distinct foliation defined by the alignment of abundant biotite
- Southern Stock: quartz monzonite. The probable contact of the Central and Southern Stocks, at the surface south of Patsy Creek, is marked by extensive development of secondary K-feldspar alteration
- Central Stock: A variably porphyritic quartz monzonite porphyry that hosts the bulk of the molybdenum mineralization
- Northeast Porphyry: quartz monzonite porphyry
- Intramineral porphyry dikes: possibly related to the Northeast Porphyry intrusion.

The molybdenum mineralization was interpreted to form a hollow, steeply dipping, annular, cylindrical shape that is well-developed on three sides of the margins of the central Lime Creek Intrusive Complex (Figure 7-2).

Figure 7-2: Early Geological Interpretation of the Kitsault Deposit, after Carter (1964)



The exterior of this annulus was localized within, along, and slightly exterior to, the contact with the hornfelsed Bowser Lake Group sediments. Interior to the annular and cylindrical molybdenite mineralization, a barren core was interpreted. The south side of the intrusive complex was in contact with another, largely unmapped, intrusive body, and in this area, the exterior boundary of the annular and hollow cylinder was less well constrained by drilling and may have extended across the intrusive contact.

The interpretations have subsequently been refined, based on the additional drilling completed by Avanti.

Figure 7-3 shows a surface projection of the geological interpretation for the former CMC open pit, based on a combination of a 1970 bench mapping exercise, and 2008 drill core. Figure 7-4 shows the geological interpretation at the 450 m elevation by comparison.

The host units to the intrusions are argillites and greywackes of the Bower Lake Group. In the CMC pit area, the sediments have a general N25°–45°E strike and northwesternly dip angles of 20°–60°. These trends indicate that the Lime Creek Intrusive Complex is largely discordant to bedding in the sediments.

Regional metamorphism comprises chlorite–sericite–epidote–albite greenschist facies metamorphism. Sediments are thermally altered for distances of as much as 750 m from the intrusive contacts, producing hornfels aureoles. The hornfels zones typically display an outer, weakly-developed albite–epidote facies, a central, pale-brown, biotite zone, and an inner, brown, biotite zone (Kamilli, 1977). The biotite hornfels zones locally contain small veinlets of epidote and clots of andradite garnet.

The largest intrusive stock, and the main mineralization host, is the Central Stock, located north of Patsy Creek. It is a variably porphyritic and seriate quartz monzonite, primarily composed of feldspar, quartz, and biotite. It has been divided into three major phases, these are, from oldest to youngest, quartz diorite, QMP-I, and QMP-II.

Quartz diorite is the oldest intrusive unit of the Lime Creek Intrusive Complex, and forms the western intrusive–hornfels contact. Contacts between the QMP-I and quartz diorite are typically obscured by alteration and mineralization, but at core scale, inclusions of quartz diorite were observed by Avanti within QMP-I. It is unclear from the core whether the quartz diorite is an early phase of the QMP-I or a distinctly separate intrusive phase; geological interpretations used for estimation purposes have treated the unit, however, as an earlier intrusive event. In this interpretation, the quartz diorite has been cut by the central QMP-I intrusive leaving screens or major inclusions within, and a rind of quartz diorite around, the main stock of QMP-I.

Figure 7-3: Surface Geological Projection Plan

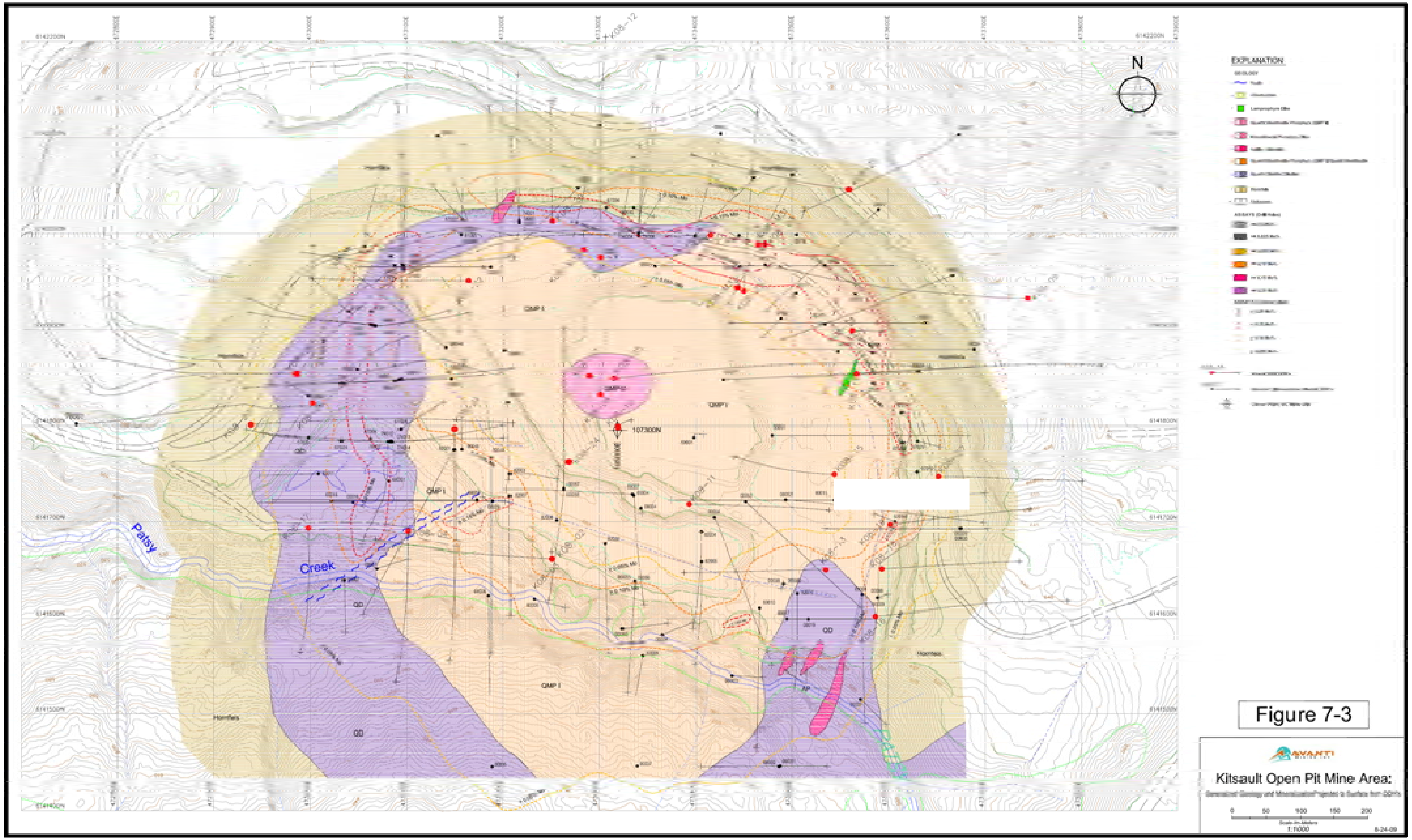
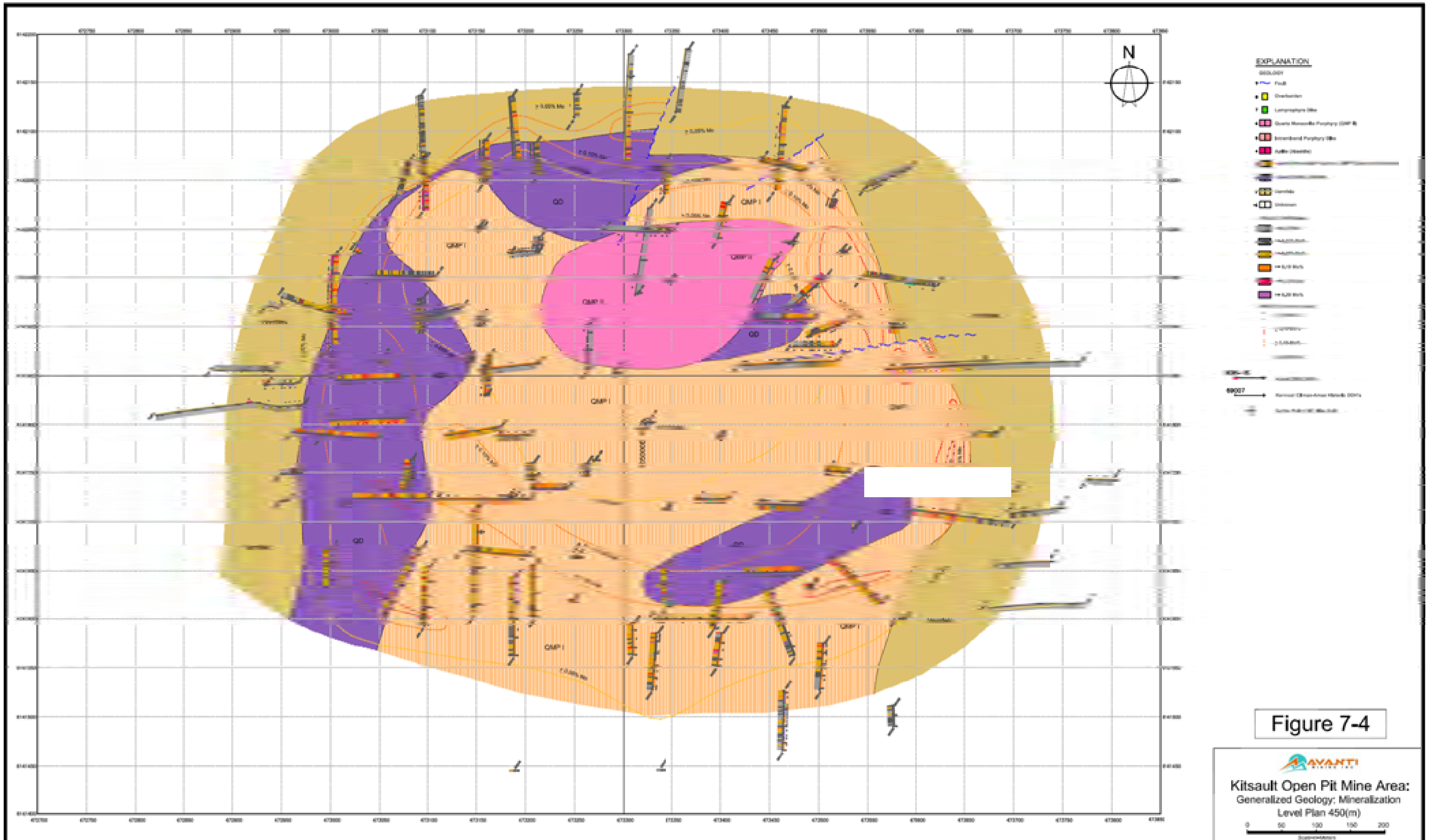


Figure 7-4: Geological Plan, 450 m Elevation



The QMP-I intrusion is pre- or syn-mineralization in age, and is generally equivalent to the well-mineralized Central Intrusive body identified by KEL and CMC. The stock is approximately 500 m wide at surface and on the 450 m level plan, and displays a plug-like morphology. The stock has steeply outward-dipping contacts with the enclosing, hornfelsed, Bowser Lake Group sediments at near-surface elevations. The flanking quartz diorite rim to the QMP-I skirts the hornfels contact along the west and north sides of the QMP-I stock; Avanti notes that it is more abundant in the subsurface along the eastern and southeastern contact than its surface distribution would suggest. The vertical extent of the QMP-I body is unknown. Historic drilling has generally tested this plug down to the 200 m elevation, and two drill holes have intersected mineralization within QMP-I to the 0 m elevation.

The QMP-II intrusion postdates all economic molybdenum mineralization and in part includes the historic Northeast Porphyry body. Where it carries >75 ppm Mo values, the mineralization is either due to the presence of late quartz–carbonate veins, or to very rare, isolated quartz–molybdenite veinlets. The QMP-II unit has a more obvious porphyritic appearance than QMP-I. QMP-II reaches the surface as a narrow, circular plug within the barren core, and broadens with depth towards the north and northeast

The contact between QMP-I and QMP-ll is almost always obscured by strong silicification in core specimens. Avanti staff have noted that differentiation between the QMP-I and QMP-ll contacts in drill holes within the central area is more difficult to determine than in drill holes in the northeastern and northern parts of the complex.

Three dike phases are recognized by Avanti in addition to the porphyry phases:

- Aplite dikes: typically display 15–75 m, northerly trending strike lengths, and moderate widths of 3–15 mm, forming sheeted zones of dikes, sometimes with cumulative widths of 10 m or more. Aplite dikes commonly show gradations from a typical sucrosic texture to micro-pegmatitic textures and are generally spatially associated with the margins of the QMP_I stock. They cross-cut all rock types except for QMP-ll and have little spatial continuity. Aplite dikes can contain abundant disseminated molybdenite and pockets of high-grade clots of molybdenite as well as irregular quartz–molybdenite veinlets, which visually appear to originate from within the aplite bodies.
- Intramineral porphyry dikes: cut QMP-I. Radial dikes mapped by KEL on the open pit benches in 1970 may be the wider, high-level equivalents of the narrow intramineral porphyry dikes observed at depth in 2008 drill core.
- Lamprophyre porphyry dikes: typically 1 m to 10 m wide, generally have a northerly or easterly strike direction and steeply dipping. Lamprophyre porphyry

dikes are non-mineralized, are considered volumetrically insignificant, and tend to display poor continuity along strike and down dip.

Widespread structural breaks, generally marked by gouge-bearing fault zones from centimetres to less than a metre in width, are commonly observed in many of the 2008 drill holes. However, these fault zones are difficult to correlate between sections. Mapping in 2008 of the exposed pit walls indicated no major fault zones within the pit area.

Geological sections through the Kitsault deposit showing examples of the different lithological units are presented in Figure 7-5, Figure 7-6, and Figure 7-7.

7.3.2 Bell Moly

The Bell Moly deposit consists of molybdenum mineralization developed in two intrusive phases, the Southwest Zone intrusive, and the Clary Creek stock. The deposit geology is illustrated in plan view in Figure 7-8.

The host unit to the intrusions is a massive to micro-greywacke, interbedded with minor black slate and argillaceous mudstone, which is ascribed to the Bower Lake Group. Intrusive activity produced extensive hornfelsing of the sedimentary rocks. Two separate zones of hornfels are known: one is closely associated with the Southwest Zone intrusive, the second, and larger, zone is associated with the Clary Creek stock. This hornfels extends significantly northwest of the Clary Creek stock, suggesting that additional intrusive rocks may be present at depth to the northwest.

The Clary Creek stock consists of at least five separate intrusive phases of generally quartz monzonitic composition, whereas the Southwest Zone is primarily a dike swarm apparently centered on a small stock, also of quartz monzonitic composition.

The Clary Creek stock is an east–west-elongated, elliptical mass, with surface dimensions of approximately 700 m x 300 m. There is a prominent hornfels roof pendant in the center of the stock.

Figure 7-5: Kitsault Geological Section 6141850N (looking north)

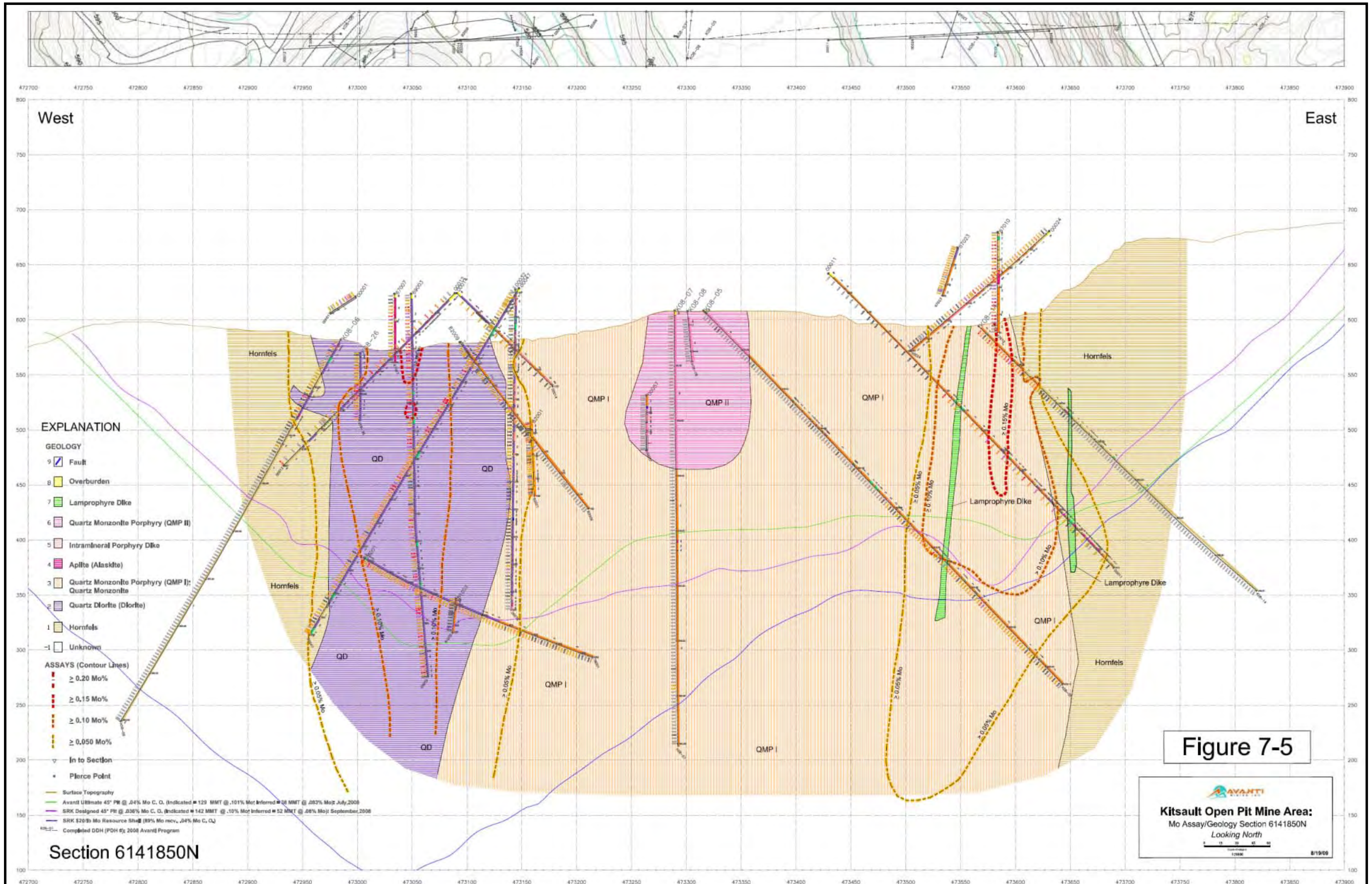


Figure 7-6: Kitsault Geological Section 6141900N (looking north)

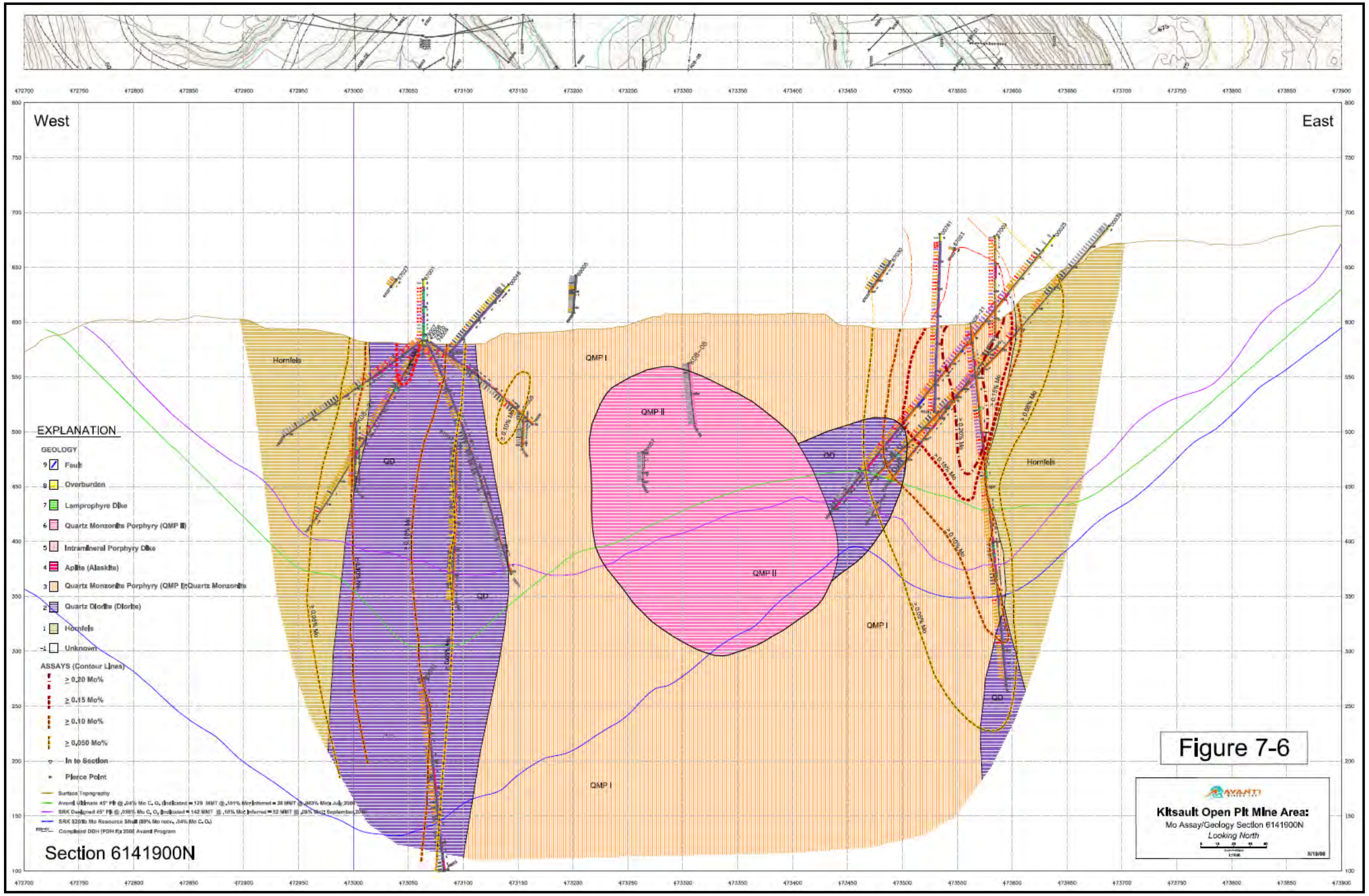


Figure 7-7: Kitsault Geological Section 473350E (looking west)

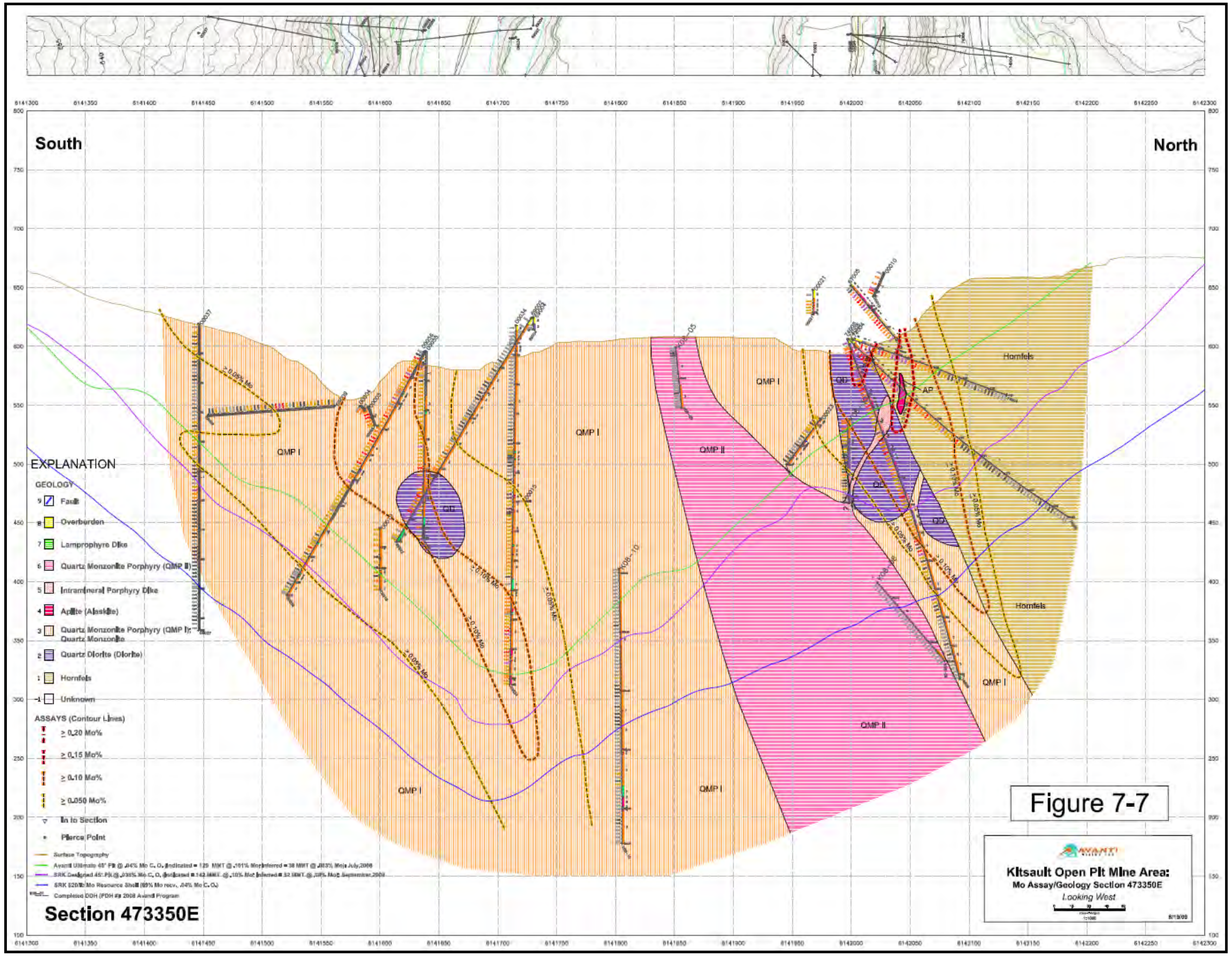
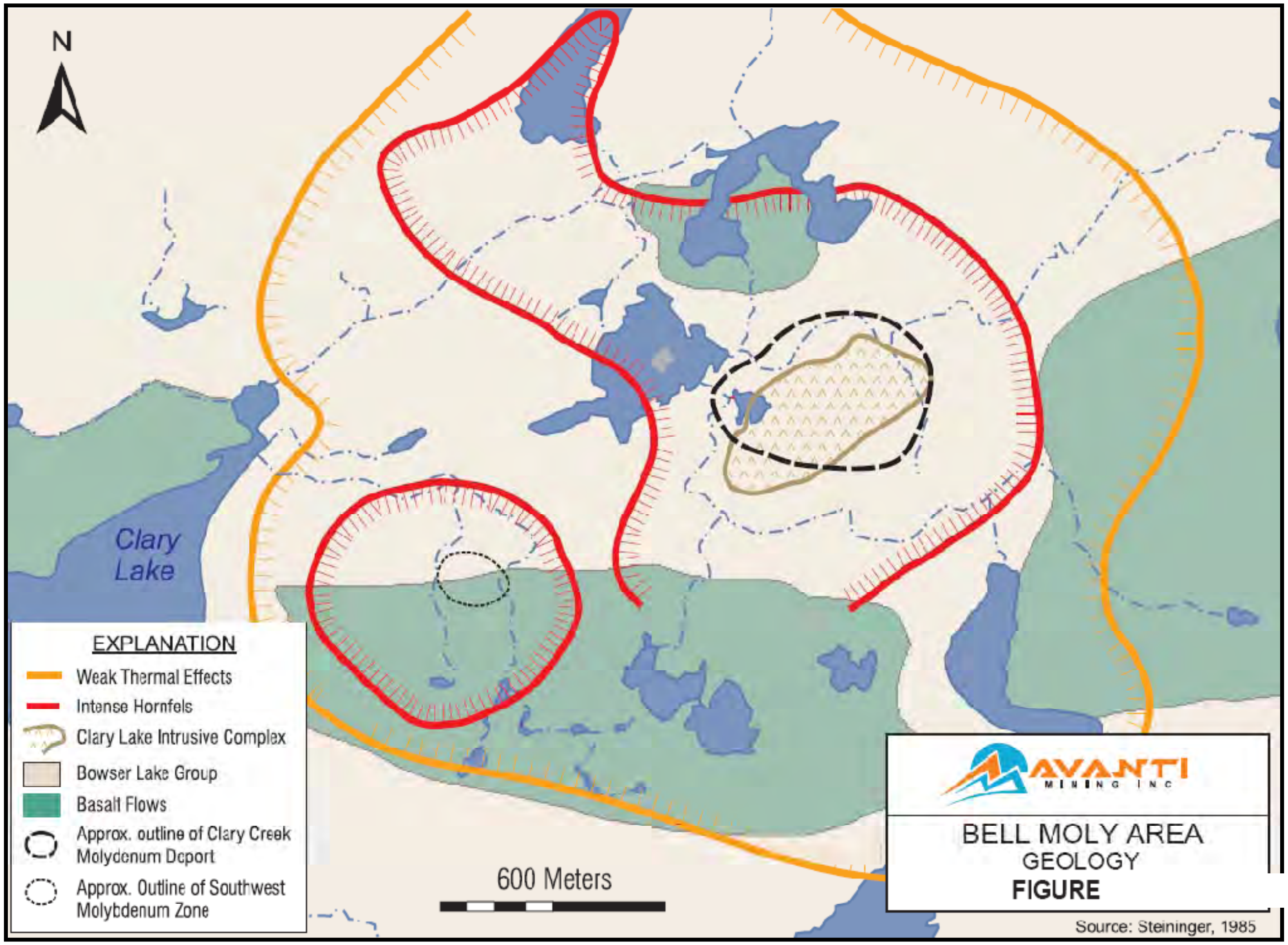


Figure 7-8: Geological Plan, Bell Moly Deposit (after Steininger, 1985)



Intrusive phases, from oldest to youngest, are:

- Quartz monzonite porphyry: displays a mafic-rich border approaching granodiorite in composition
- Alaskite dikes: intrude the center of the quartz monzonite porphyry
- Quartz-eye porphyry (first generation): primarily found in the southwestern part of the complex; dikes related to the body cross-cut both the alaskite dikes and the quartz monzonite porphyry
- Quartz-eye porphyry (second generation): dikes cut all of the older phases, but no central intrusive body related to these dikes has been identified to date
- Crowded porphyry: found in the southwestern part of the complex, and appears to postdate molybdenum mineralization.

The Southwest Zone is located about 1 km southwest of the Clary Creek stock. All of the intrusive units intersected by drilling are dikes, with the possible exception of a small stock encountered in one drill hole. Although these dikes have similar compositions, the varying age relationships with respect to mineralization suggest a continuum of intrusions throughout development of the molybdenum mineralization. All of the dikes are sufficiently altered to preclude determination of original composition, but appear to be similar to the rhyolitic quartz-eye porphyries of the Clary Creek stock.

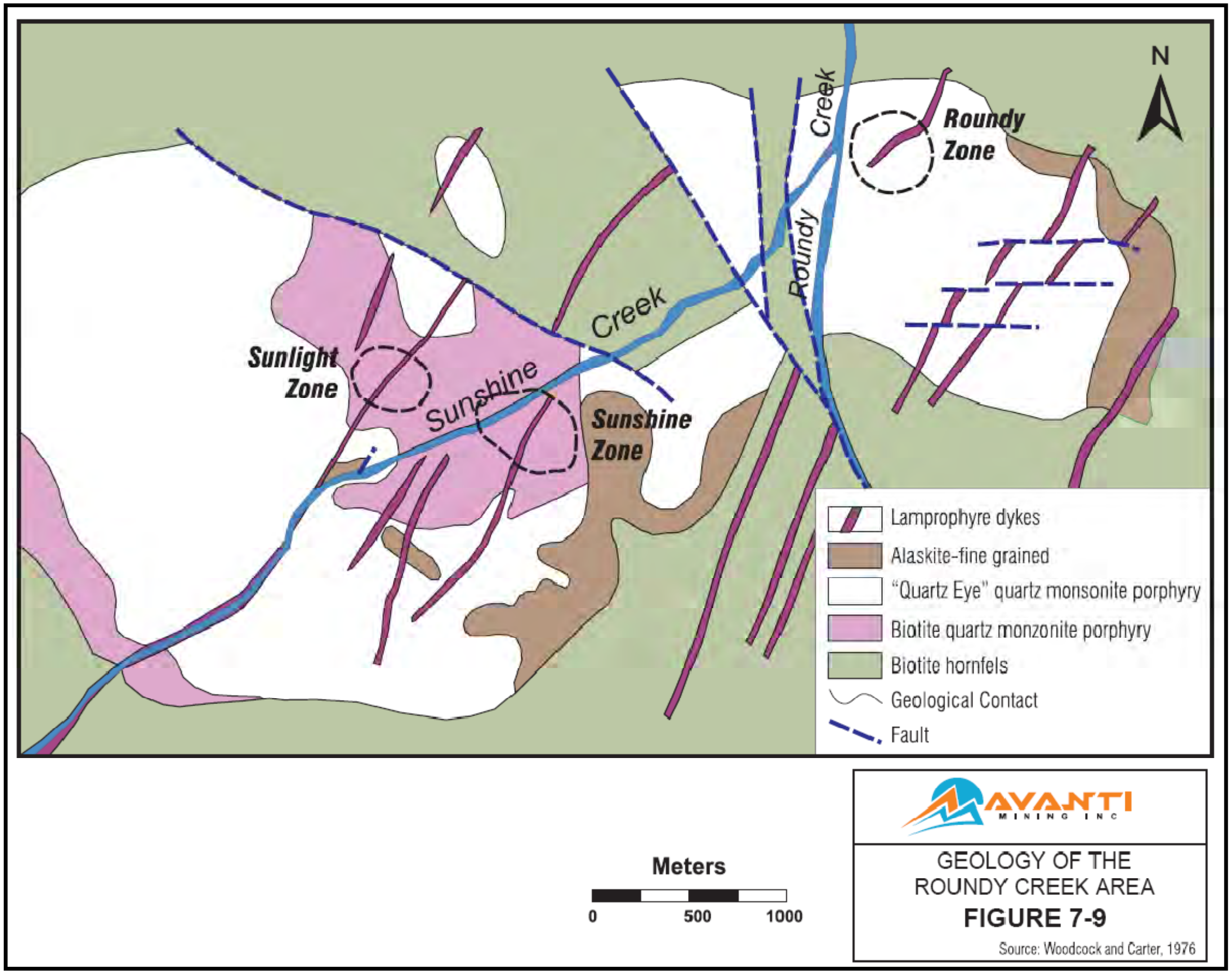
Numerous mafic dikes intersected by core drilling are probably related to the regional but very young basaltic intrusive event. Core drilling indicates that lacustrine and glacial deposits lie below many of these basaltic flows, but on top of the Tertiary or Cretaceous bedrock.

Carter (1967) defined two ages of regional folding, the older with a north to northwest axis and the younger with an east–northeast axis. Faults, some hosting mafic dikes, are commonly oriented along the trend of the younger fold direction. In the immediate area of the Clary Creek stock and Southwest Zone, faults with north–northwest trends are widespread.

7.3.3 Roundy Creek

Molybdenum mineralization at the Roundy Creek deposit is associated with a small composite quartz monzonite stock that is disrupted by faulting. The deposit geology is illustrated in Figure 7-9.

Figure 7-9: Geological Plan, Roundy Creek Deposit (after Woodcock and Carter, 1976)



The host sediments are interpreted to be similar to those hosting the Kitsault deposit. They have been hornfelsed for a distance of about 60 m. The central intrusive phase has been mapped and logged as a leucocratic quartz phenocryst-bearing quartz monzonite porphyry, which is locally brecciated. Two intrusive phases to the porphyry have been recognised:

- A biotite xenolith-rich phase
- A banded phase

A younger biotite-bearing quartz monzonite is present at the margins and in the core of the intrusive complex. Alaskite dikes cut all of the quartz monzonite bodies and in turn are cut by narrow dikes of light gray biotite quartz monzonite. The last intrusive stage are a series of lamprophyre dikes with a general northeasterly strike, which cross-cut all other intrusive phases.

7.4 Metamorphism and Alteration

The regional metamorphism reached greenschist facies. Superimposed on this is the hornfels from the Alice Arm intrusions. Avanti and earlier workers have concluded that the absence of any well-developed skarn in the hornfels indicates that no significant calcareous units were present in the Bowser Lake Group sediments adjacent to the Kitsault deposit.

7.4.1 Kitsault

Four main alteration phases related to the plutonism and subsequent mineralization were recognized by KEL and Avanti staff. These are:

- Silica and potassium feldspar alteration: consists of 1–4 cm wide barren, grey to white quartz stockwork veins and associated pink K-feldspar stockwork veins and disseminations; cross-cut by molybdenite-bearing quartz veins.
- Phyllic alteration: extends outwards as a circular halo of pervasive quartz–sericite–pyrite alteration from the molybdenite stockwork zone to the contacts of QMP-I with the enclosing, hornfelsed, Bowser Lake Group sediments; occasional and poorly-developed envelopes of sericite can surround quartz–molybdenite–pyrite veins and veinlets.
- Pyrite alteration: erratically developed, and at the present land surface is missing from the east and north sides of the intrusive complex, but is moderately well developed within the QMP-I along the south side of the deposit where it is coincident with the inner annulus of the mineralized zone; pyrite alteration is best

developed at the surface in the hornfelsed sediments along the west and northwest sides of the molybdenum mineralization where it overlies and is immediately outboard of the intrusive-sedimentary contact

- Argillic alteration: forms a superimposed, roughly circular pattern, extending from the outer boundary of the deposit core to the contact of the QMP-I and/or quartz diorite intrusive rocks with the hornfelsed sediments; where well developed, kaolinite–illite completely replaces the primary plagioclase as well as some of the primary potassium feldspars.
- Calcic alteration: consists of pervasive, finely disseminated calcite and dolomite within the intrusive rocks.

7.4.2 Bell Moly

A biotite hornfels zone has been mapped to a distance of 365–400 m outward of the Clary Creek stock within the surrounding siltstones and greywackes. The hornfels zone can display minor pale green chlorite–sericite alteration marginal to fractures and quartz veinlets in the sediments, producing a bleached appearance in the rock. A poorly-developed zone of propylitic alteration is superimposed on the hornfels surrounding the molybdenum deposit.

There is a silicified zone underlying the molybdenum zone in the Clary Creek stock that grades upward into a zone of secondary potassic feldspar, which is more or less coincident with the molybdenum mineralization. In this area, the primary plagioclase has typically been altered to sericite and carbonate, and much of the secondary feldspar can only be observed at the microscopic scale. The original biotite has commonly been altered to sericite and chlorite.

Argillization is common outward from the molybdenum zone in areas where veining is less dense. It is more common in fault zones, together with chlorite-coated slip surfaces.

Mineralization and alteration associated with intrusive activity in the Southwest Zone are similar to those near the Clary Creek stock but less well understood.

Roundy Creek

Sedimentary rocks have been metamorphosed in a zone, about 60 m wide, surrounding the intrusion.

Alteration of the intrusive rocks consists of a potassic zone, best developed within and marginal to the better zones of molybdenum mineralization, and a zone of secondary biotite. The potassic alteration occurs as fracture-coated planes, with abundant sericite and lesser biotite. The secondary biotite forms within fractures, and is primarily found peripheral to the main molybdenum-mineralized zones.

7.5 Comment on Section 7

In the opinion of the QPs, the knowledge of the deposit settings, lithologies, and structural and alteration controls on mineralization are sufficient to support Mineral Resource and Mineral Reserve estimation and can support mine planning.

8.0 DEPOSIT TYPES

The deposit model discussed below is based on research notes prepared by the United States Geological Survey (Ludington et al., 2009) and the BC government Mineral Deposits #L05 Profile for low fluorine porphyry molybdenum deposits (Sinclair, 1995).

The Alice Arm intrusive-hosted molybdenum deposits are part of a suite of porphyry molybdenum deposits in the North American cordillera that are classed as low-fluorine stockwork molybdenite deposits. Such deposits are closely related to porphyry copper deposits, having a similar tectonic setting (continental volcanic arc) and the petrology (calc-alkaline) of associated igneous rock types.

To date, the only confirmed deposit examples are found in western Canada and the northwestern United States. The reason for the limited distribution is currently not well understood: it may be a function of the major exploration efforts to date being concentrated in those localities.

Low-fluorine stockwork molybdenite deposits are defined as containing negligible copper (<100 ppm Cu in ore) and are not related to evolved, high-fluorine granites. Such deposits do not form in the same regions or tectonic environments as Climax-type porphyry molybdenite deposits, but form in the same regions and at the same times as subduction-related porphyry copper deposits.

Most deposits are either of Late Cretaceous (about 100–70 Ma) or early Tertiary (about 60–50 Ma) age, and were emplaced in continental magmatic arcs. Deposits are all post-accretionary and are not conspicuously aligned along upper crustal structures. Source plutons range from granodiorite to granite in composition; quartz monzonite is the most common, and is often porphyritic. Trace-element compositions, where determined, are consistent with plutons derived from typical, subduction-related, calc-alkaline rocks. Deposits commonly develop near the margins of the source plutons.

Although deposits typically do not form clusters, the Alice Arm deposits (Ajax, Tidewater, Bell, Kitsault, and Roundy Creek) are an important exception. Host rocks do not appear to be a primary mineralization control: deposits can develop in volcanic rocks associated with the primary plutonic activity or in much older country rocks.

Ore zones can be elliptical, circular, crescent-shaped, or annular in cross-section, and in vertical section, can be cylindrical, tabular, or irregular. Deposits can extend for several hundred metres in both lateral and vertical extent.

The primary sulphide mineral is molybdenite. Molybdenite-bearing quartz veinlets can contain small amounts of pyrite, and may also contain trace amounts of magnetite, scheelite, wolframite, galena, or sphalerite; chalcopyrite is rare. The veins may also contain K-feldspar ± biotite ± sericite ± clay minerals ± calcite ± anhydrite as gangue minerals. It is typical for such deposits to display contemporaneous formation of all the major ore and gangue minerals.

Peripheral polymetallic Ag–Pb–Zn veins are present at some deposits, but zonation within a single set of veins is not documented at any of the deposits. In addition to stockwork veinlet systems, larger veins, sets of veins, and ore-bearing breccias are sometimes present.

Alteration assemblages are similar to those found in porphyry copper deposits. In a typical deposit, a central zone of potassic (and sometimes silicic) alteration is characterized by quartz ± K-feldspar ± biotite ± anhydrite. Distal to the potassic zone, phyllic alteration can be present. The phyllic mineral assemblage is primarily quartz ± sericite ± carbonate minerals. Surrounding this may be a large propylitic zone of epidote + chlorite, which can extend for hundreds of metres, although this alteration can sometimes be difficult to distinguish from regional metamorphic assemblages. Argillic alteration, consisting of clay minerals such as kaolinite and montmorillonite, whereas not common, may also be present, most typically as an irregularly distributed overprint on earlier alteration zones.

Areas of potassic alteration closely mimic the ore zones, whereas the phyllic alteration zone may be somewhat larger, extending hundreds of metres away from ore. Almost all the known deposits cropped out on surface; as a result very little is known about the upper parts of the alteration systems. The propylitic zone may be much larger, perhaps kilometres in extent. Potassic alteration appears to occur in vein envelopes and becomes pervasive only where veins are closely spaced. Phyllic alteration, whereas still vein-controlled, may be more pervasive, as the alteration envelopes are generally wider.

8.1 Comment on Section 8

In the opinion of the QPs, features that classify the Kitsault, Roundy Creek and Bell Moly deposits as low-fluorine stockwork molybdenite deposits are:

- Location in the western Canadian cordillera
- Early Tertiary age

- Hosted in porphyritic quartz monzonite intrusions that are associated with a continental magmatic arc, and partly hosted in hornfelsed Bowser Basin sediments that are in contact with the intrusions
- Mineralization has a steeply-dipping, annular, cylindrical shape
- Mineralization primarily consists of quartz–molybdenite stockworks and lesser sheeted quartz–molybdenite veins
- Alteration associations typical of porphyry copper deposits, but very low-tenor copper values from drill core analyses
- Late-stage associated polymetallic base metal mineralization.

9.0 MINERALIZATION

9.1 Kitsault

A number of vein phases have been identified at the Kitsault deposit:

- 0.25 cm to 1.50 cm wide quartz–molybdenite veins and veinlets forming stockworks
- More widely-spaced, sub-parallel, 3–20 cm wide, sheeted, milky quartz veins containing fine-grained molybdenite. Veins have been termed “ribbon banded” quartz–molybdenite veins. These irregularly-developed, sheeted vein zones are best developed in close proximity to the aplite dikes. Where these veins are less than 1.5 cm wide, molybdenite is confined to vein borders. Where the veins are wider, there are multiple epitaxial bands of molybdenite within the quartz vein as well as on its margin.
- 0.50 to 2.0 cm pyrite veins containing subordinate molybdenite and trace amounts of quartz. The molybdenum contribution of this vein type, which is largely confined to the hornfels, is negligible
- Steeply-dipping, 4 cm to 1 m or more in width, quartz–carbonate veins that contain sphalerite, galena, a variety of Pb–Bi sulphosalt minerals (akinite, cosalite, and neyite) and occasional trace amounts of molybdenite. Best developed on the south side of the molybdenite zone. The quartz–carbonate veins that contain the Pb–Bi mineralization post-date the QMP-II intrusive. A few very rare and isolated quartz–molybdenite veinlets have been observed in the deeply-buried QMP-II intrusive.
- Rare to minor, violet-colored, late-stage, anhydrite-bearing veins.

Molybdenum mineralization hosted in the stockwork and sheeted veins defines a hollow, cylindrical, and annular-shaped mineralized body, which follows the approximate contacts of the QMP-I and quartz diorite intrusions with the surrounding hornfelsed sediments. The body has widths from 100 m to 150 m on the east, west, and north sides, and a less well defined zone to the south, where it is at least 300 m wide and may extend to nearly the southern limits of drilling (refer to Figure 7-4).

In cross-section, the mineralized annulus displays variable widths at a 0.05%Mo grade cut-off and extends to at least the 200 m elevation (refer to Figure 7-5, Figure 7-6 and Figure 7-7). The carrot-shaped limbs of the cylindrical mineralization show a more or less vertical inclination in east–west view (refer to Figure 7-5 and Figure 7-6). The width of the eastern limb, at grades above 0.05% Mo, is about 175 m near the surface but thins substantially below the 400 m level. The width of the western limb is about 130 m and it persists at that width at depth.

Annular mineralization along the north side has a -70° northward dip in north–south view, and is confined largely within the intrusive complex (refer to Figure 7-7). In contrast, the southern limb is much wider and dips north at about -40° near the surface, steepening with depth (refer to Figure 7-7). Avanti has suggested that the steeply inclined northward dip of the annular cylinder on the north–south section may reflect the deposit being tilted to the north during post-mineralization deformation.

Disseminated, crystalline, fine-grained molybdenite is sporadically distributed within the groundmass of all pre-mineral rock types, but typically is most abundant in the aplite dikes.

Systematic multi-element analyses show that background copper levels, outside of zones with abundant quartz-carbonate veins, are in the 20 to 50 ppm Cu range. Copper values in drill core, where late quartz-carbonate veining is abundant, are typically in the 50 to 250 ppm Cu range, with very rare instances where values exceed 1,000 ppm Cu.

9.2 Bell Moly

Two zones of molybdenum mineralization are documented at the Bell Moly property, one closely associated with the Clary Creek stock, and the second associated with the Southwest Zone intrusion (refer to Figure 7-8).

Molybdenum occurs most commonly in quartz veinlets, which are up to 0.5 cm wide, and less commonly as disseminated grains in the intrusive rocks. Within quartz veins, molybdenite occurs in the following, in decreasing order of abundance:

- As selvages along vein borders
- In sub-parallel bands throughout the veins
- As finely divided crystals throughout the veins
- As hairline quartz–molybdenite veinlets
- As fracture coatings.

Wider-spaced, sheeted quartz–molybdenite veinlets are the most prevalent form of mineralization, with stockworks of quartz–molybdenum veinlets being less common. High-grade veins are abundant in the drill core in orientations that are sub-parallel to the core axis. Quartz–molybdenite vein distribution is erratic and results in assay values in drill core to vary from 0.03% Mo to 0.29% Mo in adjoining 3 m assay intervals.

There are at least four stages of quartz–molybdenite veinlets, from oldest to youngest:

- Up to 5 cm wide quartz–molybdenite veinlets, with bands and clots of pyrrhotite, pyrite, chalcopyrite, and minor molybdenite.
- Narrow veinlets with finely divided molybdenite grains. Stockworks and preferred orientations to the veinlets are common, and these veinlets are probably related to the first intrusive phase of the Clary Creek stock.
- Banded veinlets up to 1 cm wide. Older quartz-eye porphyry appears to have been the source for the third stage of quartz–molybdenite veinlets. These veinlets are commonly banded and up to 1 cm wide. The abundance of molybdenite in veinlets decrease with depth, and the veins converge into a silicified zone.
- Narrow quartz–molybdenite veins that cross-cut all of the earlier vein sets

Base metal sulphide-bearing quartz veinlets which cut molybdenum mineralization make up the last stage of mineralization.

Scheelite occurs in quartz veinlets that generally cross-cut molybdenite-bearing veinlets. Pyrrhotite is the most widespread and abundant sulphide in the deposit, occurring most commonly within hornfels surrounding the molybdenum zone. Pyrite is commonly associated with pyrrhotite, but has a reverse relationship, increasing in abundance toward the center of the molybdenum zone, while the pyrrhotite decreases in abundance in the same direction.

Disseminated pyrrhotite appears to have formed during hornfels alteration of the sediments. The oldest hydrothermal mineralization is related to quartz–albite–pyrrhotite veinlets that cross-cut and alter hornfels, but are in turn clearly cut by quartz–molybdenite veinlets.

9.3 Roundy Creek

Three zones of molybdenum mineralization are observed at Roundy Creek (refer to Figure 7-9), developed in an eastern zone and two higher-grade zones in the western part of the intrusive complex (Carter, 1981). Most of the mineralization in the three zones is closely associated with the introduction of secondary potassium feldspar or biotite alteration.

The eastern Roundy Zone consists of quartz–molybdenite veins that commonly have random orientations and molybdenite paint on fracture surfaces, resulting in a more continuous but lower-grade mineralization than found in the other two zones. The eastern zone is defined by limited drilling and appears to be open at depth.

There are two higher-grade molybdenum zones in the western portion of the complex, the Sunlight Zone and the Sunshine Zone. Much of the molybdenite in these zones occurs in the alaskite phase of the intrusive complex (Woodcock and Carter, 1976).

The western Sunshine Zone has been drilled and exposed in two adits at the 260 m and 320 m elevations. The deposit as outlined by the 0.06% Mo grade contour has a podiform shape and a continuous internal zone of 0.12% Mo.

The eastern Sunlight Zone is smaller than the western Sunshine Zone, and is lens-shaped zone, as defined by the 0.06% Mo contour. Within this contour are numerous 3 m intervals of 0.6%+ Mo. The zone is lower in molybdenum grade than the Sunlight and Sunshine Zones and does not appear to contain an internal high-grade component.

9.4 Comment on Section 9

In the opinion of the QPs, the mineralization styles and setting of the Kitsault deposit is reasonably well understood and can support declaration of Mineral Resources and Mineral Reserves.

10.0 EXPLORATION

Exploration activities such as geological mapping and sampling have primarily been performed by predecessor companies to Avanti.

KEL and CMC developed an extensive geological and geochemical database. With the exception of some historical digital assay and drill hole geologic data compiled by CMC in 1973 to 1979 and recovered by Avanti in 2008 from the Mintec consultants in Tucson, AZ, very little of the hard copy data relating to the Kitsault deposit has been recovered. Much of the original Kennecott data may reside in the KEL (now Rio Tinto) archives in Vancouver, BC. Bell Moly and Roundy Creek data recovery is also limited.

As a result, the key data for the Project are from published geological reports, and drill data. Avanti has completed an evaluation of the acquired legacy data, and has performed core drilling to provide additional lithological data and confirmation of historic analytical data. Drilling is discussed in Section 11 of this Report.

10.1 Exploration Potential

10.1.1 Kitsault

The general lateral and vertical extents of the Kitsault deposit were largely but not completely defined by the 2008 drill program, and the potential exists to expand the deposit. The best target is Mo mineralization associated with aplite dikes that was intersected in drill hole K08-22, which was halted in mineralization.

10.1.2 Patsy Creek

Several primary dispersion geochemical studies were completed at Kitsault; the most significant of these were reported on by Woodcock (1964).

The 1960s studies were based on a large collection of outcrop samples and core samples from the top of the bedrock surface in areas where there was heavy surficial cover. The samples were taken from within and at some distance from the 0.75 km^2 area covered by the Lime Creek Intrusive Complex. Many samples were also taken along traverses up to 1.75 km outward, in orthogonal directions, from the margin of the intrusive complex. Such surface samples, nearly all of which were reported to contain fresh sulphide minerals where mineralization or alteration was present, were analyzed by the Salt Lake City laboratory of Kennecott Exploration Services.

Analyses were done by either emission spectrography, x-ray fluorescence, or wet chemical methods.

Evaluation of the analytical results showed that molybdenum values outboard to the north, east, and west of the intrusive–hornfels contact generally fell to 150–200 ppm Mo, within 50 m to 75 m of the contact. Strongly anomalous Mo values, however, were noted on the south side of the intrusive–hornfels contact, co-inciding with the Patsy Creek drainage. On the south side, the QMP-I intrusion is in contact with the quartz monzonite of the South Stock.

SRK (2008) performed an analysis of the Kennecott multi-element data and concluded:

- Hornfelsed sediments, where present, tightly constrain all hydrothermally-introduced elements of possible interest, particularly Mo, to within 50 to 75 m or less of the Lime Creek Intrusive Complex
- Ag, Ba, and F, in addition to Mo, are well developed at anomalous levels within the Mo deposit
- Anomalous Bi, Pb, and Zn are distributed along and to the south of the contact between the central QMP-I stock and the South intrusive, south of the main molybdenum deposit
- Multi-element Pb, Zn, Bi, Ag, F, Ba anomalies are coincident with scattered high Mo values around and to the south of the southernmost KEL drill holes, south of Patsy Creek.

The area south of Patsy Creek remains prospective, with additional surface sampling and drill testing recommended.

10.1.3 Bell Moly

Hornfels alteration extends well northwest of the Clary Creek stock, suggesting that there may be a buried intrusive at depth, which could be mineralized. An induced polarization ground geophysical survey is recommended to identify potential sulphide zones that could become targets for drill testing.

10.1.4 Roundy Creek

While the Sunlight and Sunshine zones appear to be fully delineated by drilling, the Roundy Zone remains open at depth. Re-evaluation of the geological setting of the deposit is recommended, to determine if the near-surface expression of mineralization is related to a deeper mineralized body of significant size.

10.2 Comment on Section 10

In the opinion of the QPs, while the majority of the exploration on the Project was completed prior to Avanti's ownership, the work completed has identified three deposits, and supports additional exploration.

11.0 DRILLING

A total of 62,223 m was drilled in 438 drill holes on the Kitsault property between 1959 and 2010 by KEL, BC Moly, CMC, Bell and Avanti (Table 11-1). Figure 11-1 presents a location plan for the Kitsault deposit; Figure 11-2 and Figure 11-3 shows the drilling at Bell Moly and Roundy Creek respectively.

11.1 Kitsault

Several core drilling campaigns were undertaken to define the Kitsault deposit, with a cumulative total of 41,686 m drilled. Drilling is summarized in Table 11-2.

Wire line drilling was the preferred method. The pre-Avanti drilling at Kitsault was primarily NX diameter (54.7 mm). Deeper holes were collared with BX diameter (413 mm) and reduced to NX when warranted. The pre-Avanti drill core was stored at the Kitsault town site, but was destroyed in 2007.

For the purpose of this review of the drilling on the Kitsault deposit, the drilling is divided into the pre-Avanti drilling, conducted prior to 2008, and the Avanti drilling which encompasses all the drilling since 2008. These divisions relate to the availability of information for these two periods.

The drill holes delineating the mineralization were drilled parallel to two main grids, an east–west grid and a north–south grid, with 29 drill holes oblique to both grids (refer to Figure 11-1).

Vertical and sub-vertical holes were drilled. The majority of sub-vertical holes were drilled from the center of the annular shaped mineralized body towards the outer edges of mineralization. The cylindrical annular mineralization is open-ended at depth.

The average sample length is 3 m, and in AMEC’s opinion, this sample length is suitable for the style of mineralization encountered at Kitsault. The thickness of mineralized intercepts ranges between tens of meters to several hundred meters.

Drill hole orientations are such that drilled intercepts are generally longer than the true thickness of the mineralization. The relationship between true thickness and drilled intercepts is shown in Figure 11-4 and Figure 11-5. The composite grades for the intercepts are shown in Table 11-3.

Table 11-1: Summary of Core Drilling on the Kitsault Property

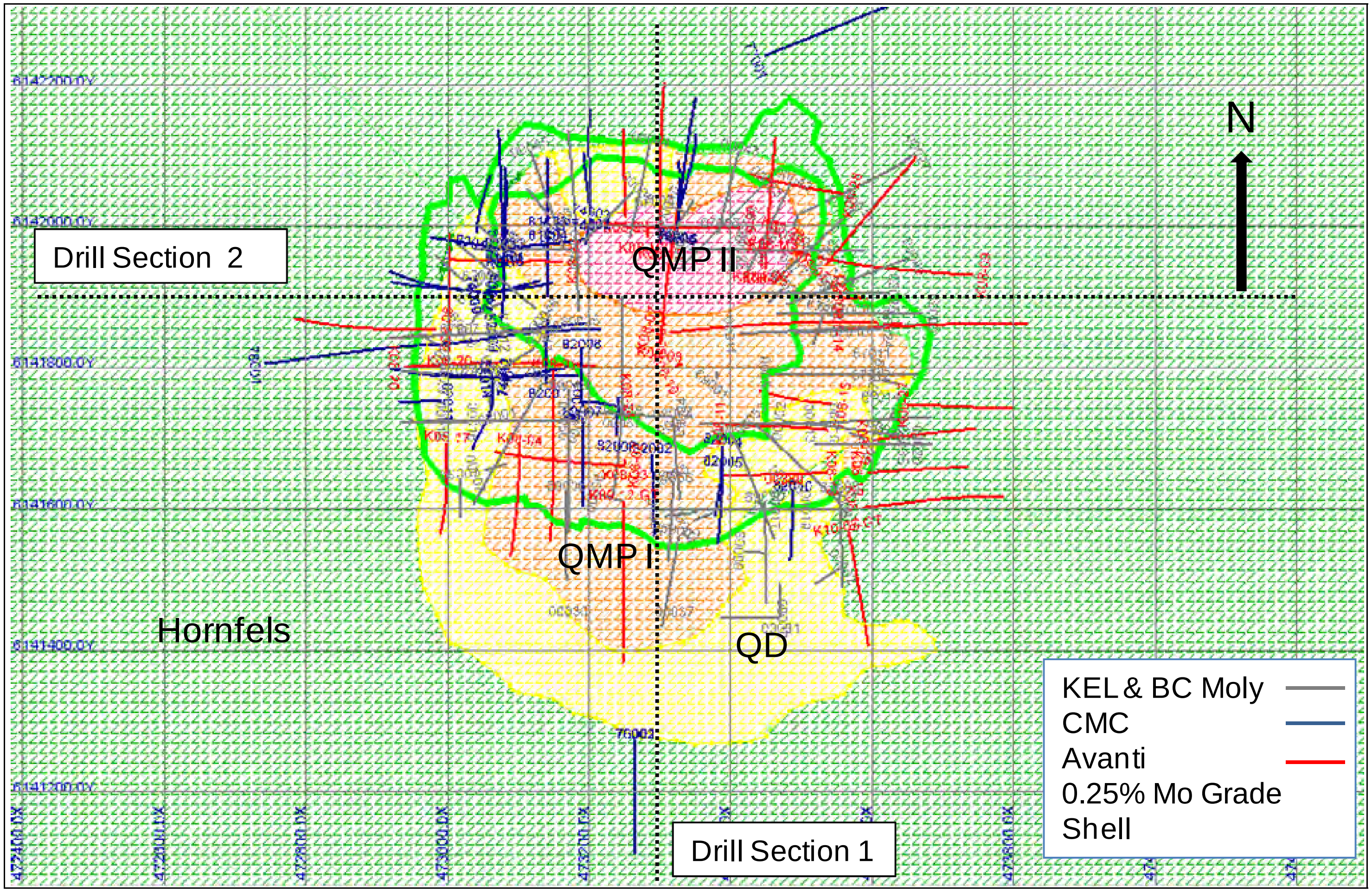
Deposit	Operator	Period	No. of Holes	Metres
Kitsault	KEL & BC Moly	1960–1969	99	18,373
	CMC	1974–1982	40	9,279
	Avanti	2008	33	10,599
	Avanti	2009	22	1,887
	Avanti	2010	28	1,548
Subtotal		**1969–2008**	**222**	**41,686**
Bell Moly	Bell and Predecessor	1975	36	5,462
	CMC	1976–1977	15	5,519
Subtotal		**1975–1977**	**51**	**10,981**
Roundy Creek *			165	9,556
Total		**1960–2008**	**438**	**62,223**

* Roundy Creek drilling was reported to be 9,300 m by Woodstock and Carter in 1976, but data recovered from Mintec indicates 9,556 m drilled.

Table 11-2: Summary of Core Drilling on the Kitsault Deposit

Operator	Drilling Company	Period	No. of Drill Holes	Length	Core Diameter
KEL	Mutch Drilling	1959	10	311.20	XRAY
KEL	Unknown	1960-1967	56	12,841.64	NX, AX BX,NW
BC Moly	Boyles Bros.	1967	22	1,474.91	NX
BC Moly	Connors Drilling	1968	10	2,982.48	Unknown
BC Moly	Connors Drilling	1968	1	762.30	NX
CMC	Tonto	1974–1977	18	4,205.97	BQ
CMC	Coates Drilling	1976	2	708.05	BQ
CMC	Cameron McCutcheon	1978	2	1,073.20	NQ
Kitsault Mine	Connors Drilling	1980–1981	6	1,384.10	NQ
CMC	JT Thomas	1982	12	1,907.20	NQ
Avanti	Driftwood Drilling Co	2008	33	10,599.36	HQ & NQ
Avanti	Driftwood Drilling Co	2009	22	1,887.33	HQ &NQ
Avanti	Geotech Drilling Services Ltd. and Radius Drilling Corp.	2010	28	1,548.30	
		Total	222	41,686.04	

Figure 11-1: 400 m Elevation Geology Plan with Drill Hole Location Map for the Kitsault Deposit, Illustrating the Relationship between Drilling and Mineralization



Note: grid scale shown on plan is 200 m x 200 m. QD = quartz diorite, QMPI = QMP-I, QMPII = QMP=II

Figure 11-2: Drill Location Plan, Bell Moly

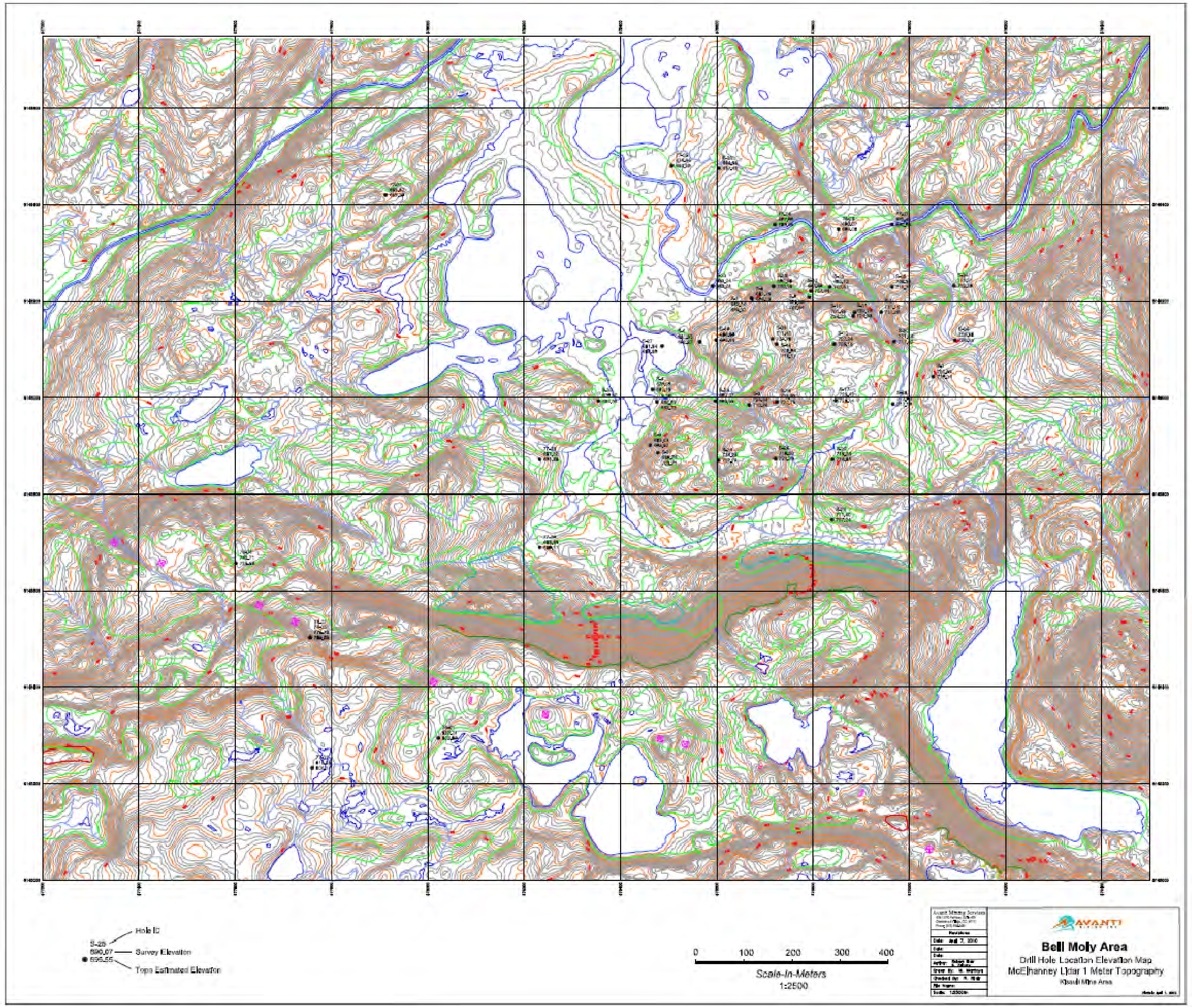


Figure 11-3: Drill Location Plan, Roundy Creek

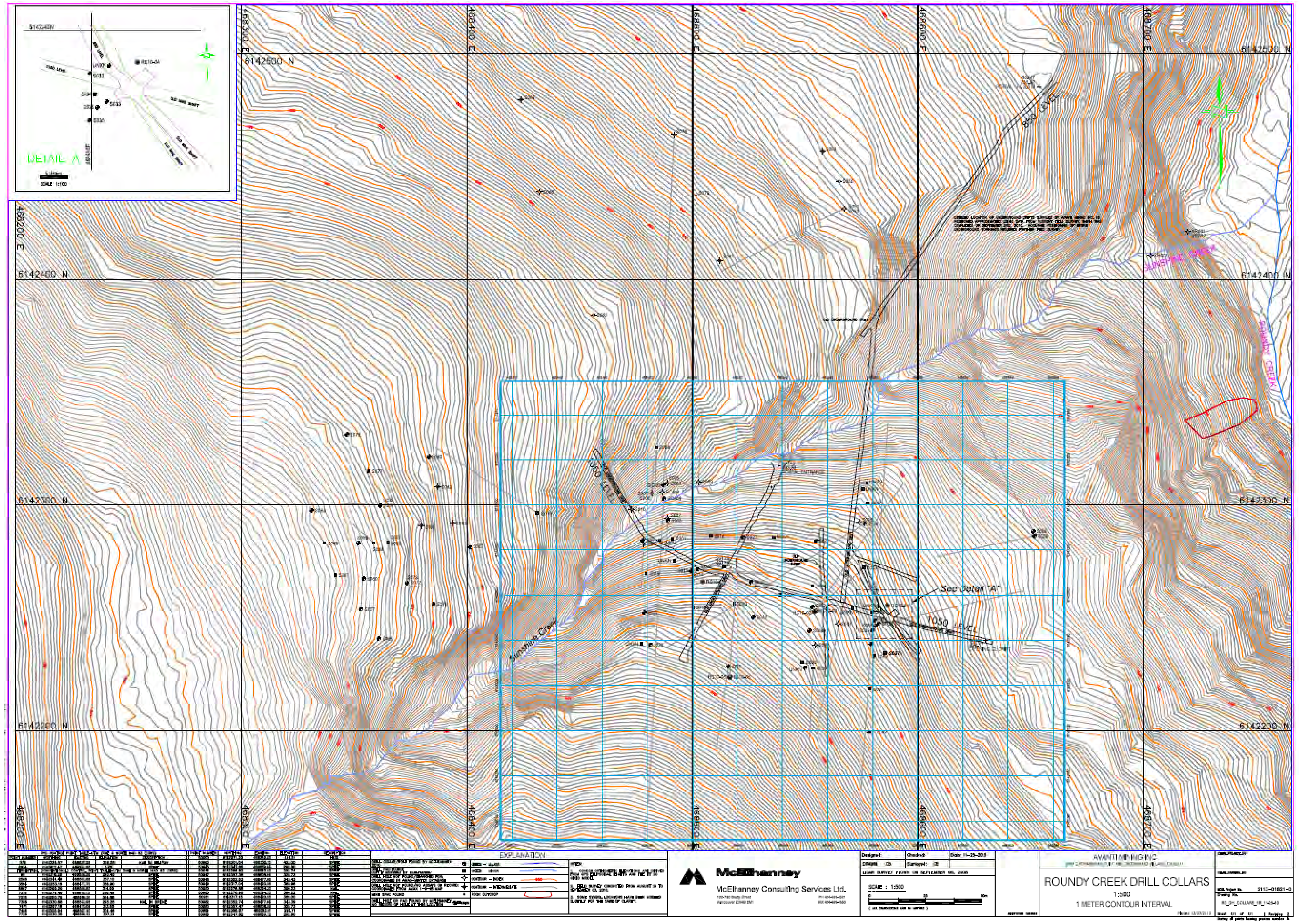
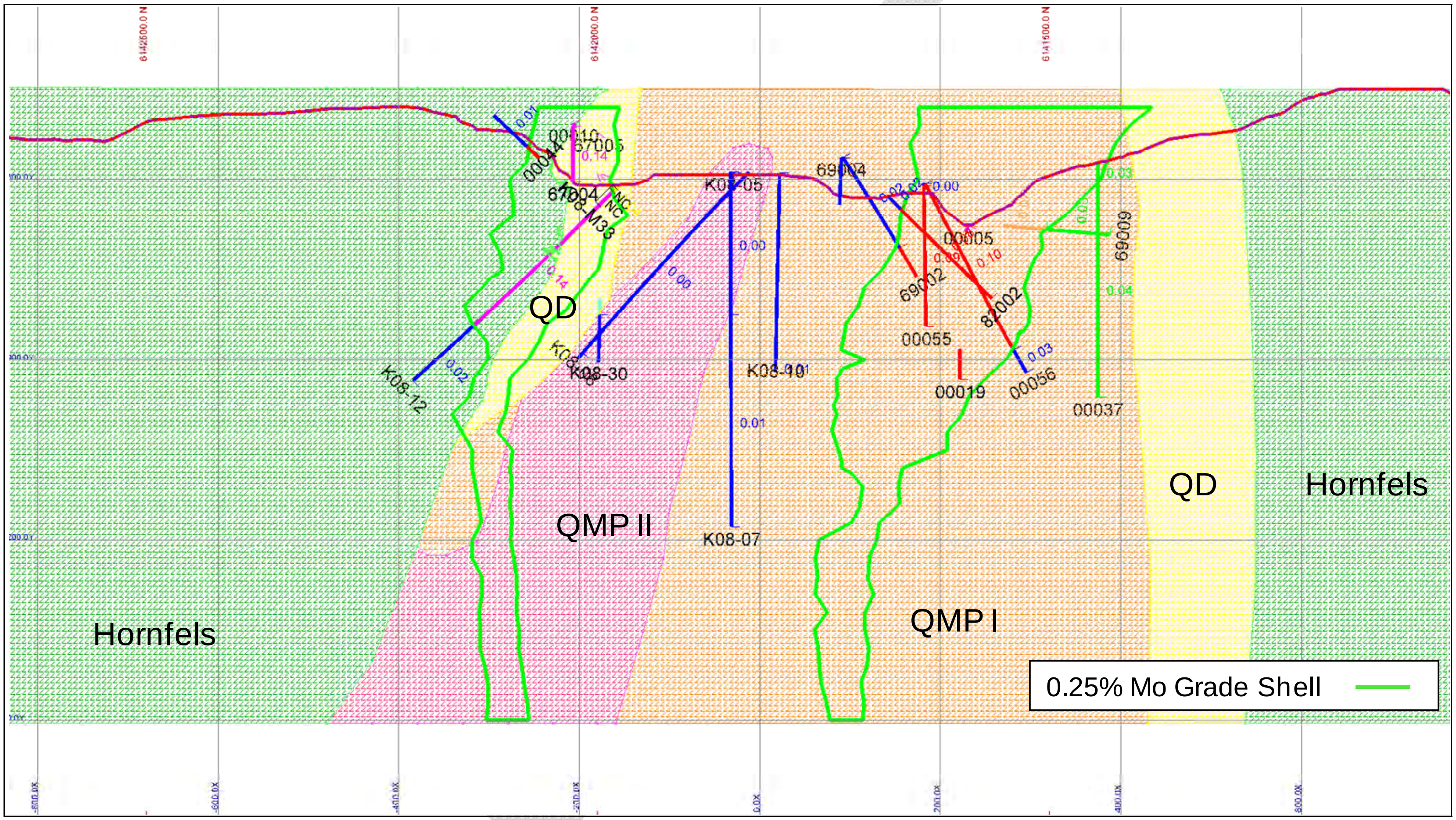
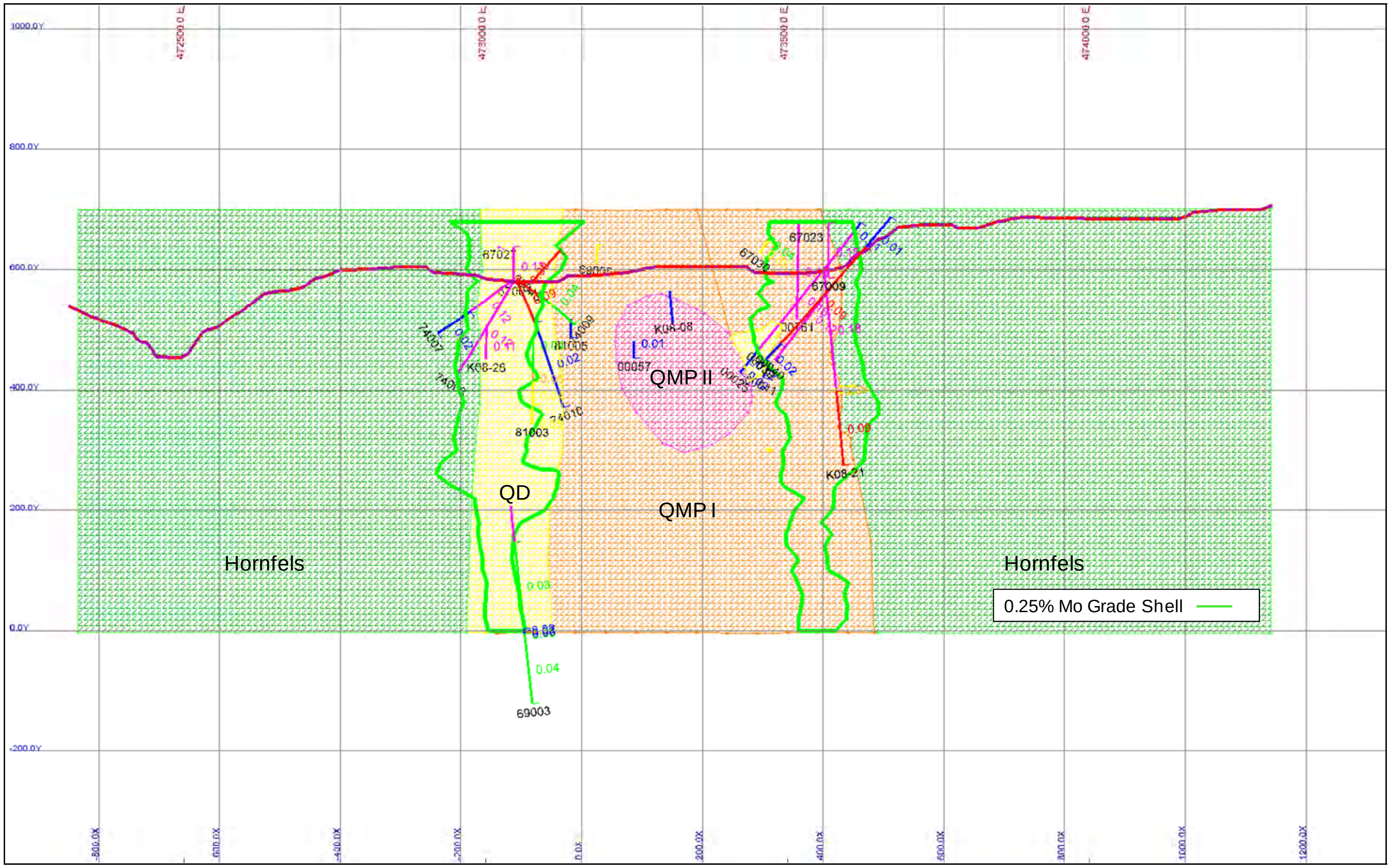


Figure 11-4: Drill Section 1 Illustrates the Relationship between Drilled Thickness and True Thickness of Mineralization for the Kitsault Deposit



Note: grid scale shown on plan is 200 m x 200 m. QD = quartz diorite, QMPI = QMP-I, QMPII = QMP=II. Section location is shown in Figure 11-1.

Figure 11-5: Drill Section 2 Illustrates the Relationship between Drilled Thickness and True Thickness of Mineralization for the Kitsault Deposit



Note: grid scale shown on plan is 200 m x 200 m. QD = quartz diorite, QMPI = QMP-I, QMPII = QMP=II. Section location shown in Figure 11-1.

Table 11-3: Representative Mineralized Intercepts of the Kitsault Deposit Illustrated in Figures 11-4 and 11-5

Drill Hole	Operator	From (m)	To (m)	Length (m)	Mo %	Section
10	KEL	-	30.78	30.78	0.12	473300 E
19	KEL	-	295.96	295.96	0.09	473300 E
44	KEL	51.21	154.43	103.22	0.09	473300 E
55	KEL	2.47	158.8	156.33	0.09	473300 E
56	KEL	0.38	209.06	208.68	0.10	473300 E
67004	KEL	-	61.87	61.87	0.14	473300 E
67005	KEL	-	63.4	63.4	0.14	473300 E
69002	KEL	118.18	222.18	104	0.09	473300 E
69009	KEL	-	59.84	59.84	0.07	473300 E
82002	CMC	18.48	160.39	141.91	0.08	473300 E
K08-12	Avanti	11.54	225.11	213.57	0.14	473300 E
25	KEL	24.35	276.98	252.63	0.16	6141900 N
39	KEL	65.32	278.93	213.61	0.09	6141900 N
40	KEL	93.32	300.72	207.4	0.12	6141900 N
46	KEL	3.41	204.81	201.4	0.08	6141900 N
761	KEL	0.25	162.14	161.89	0.15	6141900 N
67001	KEL	-	60.96	60.96	0.13	6141900 N
67030	KEL	10.48	39.32	28.84	0.05	6141900 N
74007	CMC	-	88.4	88.4	0.12	6141900 N
74008	CMC	-	181.33	181.33	0.12	6141900 N
81003	CMC	184.97	203.2	18.23	0.06	6141900 N
81003	CMC	243.76	299.29	55.53	0.05	6141900 N
K08-21	Avanti	-	197.58	197.58	0.18	6141900 N
K08-26	Avanti	-	249.92	249.92	0.11	6141900 N

The deepest mineralized sample was collected at 769 m below surface in drill hole DH68001 and had a grade of 0.113% Mo.

The mean length-weighted grades of all KEL (0.058% Mo) and CMC (0.053% Mo) drilling compare well with each other. The Avanti mean length weighted grade (0.091% Mo) is higher relative to KEL and CMC. However, as the Avanti infill drilling concentrated on the area of known mineralization, a higher mean grade would be expected.

11.1.1 Pre-Avanti Drilling

During the KEL exploration, the first 10 core holes were drilled by Mutch Drilling as "Xray" diameter core. The Xray diameter corresponds to either XRT (18.7 mm) or EX (21.5 mm) diameter core. The remaining 89 core holes drilled on behalf of KEL and BC Moly was undertaken at AX (32.5 mm), BX (42 mm) and NW and NX (54.7 mm) diameters.

CMC and Kitsault Mine drilled 40 holes to delineate the near-surface mineralization on the western flank of the deposit. Of these, three holes were drilled in the area of a proposed tunnel outside of the proposed mine site and were not intended to intersect the deposit. CMC drilled BQ (36.4 mm) and NQ (47.6 mm) core diameters. Kitsault Mine drilled NQ size core.

11.1.2 Avanti Drilling

Avanti drilled 33 confirmation holes in 2008, 22 geotechnical drill holes in 2009, and 28 geotechnical and hydrological drill holes in 2010. The purpose of the 2008 drilling was to support a higher-confidence mineral resource classification from Inferred to Indicated, as well as to conduct exploration in previously unexplored areas. The Kitsault, 2008 conformation drilling, conducted by Driftwood Diamond Drilling Ltd., was infill drilling along north–south and east–west section lines in all known areas of mineralization of the Kitsault deposit.

The 2008 drill program included three 25 m metallurgical test holes which do not support the mineral resource estimate. Three geotechnical drill holes were included for geological interpretation purposes.

Avanti typically drilled HQ (63.5 mm) core, reducing to NQ size core at depth.

11.2 Geological Logging

There is limited information on pre-Avanti drill logging procedures. Logs were typically performed using standard paper logging sheets, although some of the pre-Avanti drill logging was done in field books.

Geological logging during Avanti drill programs was performed using paper logging sheets that were later transcribed to digital files. Logging recorded lithology, alteration, mineralization, weathering, veining, textures, grainsize and content, and structure, using pre-set codes. Drill logs also had provision for comments, and a graphic log.

Geological logs also recorded some structural/geomechanical data, including core recovery, lengths of core sections, rock quality designation (RQD), presence and frequency of fractures, and structures to core axis. Geotechnical logging typically recorded recovery information, rock type, rock mass rating (RMR) data with unconfined compressive strength (UCS), number of joints, joint condition, and water rating by drill run.

11.3 Surveys

The collar survey methods for the Kitsault deposit varied over time, and there is little information on the methods used. The different methods are summarised in Table 11-4.

The original KEL collar surveys were completed by R.I. McNiell on a local imperial grid. The BC Moly collar surveys were conducted by mine personnel, but the method is unknown. Some of the collar surveys by CMC conducted between 1974 and 1977 were completed using a transit method by unknown surveyors. The surveyor and method used for the remainder of the holes during this period is unknown. The collar surveys for Kitsault Mine and CMC holes drilled in 1981 and 1982 were completed by mine personnel using a Geodimeter total station.

All the survey information prior to the CMC drilling was converted to an AMAX grid, which was used by CMC and the Kitsault Mine.

The collar survey coordinates of the AMAX grid were later converted to NAD83 UTM Zone 9 metric coordinates.

The 2008 to 2010 Avanti collar surveys were conducted by McElhanney Consulting Services Ltd using Leica 1200(GX1230) dual frequency GPS receivers. Collars were surveyed using the NAD83 UTM Zone 9 metric coordinate system.

Table 11-4: Summary of Collar and Down Hole Survey Methods Used For Drilling at the Kitsault Deposit

Operator	Period	No. of Drill Holes	Collar Surveyor	Collar Survey Method	Down Hole Survey Method
KEL	1959	10	Unknown	Stadia Compass	None
KEL	1960-1967	56	RI McNiell, Mine Personnel	Unknown	Dip test , Pajari
BC Moly	1967	22	Mine Personnel	Unknown	Unknown
BC Moly	1968	11	Mine Personnel	Unknown	Pajari
CMC	1974-1977	18	Unknown	Transit	Eastman
CMC	1976-1978	4	Unknown	Unknown	Unknown
CMC	1978	2	Unknown	Unknown	Unknown
Kitsault Mine	1980-1981	6	Mine Personnel	Geodimeter	Dip Test
CMC	1982	12	Mine Personnel	Geodimeter	Unknown
Avanti	2008-2009	55	McElhanney	GPS	Reflex
Total		**194**			

11.3.1 Down-hole Surveys

Several different methods were used to determine the deflection of the core drill holes (refer to Table 11-4).

Sixty percent of the total length drilled is supported by down-hole surveys; with the remainder not surveyed, or surveyed by acid-etch methods for dip deflection only.

Pre-Avanti drill holes without down-hole surveys have an average length of 123 m and are shallow enough that the possible deflection of these holes is considered minimal. The 36 pre-Avanti drill holes which are partially supported by acid-etch dip tests have an average length of 228 m. Possible deflection in azimuth of these holes is also considered minimal. The down-hole survey readings prior to 1969 were taken at irregular intervals ranging from 15.24 m (50 feet) to 152.4 m (500 feet). Down hole survey intervals for the period 1974–1982 were conducted at regular 15.24 m (50 feet) intervals.

The Avanti drill holes were surveyed with the Reflex EZ Shot at 50 m intervals.

A Reflex ACT core orientation tool was employed in six of the 22 drill holes selected for geotechnical testing, and was supervised by SRK geotechnical personnel. The remainder were surveyed with a Reflex EZ Shot down-hole instrument.

11.3.2 Core and Pulp Storage

After sampling, the remaining Avanti core was returned to the original core boxes and stored in semi-permanent core racks at the Kitsault campsite. Core that was drilled prior to 2007 was stored at the former Kitsault town site, but was destroyed in 2007.

Sample pulps are retained by ALS Chemex in Terrace, BC. Pulp rejects were initially stored at ALS Chemex, but were then moved back to the sample preparation facility in Terrace and are currently stored by Avanti at the sampling preparation facility.

11.3.3 Core Recovery

Core recovery for KEL drill holes DH038 to DH67030 was reviewed using documentation at the Rio Tinto offices in Vancouver. The average core recovery is reported at 89% for DH038 to DH058, and at 88% for DH67001 to DH67030. The only other pre-Avanti core recovery data available is for the 1981 drilling where RQD and core recovery was measured. For this period, the average measured core recovery was 90%.

For the 2008 drilling, core recovery was measured in all drill holes. The average measured core recovery was 95%. The 2009 and 2010 core recovery was recorded for all drilling but not reviewed by AMEC. The recovery for this period is expected to be similar to that reported for the 2008 drill program.

11.4 Comment on Section 11

In the opinion of the QP, the quantity and quality of the lithological, geotechnical, collar and downhole survey data collected in the exploration and infill drill programs are sufficient to support Mineral Resource and Mineral Reserve estimation as follows:

- Core logging meets industry standards for molybdenum exploration
- Collar surveys have been performed using industry-standard instrumentation
- Down-hole surveys were performed using industry-standard instrumentation
- Recovery data from core drill programs are acceptable
- Geotechnical logging of drill core meets industry standards for planned open pit operations
- Drill hole spacing is appropriate for porphyry-hosted molybdenum mineralization.

- Depending on the dip of the drill hole, and the dip of the mineralization, drill intercept widths are typically greater than true widths
- Drill orientations are generally appropriate for the mineralization style, and have been drilled at orientations that are optimal for the orientation of mineralization for the bulk of the deposit area
- Figures 7-5 to 7-7 display typical drill hole orientations for the Kitsault deposit, show summary assay values using colour ranges for assay intervals that include areas of non-mineralized and very low grade mineralization, and outline areas where higher-grade intercepts can be identified within lower-grade sections. The sections confirm that sampling is representative of the molybdenum grades in the deposits, reflecting areas of higher and lower grades
- Drill hole intercepts as summarized in Table 11-3 and shown schematically on Figures 11-2 to 11-3 appropriately reflect the nature of the molybdenum mineralization
- The drill core diameter that was used is suitable for the style of mineralization with the exception of the first 10 x-ray diameter drill holes. The x-ray diameter is considered too small to allow for representative sampling. AMEC recommended that the analyses of these holes be excluded for resource estimation process and the drill holes do not support the estimates in Section 17 of this Report.

12.0 SAMPLING METHOD AND APPROACH

There is no remaining information available on the sampling method and approach for legacy exploration-stage sampling such as geochemical, trench and adit sampling. Discussion and conclusions on pre-Avanti sampling presented in this section are based on a review of available pre-Avanti drill logs, the drill-hole database, and interviews with former employees of past producer CMC.

12.1 Core Sampling

The sampling procedure used to collect core at Kitsault is as follows:

- All the sampling is from core
- The entire length of the drill hole below alluvium is sampled
- After logging, samples are marked in 10 ft or 3 m lengths
- The geological contacts are generally ignored
- Where molybdenite paint occurs on fracture surfaces, care is taken to mark and split the core to include an equal distribution of the molybdenite paint in both portions
- Sample intervals are assigned a unique sample number
- The entire core is split on site. Pre-Avanti core was split with a core splitter. Avanti core was sawn.
- Half the split core is bagged and sent for analyses.
- Half of Avanti core is stored in trays in semi-permanent wooden core racks at Kitsault mine. The pre-Avanti core archive was destroyed in 2007.

A total of 11,880 individual core samples were collected during exploration and delineation drilling. Average sample spacing is 50 m. Sampling is from a combination of vertical and inclined holes occasionally drilled from common collar locations. This results in a drill hole or sample spacing which increases with depth. Samples were collected from an area approximately 1,000 m by 800 m, and from surface to a depth of 769 m.

12.2 Quality Assurance and Quality Control

The quality assurance and quality control (QA/QC) programs for the Project are discussed in Section 13.

12.3 Density/Specific Gravity

The Project database includes 133 density determinations performed using a wax seal method on drill core from the 2008 Avanti drilling. Table 12-1 shows the average specific gravity (SG) values calculated by Wardrop in 2009.

Table 12-1: Average SG Values for Kitsault Resource Model

Rock Type	Determinations	Density (g/cm^3)
Quartz Diorite	26	2.66
Hornfels	39	2.70
Quartz Monzonite Porphyries	68	2.63

Density values were assigned to blocks based upon the lithological codes. There are limited density data for a project at feasibility level. AMEC notes, however, that most of the rock is unweathered, and only small variations in SG should occur due to weathering or depth.

12.4 Comment on Section 12

In the opinion of the QPs:

- The sampling procedures meet industry standards and are suitable for the deposit type
- No drilling, sampling or recovery factors are apparent that could materially impact the accuracy, and reliability of the results
- The sampling method has resulted in samples of reasonable quality which show no material biases and that are considered representative of the mineralization present at Kitsault, apart from the first 10 KEL drill holes, which are small in diameter and exhibit a slightly higher grade than surrounding drill holes.

AMEC recommends additional density determinations are performed. Each lithology and mineralization type should have a minimum of 30 determinations to ensure a statistically representative sampling of the variations in density throughout the deposit.

Avanti should implement a systematic specific gravity determination program to ensure there are sufficient SG results to be representative of the entire lithological rock suite.

13.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

Since Avanti acquired the Project in 2008, Project staff employed by Avanti were responsible for the following:

- Sample collection
- Core splitting
- Preparation of samples for submission to the analytical laboratory
- Sample storage
- Sample security.

There is limited remaining information on staff involvement of the operator at the time for the KEL, BC Moly, and CMC legacy drill program sample collection, sample preparation and analysis, and sample security. Discussion and conclusions presented in this section are based on a review of available pre-Avanti drill logs, the drill-hole database, and interviews with former employees of past producer CMC.

13.1 Analytical Laboratories

Several different laboratories were used by the various operators for primary analyses and are listed in Table 13-1. The laboratory accreditations prior to Avanti's involvement in the project are unknown.

Table 13-1: Primary Laboratories used for Kitsault Samples

Period	Operator	Laboratory
1959 to 1963	KEL and BC Moly	Elderidge and Co.
1967	KEL and BC Moly	Kennco Explorations Ltd, Vancouver
1968 to 1969	KEL and BC Moly	BC Molybdenum Ltd.
1974	CMC	Skyline and FLOOX SPEC Lab, Colorado
1976	CMC	Skyline, Colorado
1977	CMC	Unknown
1978	CMC	Skyline, Colorado
1980 to 1982	CMC	Rosebacker Lab, Burnaby
2008	Avanti	ALS Chemex, Vancouver
2009 and 2010	Avanti	ALS Chemex, Vancouver and Acme Vancouver

For the Avanti drill programs, ALS Chemex of Vancouver, BC was the primary analytical laboratory, and Acme Analytical Laboratories Ltd. (Acme), of Vancouver, BC was used as a secondary laboratory for check assays. Both ALS Chemex and Acme are ISO 9001:2000 certified.

13.2 Pre-Avanti Drilling Sample Preparation and Analysis

13.2.1 KEL and BC Moly (1959–1969)

There is no information available about sampling preparation, analytical methods, and any quality assurance and quality control (QA/QC) procedures used by KEL and BC Moly for the Kitsault deposit. The KEL Mo values were reported as MoS_2.

13.2.2 CMC (1974–1982)

Sampling procedures involved core splitting and sampling, with one half of the core retained and the other placed in a canvas bag and shipped to a sampling preparation facility in Smithers, BC.

At the Smithers sample preparation facility, the following process was followed:

- Samples were crushed to 100% passing 80 mesh
- The crushed material was split in half using a Jones splitter to produce a sample weighing 2 kg
- The 2 kg sample was split twice using a Jones splitter to reduce it to a 500 g sample
- The 500 g sample was pulverized to 100% passing a -100 mesh, rolled on a mat and 100 g was split
- A series of standards and duplicates were inserted with the sample submission
- The pulps were placed in sealed sample envelopes and sent to the laboratory
- The reject material was stored for future reference.

All samples were analysed for Mo and reported as $MoS_{2.}$ Lead was included in the analysis only after 1978. Skyline used the Climax Molybdenum ass ay procedure which is a three-acid digestion of the pulp, titration of the aliquot, with analyses by mass spectrometer. Lead analytical procedures used are unknown.

There is no information available for the Rossbacker laboratory procedures or QA/QC.

13.3 Avanti Drilling Sample Preparation and Analysis

13.3.1 Sample Preparation

During the 2008 drilling program, all the work on the core was conducted by geologists supplied by APEX Geoscience Ltd. of Edmonton, Alberta. Work was conducted under the direct supervision of an Avanti project geologist.

At the sample preparation facility, the following process was followed:

- After sample intervals were marked, the core was transported to the core cutting facility along with bags containing standards
- Core was cut randomly, except where molybdenum occurred as molybdenite paint on fracture and joint surfaces
- A core inventory system was maintained
- Samples were split and unique laboratory-generated tags were inserted
- QA/QC samples and blanks were inserted by sampling staff
- Samples were shipped at the end of each working day
- Samples bags were tied to make them tamper-proof
- The chain of custody form was passed on to the laboratory.

Samples were received at the ALS Chemex facilities in Terrace, BC. The ALS sample preparation procedure (CRU-32) is as follows:

- Core samples in their canvas bags were dried at 60˚C
- Samples were crushed to 85% passing 10 mesh (2 mm)
- Crushed material was split in a Jones splitter to obtain a 500 g split
- Coarse rejects were kept for future reference
- The 500 g split was pulverized in a ring-and-puck pulverizer to 95% passing 150 mesh (65 µm).

13.3.2 Sample Analyses

ALS Chemex uses an ICP atomic emission spectrometry CP61 (four acid) method for a 33-element analysis. In addition, sulphide sulphur was determined using the sodium carbonate dissolution of sulphate, Leco furnace and infrared spectroscopy (SIR07) method. Sulphate sulphur was determined by carbonate leach, and gravimetric analyses (S-GRA06).

The check samples at Acme were analysed using a four-acid digestion followed by ICP mass spectrometry.

13.4 Quality Assurance/Quality Control Programs

AMEC reviewed the 2008 and 2009 QA/QC data for Mo. Although Pb and Ag are not considered economic contributors to the mineral resource, they have significance to mineral processing. Therefore, AMEC reviewed the QA/QC for Pb and Ag, where available.

The Avanti quality control on the assay data-set includes blanks, coarse duplicates, pulp duplicates, three Mo certified reference materials (CRMs) (AV-1, AV-2, and AV-3) and check assays. The insertion rates of the different QA/QC samples are shown in Table 13-2.

Table 13-2: Insertion Rates of QA/QC Samples for the 2008–2009 Avanti Drilling Program

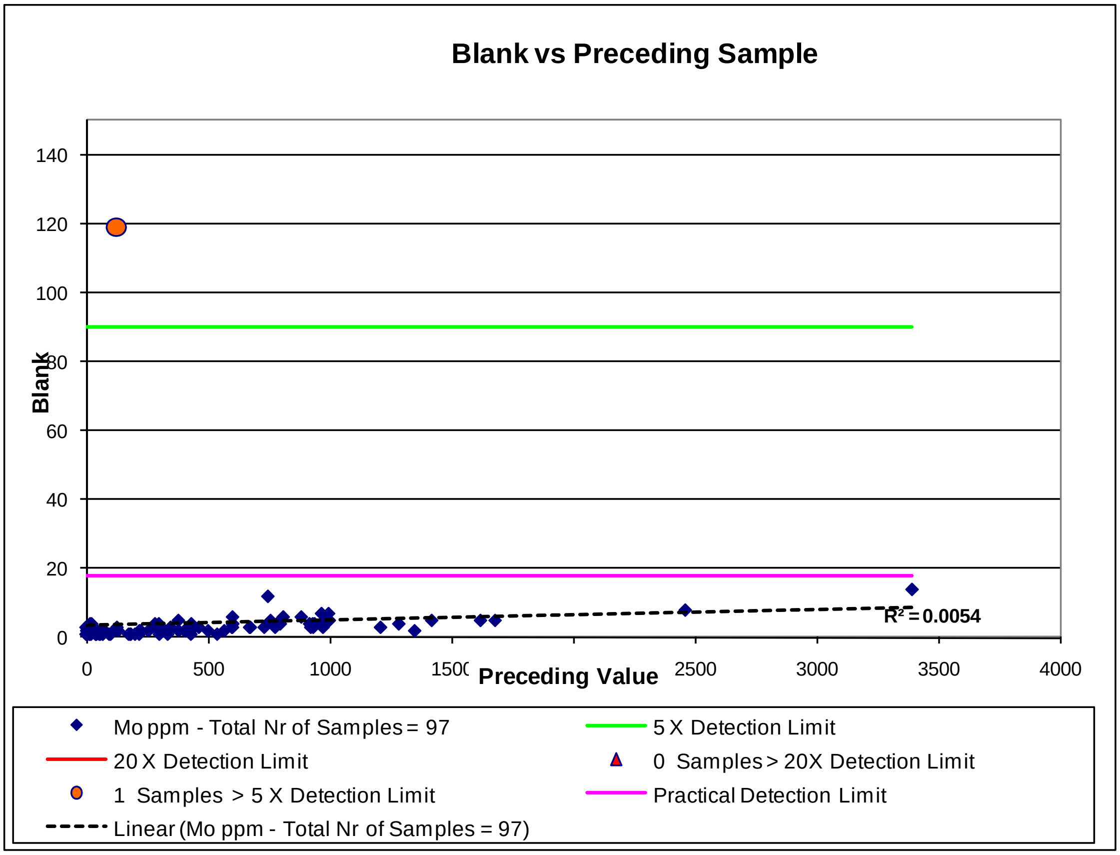
Standard	No of Samples	No of QA/QC Samples	Insertion Rate (%)
Blanks	3,324	97	3
Coarse Reject Duplicates	3,324	92	3
Pulp Duplicate	3,324	93	3
CRM AV-1	3,324	60	2
CRM AV-2	3,324	65	2
CRM AV-3	3,324	50	2
Check Assays	3,324	36	1
Check Assays 2010	3,234	321	10
Cumulative Insertion Rate			26

The 3% insertion rate of blanks is slightly low, but acceptable. Avanti conducted a more comprehensive check assay program in 2010 and included CRMs with the check assays to test the secondary laboratory accuracy for Mo, Zn, and Pb.

13.4.1 Assessment of Sample Contamination Using Blanks

Blanks were routinely inserted to measure contamination during sample preparation. There is evidence of minor contamination when comparing the grades of blank assay with preceding sample values (Figure 13-1). Only one blank sample assayed greater than 20 times the practical detection limit. The 1% contamination rate is within acceptable limit of 5%.

Figure 13-1: erformance of Blanks at ALS Chemex for Mo

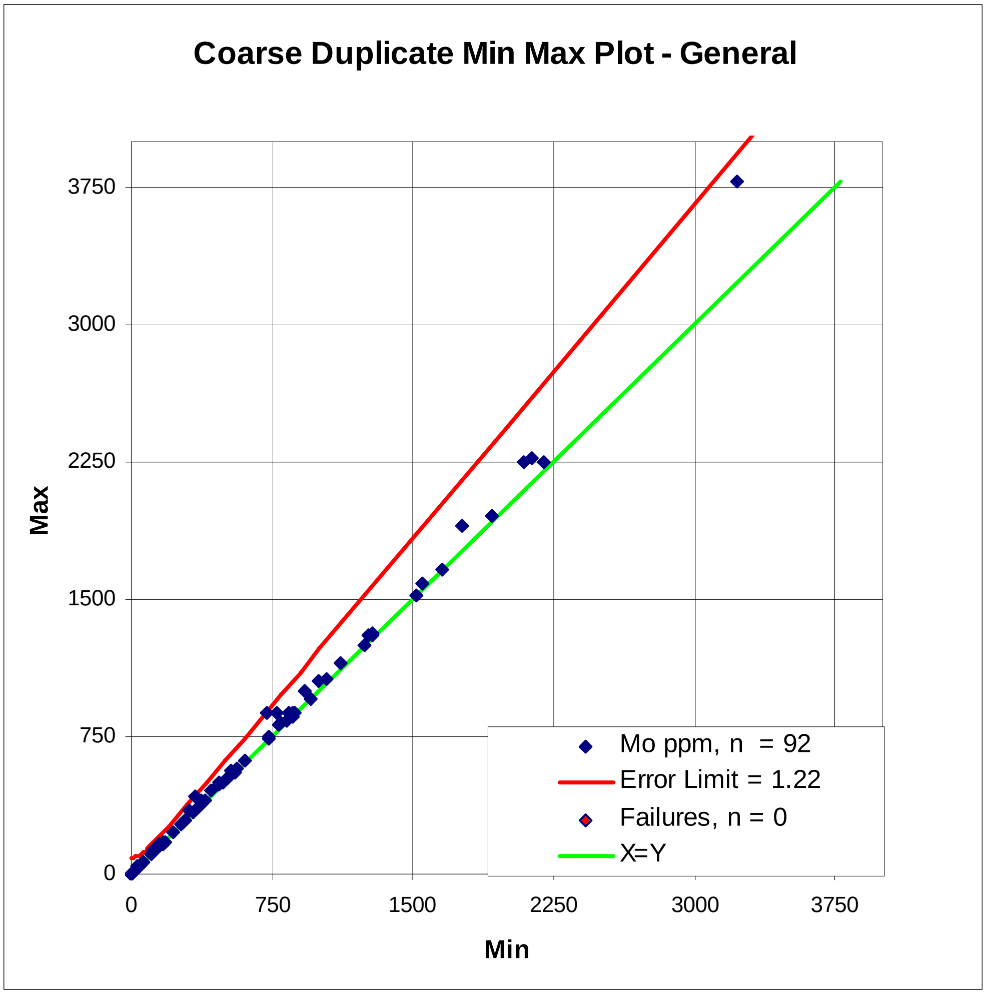


13.4.2 Precision Assessed by Coarse Reject Duplicates

AMEC compared the performance of coarse duplicates of Mo, Pb, and Ag for 92 data pairs using Min Max plots. Coarse duplicates are used to test for precision during sub-sampling process. If less than 10% of the data pairs exceed the error limit, which is set at a slope of 1.22, representing a sub-sampling error limit of 20%, the precision during sample preparation is considered acceptable. None of the Mo sample pairs (Figure 13-2) exceed the error limit. Only 2.2% of the Pb sample pairs and 1.1% of the Ag sample pairs exceed the error limit.

The performance of the coarse duplicate assays indicate that the sub-sampling processes at the preparation facility is under control and do not introduce any bias to assay results.

Figure 13-2: Performance of Coarse Reject Duplicates at ALS Chemex for Mo

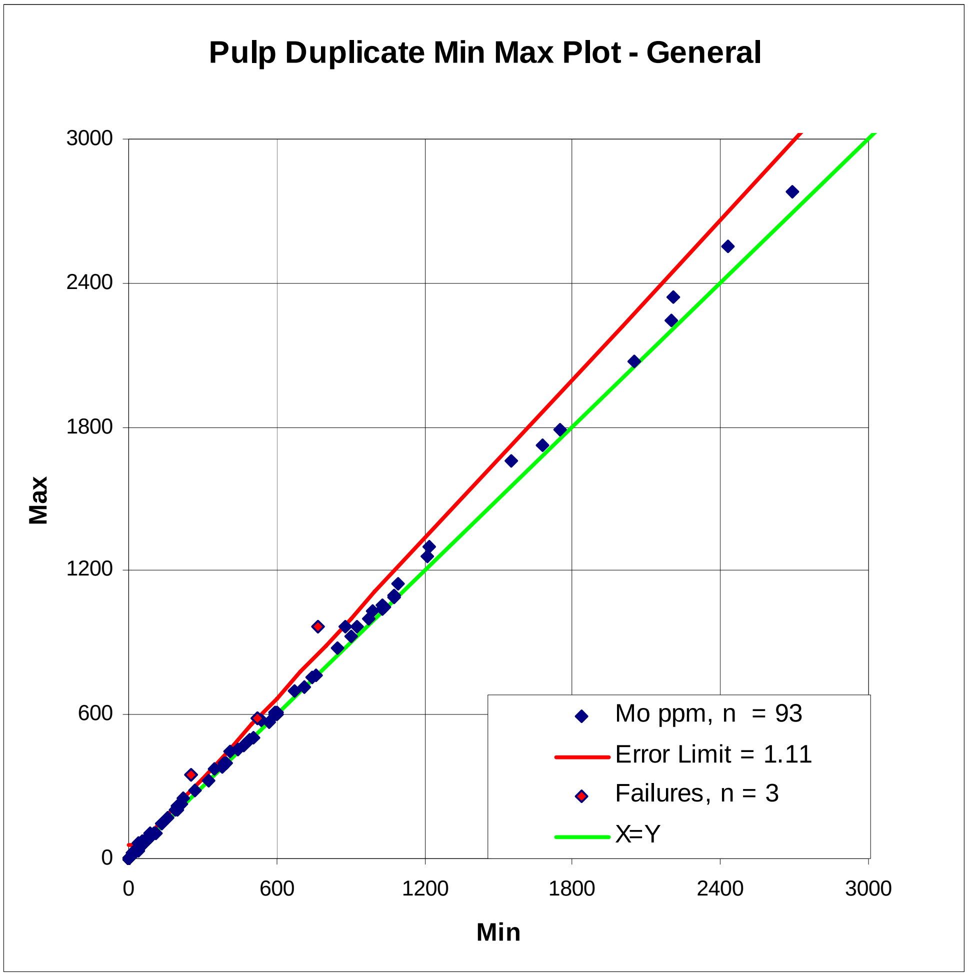


13.4.3 Precision Assessment Using Pulp Duplicates

The database contains 93 pairs of pulp duplicates. The duplicates are prepared by making a second split of the pulverized material. If less than 10% of the data pairs exceed the error limit, which is set at a slope of 1.11, representing a sub-sampling error limit of 10%, the precision during sample preparation is considered acceptable. The performance of Mo is illustrated in Figure 13-3. Only 3.2% of the Mo and Pb duplicate pairs exceed the error limit. The error limit for Ag is exceeded by only 2.2% of the duplicate pairs.

The performance of the pulp duplicate assays indicates that the precision of the analytical methods at ALS is under control and do not introduce any significant error or bias to the assay results.

Figure 13-3: Performance of Pulp Duplicates at ALS for Mo



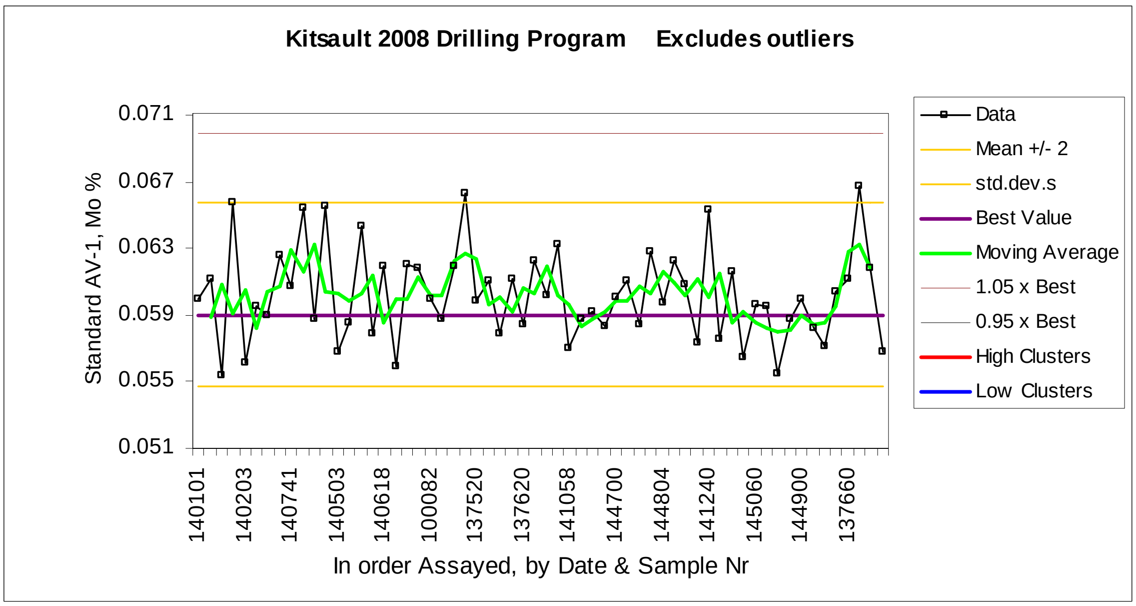
13.4.4 Accuracy Assessment Using CRMs

CRMs certified by Smee & Associates Consulting Ltd were routinely inserted into each batch submitted to ALS Chemex. Of the 174 samples, one CRM had a value that was significantly different from the expected values and was likely a sample mix up. AMEC considers a bias between the expected value and the assayed value of a CRM that is less than ±5% indicates reasonable accuracy. The assay results of the Mo CRMs are shown in Table 13-3 and performance of AV-1 value over time is shown in Figure 13-4. The bias for Mo is not minor.

Table 13-3: Summary of the Performance of CRMs at ALS

	CRM Certified Values		ALS Chemex Results			
CRM	Certified Mean (Mo%)	Std Dev	No. of Samples	Calculated Mean (Mo%)	Calculated Std Dev	Relative Bias
AV – 1	0.059	0.008	60	0.060	0.003	2.0%
AV – 2	0.115	0.010	64	0.118	0.007	2.3%
AV – 3	0.176	0.016	50	0.180	0.010	2.2%

Figure 13-4: Performance of CRM AV-1 at ALS for Mo



The performance of the CRMs indicates that the accuracy of the analytical methods at ALS is under control.

13.4.5 Acme Check Assays

Avanti selected as single batch of 36 samples that had a failure of one of the Mo CRMs, and submitted them as check samples to Acme. The Acme check assays were submitted with the three Mo CRMs, but did not include independent Pb and Ag CRMs. A check assay that is conducted on the results of a single batch is not considered representative of the assay campaign.

The statistics of the Acme check assays are shown in Table 13-4. AMEC removed one outlier for Pb and two for Ag, where the Acme analyses were below the detection limit.

Table 13-4: Comparison of ALS Chemex and Acme Check Assay Results

		ALS		Acme		
	No of samples	Ave	SD	Ave	SD	Bias
Mo %	36	0.133	0.100	0.132	0.093	7.2%
Pb ppm	35	60.66	55.98	63.82	58.82	-5.1%
Ag ppm	34	1.29	1.46	1.07	1.13	22.8%

AMEC considers a bias less than 5% to show acceptable accuracy. A bias between 5% and 10% is considered to show questionable accuracy. A bias higher than 10% is considered to show unacceptable accuracy. The check assay results indicate that there are questionable biases for Mo (7%) and Pb (-5%). There is an unacceptable 22.8% bias for Ag.

The check assay results for Mo and Ag are illustrated using Reduced to Major Axis (RMA) plots in Figure 13-5 and Figure 13-6. CA refers to the check assay results.

Based on these check assay results, Avanti re-submitted the pulps at ALS Chemex with the three Mo CRMs which this time returned acceptable results (Table 13-5).

This second set of ALS Chemex assay results was then included in the final database.

Figure 13-5: Performance of Check Assays at ALS Chemex and Acme for Mo

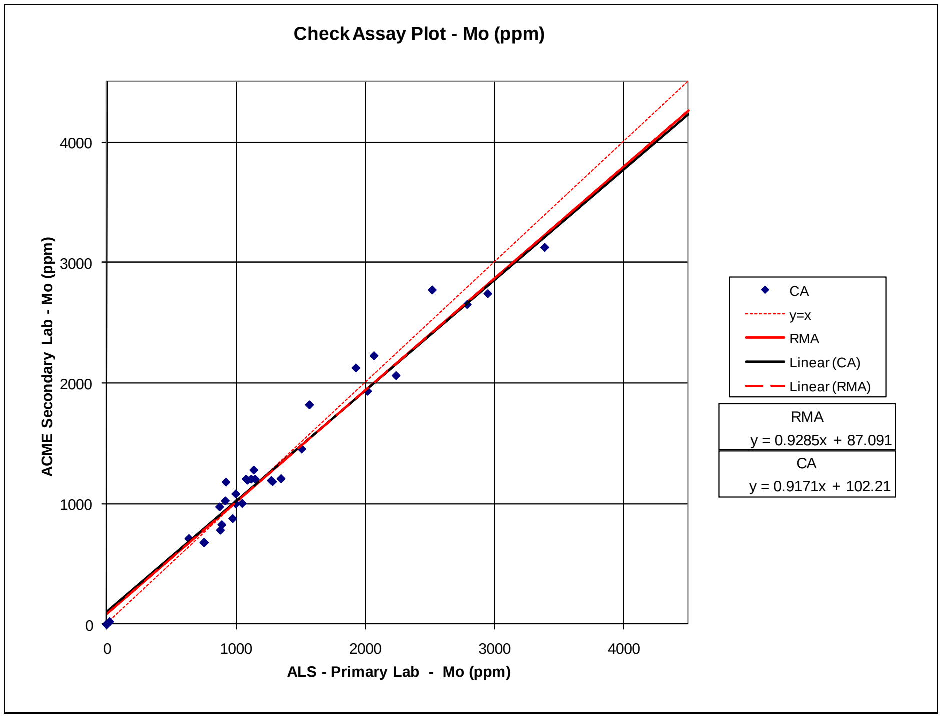


Figure 13-6: Performance of Check Assays at ALS Chemex and Acme for Ag

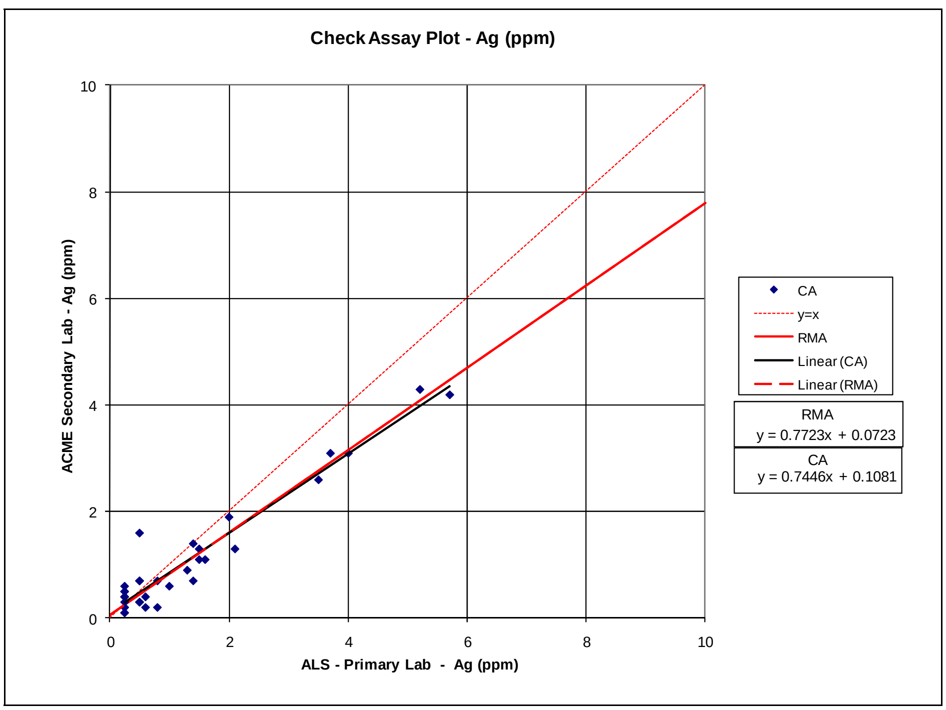


Table 13-5: Comparison of ALS – ALS Check Assay Results

	No of Samples	Samples Removed	ALS Chemex		ALS Chemex		
			Ave	SD	Ave	SD	Bias
Mo ppm	318	0	598	603	573	575	3.26%
Pb ppm	272	3	199	270	214	294	8.90%
Ag ppm	275	0	4.68	7.48	4.78	7.37	1.40%

13.4.6 Accuracy Assessed Using ALS Chemex Check Assays

To assess ALS Chemex laboratory accuracy, particularly for Pb and Ag, Avanti resubmitted a second set of pulp samples to ALS Chemex for check assays. Even though the check assays are submitted to the primary laboratory, these are considered check assays because different analytical procedures were used than for the original analyses.

For the Mo check assays at ALS Chemex, a four-acid, near total digestion method was used followed by the AA61 analytical technique. For the Ag check assays, the ME-MS61 method used a four acid "near total" digestion, with both ICP-MS and ICP-AES analysis. For the Pb check assays, an aqua regia digestion method was used followed by an AA45 analytical technique.

To ensure blind analyses, the original pulps were re-packaged and re-numbered at Acme before submission to ALS Chemex. The samples included the three Mo CRMs as well as three additional CRMs to test for accuracy for Pb and Ag at low, medium, and high grades. Blanks and duplicates were also included. A list of the summary statistics of the CRM results is shown in Table 13-6.

Table 13-6: Comparison of ALS and ACME Check Assay CRM Results

		Certified Values			Results			
CRM	Element	Mean	St Dev	95% Conf Interval	Mean	No of CRMs	Standard Deviation	Relative Bias
AV-1	Mo %	0.059	0.008		0.057	16	0.002	-4.0%
AV-2	Mo %	0.115	0.01		0.111	15	0.006	-3.6%
AV-3	Mo %	0.176	0.016		0.170	16	0.008	-3.6%
GBM 305-6	Ag (ppm)	1.5	0.4	0.1	1.5	24	0.124	1.4%
GBM 399-6	Ag (ppm)	15.5	1.1	0.3	15.8	25	0.833	1.9%
GBM903-5	Ag (ppm)	3.2	0.3	0.1	3.3	25	0.016	2.7%
GBM 305-6	Pb (ppm)	69	7	1.9	76	25	1.827	9.0%
GBM 399-6	Pb (ppm)	1,446	57	15.3	1,474	25	38.819	2.0%
GBM903-5	Pb (ppm)	252	17	3.1	260	25	7.541	3.1%

Figure 13-7 plots the CRM AV-1 results against the certified value during the check assay program. Although the results indicate a slight negative bias, the check assays are considered under control. The other two Mo CRMs provided a similar result. The results of the Ag CRMs show the ALS Chemex silver assays to be under control.

Figure 13-7: Performance of CRM AV-1 at ALS AA61 for Mo

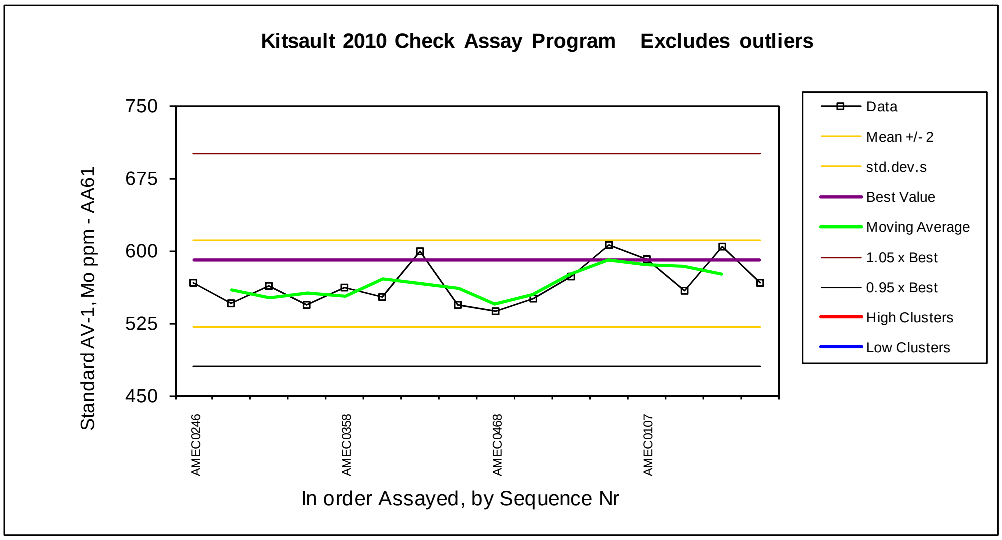
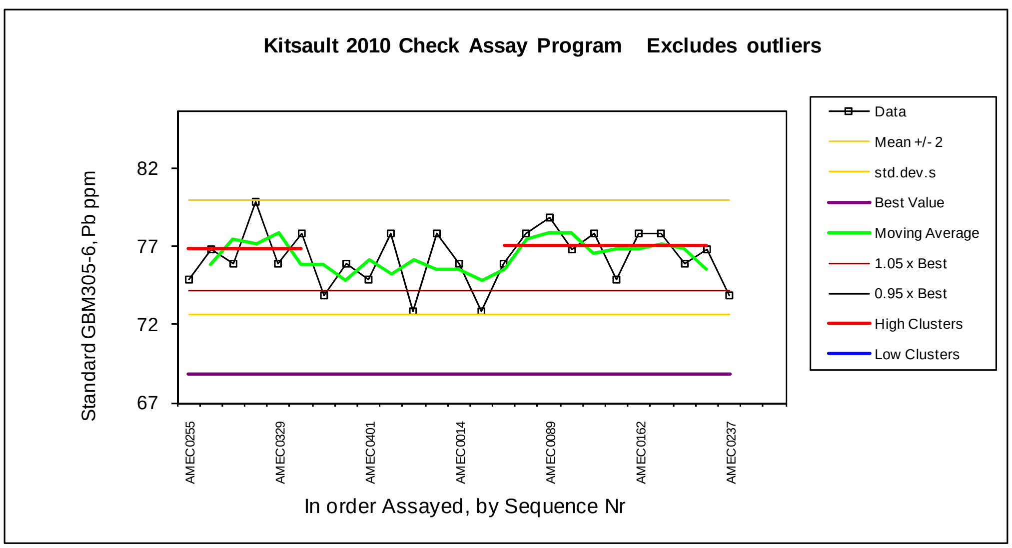


Figure 13-8 plots the Pb assay values against the certified value. The chart indicates an out of control high bias for the low grade Pb values. The other two CRMs both have positive bias but are below 5%.

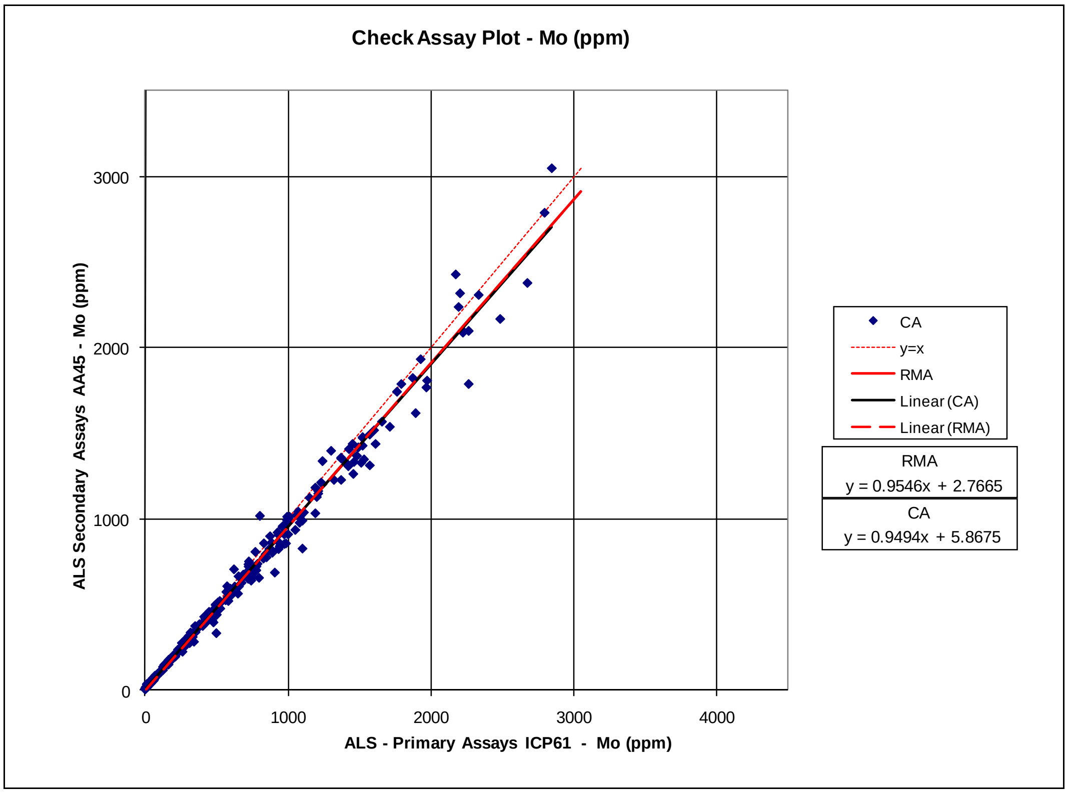
Figure 13-8: Performance of CRM GBM305-6 at ALS AA45 for Pb



The duplicate and blank control samples showed that the precision and accuracy of the preparation and analytical techniques are under control. The out of control bias for the low grade Pb CRM, GBM305-6 is not reflected in performance of the blanks and duplicates and is not considered significant.

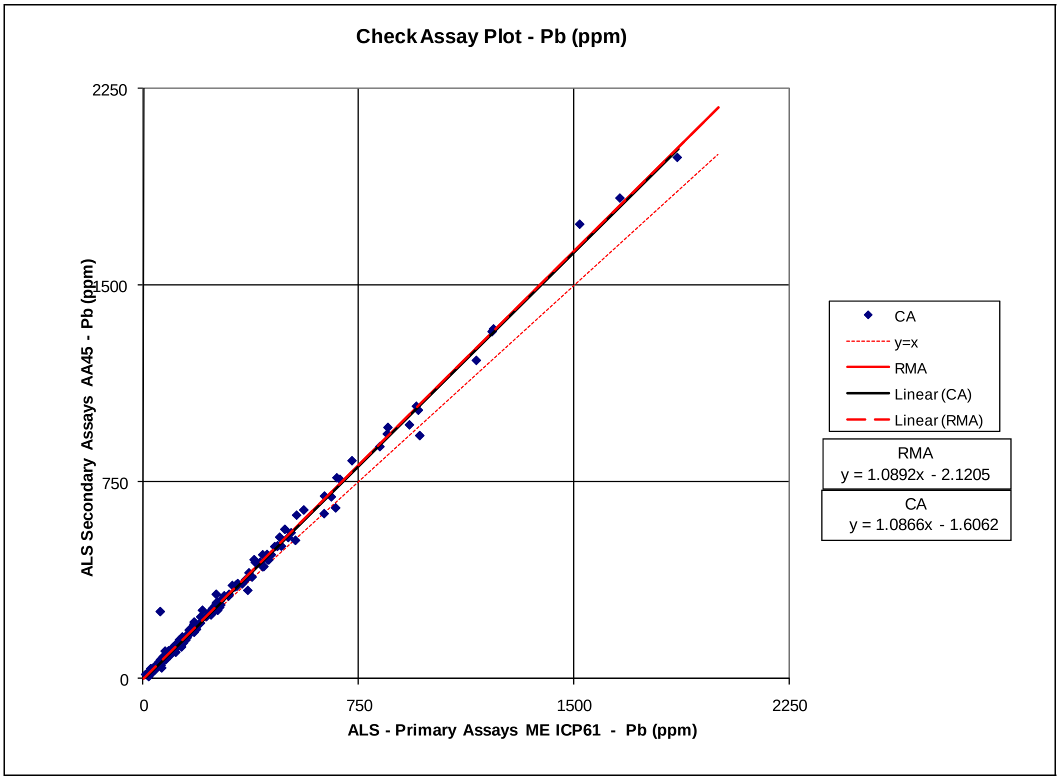
The RMA plot for Mo in Figure 13-9 indicates that Mo assays have a bias of less than 5% which is not considered to be significant as it is within the analytical precision of the assay methods used. Ag has a similar trend.

Figure 13-9: Performance of ALS AA45 Check Assays for Mo



For the Pb results, AMEC removed two high grade duplicate pairs from the data set, and one duplicate pair where it believed a sample mix up occurred. The resultant RMA plot (Figure 13-10) indicates a bias of 8.9% when compared to the original assays. Combined with the positive bias that is indicated by the performance of the CRMs, this bias is not considered to be significant enough to warrant an adjustment for Pb, but care should be taken in future drill assay programs, to include CRM material suitable to measure the accuracy and precision for Pb. The Pb grade is not considered an economic contributor to the resource estimate, but may be important to mineral processing.

Figure 13-10: Performance of ALS AA45 Check Assays for Pb



13.5 Databases

All date in the field is recorded in written form in field books, log books, sample sheets, logging forms or shipping forms. Various phases of record keeping are repeated in the subsequent step to confirm recorded values or numbers. Data from third parties such as laboratories or survey contractors are generally supplied in digital and printed form. These records are printed out and kept in binders for reference during data verification.

Errors in data entry picked up during the verification stage can be confirmed and corrected from filed data.

13.6 Sample Security

Sample security at the Project during the Avanti drilling programs relied upon the remote nature of the site, the fact that the samples were always attended or locked at the sample dispatch facility. Sample collection and transportation have always been undertaken by company or laboratory personnel using company vehicles.

For the Avanti drilling programs, core was collected by the drilling company and dispatched to the core logging and sample preparation facility in Terrace, BC. After logging, core was marked for cutting, sampled, bagged in tamper-proof bags and transported by Avanti personnel in company trucks to the sampling preparation facility in Terrace BC, with accompanying sample submission sheets.

Chain of custody procedures consisted of filling out sample submittal forms that were sent to the laboratory with sample shipments to make certain that all samples were received by the laboratory. ALS Chemex checked the samples received against sample submission forms, and checked for any evidence of tampering.

13.7 Sample Storage

Drill core and pulp storage is discussed in Section 11.3.2.

13.8 Comment on Section 13

The sampling methods and sampling preparation of pre-Avanti and Avanti programs are suitable to support resource estimation for this style of mineralization.

Based on AMEC's knowledge of the analytical methods used, and the QA/QC program conducted during the pre-Avanti drilling, AMEC concludes that the pre-Avanti drilling assay results for Mo are considered suitable for use in resource estimation.

Based on the QA/QC checks for the Avanti drilling, AMEC concludes that the results of the QA/QC indicate that the ALS analytical results for Mo are suitable for use in resource estimation.

14.0 DATA VERIFICATION

Two previous independent data checks have been performed by SRK Consulting Ltd (SRK) in support of preliminary assessment and pre-feasibility studies on the Project.

AMEC performed an independent verification of the data and database to support mineral resources estimated in 2010.

14.1 Verification

AMEC performed quality control checks and data verification procedures on the database that consists of pre-Avanti and Avanti drilling. The pre-Avanti drilling database originates from an older database that was recovered from the taped archives located at Mintec offices in Tucson, Arizona. The pre-Avanti data-set was used for previous reserve statements, submitted to the US Securities and Exchange Commission (SEC) by Amax Inc. for the period 1980 through 1985. The Avanti drilling dataset was generated to capture the data from the 2008–2010 drilling campaigns and is available in CSV format.

AMEC normally completes a 5% data entry error check as a means of assessing the reliability of a mineral resource database. During the data entry verification check, the data values in the source documentation are checked against the corresponding records in the resource database. AMEC also checks the reasonableness and for extremes of the recorded database values.

In addition to these typical verification procedures, AMEC also collected testimonials from former employees of CMC to help support the confidence in the reliability of the pre-Avanti drill hole results.

14.1.1 Pre-Avanti Drilling

Most of the original source documentation of the pre-Avanti drilling was destroyed when the mine was rehabilitated in 2007. AMEC was granted access by Rio Tinto, the owner of the Kennco Exploration Company records, which covered activities by Kennco during the period 1959 to 1967. The records were inspected by AMEC staff at the Rio Tinto offices in Vancouver in June 2010. For holes drilled after 1967, source documentation consisted of hand written copies of collar information and down-hole survey information, with the exception of the drill collar surveys for holes drilled in 1976 and 1978. These data were accompanied by an Amax memo, with the same data set tabulated for input into MineSight. AMEC also located copies of drill core log sheets with annotated MoS_2 values for the 1980 to 1982 drilling.

Collar Coordinate Check

AMEC checked the collar in the database against available source documentation for 125 drill holes. All the pre-Avanti drill collar coordinates had been converted from a local mine grid to the NAD 83 Zone 9 coordinate system. AMEC found an error in the conversion factor and the collar coordinates were correctly converted to the NAD 83 Zone 9 coordinate system using the correct factor.

Drill hole collars plots prepared by AMEC using the archived database records compared well with original sections and plans.

After a correction, the collar coordinate database was deemed to be sufficiently error free to support mineral resource estimation.

Drill Hole Collar Elevation Check

Drill hole collar elevations reported in the database were compared to the elevation at the drill hole collar location on a current topography surface. The topographic surface is based on a LIDAR survey that was completed in May 2009. The large majority of the pre-Avanti drill hole collar elevations did not match the topography due to excavation and earth moving activities that post-date the drilling activity, so no meaningful conclusion could be made.

Down Hole Orientation Checks

The down-hole survey data for pre-Avanti drill holes was retrieved from the archived MineSight® project. Comparison of this data with available original records showed inconsistencies. AMEC re-entered the available original recorded results and visually compared resulting drill hole trajectories with drill hole trajectories using archived database records. No significant differences were noted. The final down-hole database is a combination of the archived MineSight® records and records re-entered from original records.

AMEC checked the magnetic declinations that were applied to the down hole surveys that relied on a magnetic measurement down-hole survey instrument and found them to be acceptable for the pre-Avanti drilling campaigns.

AMEC checked the drill hole trajectories for excessive deviation using an AMEC software program that calculates deviation between consecutive down-hole survey measurements and compares to an allowable tolerance set by the QP. Three holes with large deviation were found. These results are not considered material to the resource estimate due to the style of a large, disseminated porphyry mineralized system. The down-hole survey records are considered suitable to support mineral resource estimation.

Assay Data Checks

AMEC checked the assay values in the database against the graphical logs, printed log sheets and composited values on log sheets for the KEL drill holes between 1959 and 1969. Two assay data entry errors were found. Two entries were switched, and five composite values had differences within 0.003% Mo; the frequency of errors is not considered material to the estimate.

AMEC used data entry checks on 5% of the available original assay values records for the 1981 and 1982 drilling. The measured error rate of 0.74% is considered acceptable for supporting resource estimation.

14.1.2 Avanti Drilling

Collar Coordinate Checks

All of the collar coordinates of the data base were checked against the original collar survey certificates. No errors were noted and the data is considered suitably error free.

Drill Hole Collar Elevation Checks

AMEC compared the position of the 2008 drill-hole collars (33 drill holes) to the Lidar topographic survey. Four drill holes (K08-09, K08-28, K0819 and K08-15) have elevation differences of more than 5 m (half the current bench height) with K08-09 indicating the largest difference of 6.51 m. The average of the deviation is 2.41 m, which is considered acceptable for resource estimation for this style of deposit.

Down Hole Orientation Checks

AMEC performed a data entry check on 15 randomly selected down-hole survey records, representing 6% of all the down-hole survey records, and found them to be error free. The magnetic declination used by Avanti for all of their down-hole surveys was checked against the Geological Survey of Canada's magnetic declination for the area and was found to be correct. AMEC checked for excessive down-hole deviation and found all the drill hole deviations to be reasonable.

Assay Data Checks

AMEC performed a data entry check on 168 of the assay intervals, representing 5% of the values, inclusive of the re-assays for Mo, Ag, and Pb. A single error was detected for Mo values resulting in an error rate of 0.6% for Mo, which is acceptable for resource estimation. The Pb and Ag assay values checked are error free and considered suitable to be used for resource estimation.

14.2 Comment on Section 14

The process of data verification for the Project has been performed by external consultancies, primarily in support of development studies and technical reports.

Based on the data validation checks, the QPs conclude that the collar coordinates, down-hole surveys and assays are sufficiently free of errors and are suitable to be used for mineral resource estimation.

15.0 ADJACENT PROPERTIES

There are no adjacent properties at a similar stage of development as the Project.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 Metallurgical Testwork

Over the project history, a number of metallurgical testwork campaigns have been undertaken. These are summarized in Table 16-1.

In its two operating periods from 1967 to 1972 and 1981 to 1982, the Kitsault concentrator processed approximately 13.4 Mt of mineable ore for the production of approximately 30 million pounds of Mo. After closure in 1982, the Kitsault concentrator was completely disassembled, salvaged, and sold.

16.1.1 Testwork Samples

Sample selection for the 2008–2009 testwork was based on the three major rock types:

- Quartz monzonite (55%)
- Diorite (25%)
- Hornfels (20%).

The grade of an individual sample used for preparing the rock type in the composite had to meet or exceed a 0.036% Mo cut-off grade.

Four composites were created for the flotation testwork in 2010, one for each of the major ore types—quartz monzonite, hornfels, diorite—and a master composite (55% quartz monzonite, 25% diorite, 20% hornfels), which was held in reserve and is planned to be used for future optimization work.

16.1.2 2009 Metallurgical Program

The 2009 testwork program was designed to further the understanding of the treatment characteristics of the Kitsault ore, to confirm a process flowsheet that would produce a marketable grade molybdenite concentrate, and to develop design criteria for the prefeasibility study. The work was undertaken on samples from the 2008 drilling program, based on three major rock types expected to be encountered over the life of the mine: quartz monzonite (55%), diorite (25%), and hornfels (20%). The following testwork was performed:

- Grindability studies at the Hazen laboratory in Colorado, USA
- Flowsheet development studies by SGS Vancouver in B.C., Canada.

Table 16-1: Metallurgical Testwork Summary Table

Year	Laboratory	Testwork Performed
1962 to 1963	Lakefield Research	Mineralogy, flotation and grindability tests
1963 to 1964	Canadian Department of Mines and Technical Surveys	Mineralogy
1964	Britton Engineers, Vancouver, BC,	Open cycle rougher flotation recovery and grindability tests, cleaning tests, specific gravity determinations, reagent and flocculant testing
1964	Western Mining Division Research Department of Kennecott Copper Corporation	Independent amenability tests
1967 to 1974	BC Molybdenum	Plant operation
1978	Allis-Chalmers	Grindability tests
1978 to 1982	Amax Metallurgical Laboratory, Golden, Colorado	Metallurgical testwork: Optimization of reagent consumptions, recovery of silver, tungsten, lead and heavy metals as by-products, removal of lead from the molybdenum concentrate, and removal of soluble lead, zinc, cadmium and heavy metals from the concentrator tailings. Addition of a hot acid lead leach circuit was recommended and implemented in late 1981.
1981 to 1982	AMAX	Plant operation. Studies indicated the possibility of by-product recovery of tungsten, lead, and silver, but due to space constraints in the mill building, this was not undertaken
1983	SGS Lakefield, Canada	Pilot plant operation to develop a flowsheet and reagent scheme what would produce an acceptable molybdenite concentrate grade and recovery.
2008 to 2010	SGS Vancouver, Canada	Flotation process optimization tests
2008 to 2010	Hazen Research, Colorado, USA	Grindability evaluation testwork
2008 to 2010	RDi, Colorado, USA	Flowsheet development
2009 to 2010	Contract Support Services Inc., Red Bluff, California	Project data review
2010	SGS Lakefield	Spatial comminution tests

In addition, a testwork program was undertaken by RDi in Colorado to refine process design criteria after the pre-feasibility study to be used to direct the 2010 testwork program.

The grindability work performed in 2009 showed that the diorite and the quartz monzonite were moderately hard while the hornfels could be considered very hard. Modelling of this work showed that while a semi-autogenous mill would work in this application, a pebble crusher would be necessary to handle the critical-size material generated from the ore.

Preliminary grindability work showed that the diorite and the quartz monzonite were moderately hard while the hornfels could be considered very hard. Modelling of this work showed that while a semi-autogenous mill was would work in this application, a pebble crusher would be necessary to handle the critical size generated from the mineralized material.

The flotation work demonstrated that good rougher recoveries could be obtained using a diesel fuel collector for the molybdenite while employing Nokes' reagent to suppress the flotation of lead into the final concentrate.

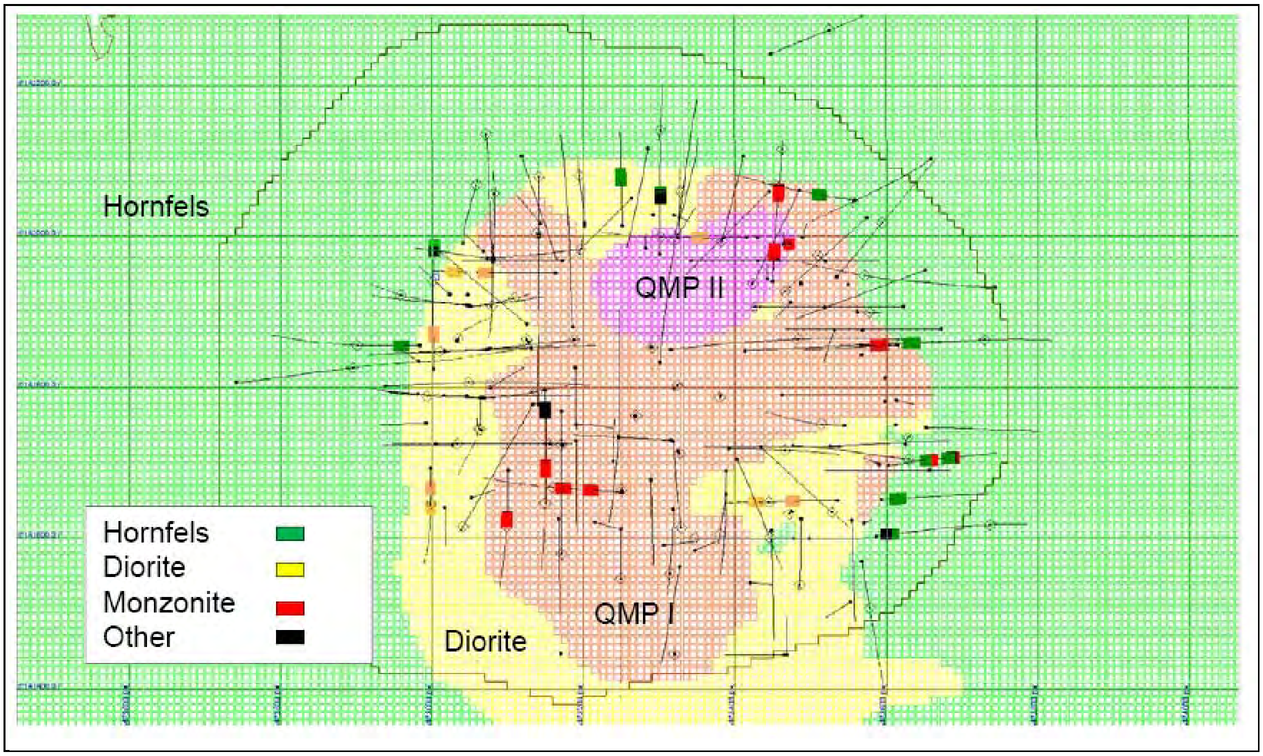
A wide variety of batch tests were performed, including grind /recovery, rougher kinetics, first cleaner flotation, regrind, and open-cycle flotation tests, to show ore response to these factors and to generate flotation criteria for the locked-cycle and a standard recipe for the variability tests.

The resulting two locked-cycle tests did not yield a combination of good recovery and high concentrate grade due to difficulties with how the laboratory testwork was performed. Analysis of this work and the open cleaner and regrind testwork emphasize the requirement that mass pulls and regrind sizes need to be tightly controlled in the cleaning circuit to achieve the target concentrate grades and recovery levels.

Rougher flotation tests, using a standard test protocol, were performed on a number of discrete samples selected from a variety of locations in the deposit. The results of this variability work showed that typically rougher recovery response was good throughout the deposit. At a feed grade of approximately 0.11% Mo and an average primary grind of 80% passing size (P_{80}) of 266 µm, a rougher recovery of 93.3% could be achieved. It should be noted that because a constant grinding time was employed, a wide range of sizes was produced and it was shown that although, as expected, the grind size affected the results, the recovery was quite good over the entire range.

Figure 16-1 indicates the locations of the 2009 variability samples within the pit shell developed in the 2010 feasibility study. The selection of the samples took into account that the deposit is annular and the need for the samples to represent a wide distribution within the deposit.

Figure 16-1: Distribution of Samples Used for 2009 Variability Work



Note: Geology and pit outline illustrated on this plan is at the 435 m elevation.

16.2 2010 Metallurgical Program

The primary objectives of the 2010 testwork were to confirm the process flowsheet developed in 2009, to optimize conditions for the production of a marketable-grade molybdenite concentrate, and to develop design criteria for the feasibility study.

The following testwork was performed:

- Grindability studies at SGS-Lakefield
- Flowsheet development by RDi in Colorado, USA
- Flowsheet development studies by SGS Vancouver in B.C., Canada.

For this 2010 work, comminution testing was undertaken on distinct samples from each of the three major rock types. Selection of the samples within the deposit was chosen to reflect the weighting of the ore types, and a wide distribution across the deposit which was biased to emphasize early year production, which is an important factor. In total, a further 15 SMC SAG-mill grindability tests, seven Bond rod mill work index (RWi), and 30 Bond ball mill work index (BWi) tests were performed and added to the database. The quartz monzonite, the softest material, was found to have the least variance, while both the diorite and hornfels had a moderate degree of variance with regard to both SAG and ball milling characteristics.

In the design of the grinding circuit, the 85th percentile of all the ore hardness samples taken was used for determining the SAG and ball milling characteristics. This selection of conditions was to ensure that the grinding power arrived at would allow for the achievement of the nominal tonnage for mixtures of the ore which would include even higher levels of the hornsfels than typically expected. This was verified using the ore delivery schedule provided by the 2010 feasibility study.

The SGS Vancouver flowsheet development studies conducted in 2010 included a variety of work including confirmation testing to select the particular grind size used for the design criteria, and on locked-cycle testwork on the three ore types. Six tests, two for each of the main rock types, were conducted (all at approximately a P80 of 200 µm), all of which had difficulty achieving the expected combination of high recovery and high concentrate grade. The results are shown in Table 16-2. Problems in achieving the performance desired were determined by subsequent analysis and review, to be related to problems in controlling regrind size, reagent addition, and reagent control. These problems led to lower selectivity and unstable circulating loads at the laboratory scale. The shortfall in results was thus attributed to procedural problems rather than being metallurgical in nature.

Also, although LCT-4 did not give the expected results, it was performed to the correct procedures and regrind levels. When the analysis of the test streams was performed these showed that if cleaning was done only to the 4th stage, both recovery and concentrate molybdenum grade would be achieved. In operations, performing this diversion of material to final product would be simple to accomplish. Rather than a recovery of 85.2% Mo and a concentrate grade at 56.1% Mo, a recovery of 92.6% would have occurred while still maintaining a concentrate grade over 54.9%.

Table 16-2: Results of Locked-Cycle Testwork on Three Composites

		Mo			Concentrate	
Test	Ore Type	% Rec	% Bulk Tails	% Clnr-Scav Tails	% Mo	% Pb
LCT-1	Diorite	92.3	5.8	1.9	41.6	0.15
LCT-4	Diorite	85.2	10.8	4.0	56.1	0.11
LCT-2	Hornfels	90.5	7.2	2.3	32.4	0.12
LCT-5	Hornfels	87.9	8.4	3.7	41.5	0.11
LCT-3	Quartz–Monzonite	93.6	4.7	1.7	35.3	0.12
LCT-6	Quartz–-Monzonite	88.3	8.4	3.3	48.5	0.14

Difficulties with these locked cycle tests indicate there is the potential for performance risk in achieving the recovery and final concentrate grade targets. As a result, as noted previously, these tests were examined to determine the problems. Good rougher recovery was typically seen in all the composites. There were, however, difficulties in producing the combination of acceptable concentrate grade and overall recovery.

Forensics of the locked-cycle tests which had difficulties showed that the laboratory had not achieved good circuit control in cleaning with respect to reagent additions, regrind level, froth pull, and pH control. Although the results were not optimal in confirming circuit performance, there was no indication of serious problems in the metallurgical characteristics of the material. Proper control should be possible with the use of particle size and on-stream analyzers in the cleaning circuit and would alleviate the risk in achieving concentrate grade. The past operational history of the Project, successful batch testwork and understanding the problems encountered in the locked cycle testwork does support the proposition that a commercial concentrate with good molybdenite recovery and grade can be produced, but more testwork will be needed in this area.

One particular benefit of the 2010 locked cycle testwork was the success in controlling the deportment of lead to the molybdenum concentrate. The lead level of the concentrate from the 2010 work was 0.15% or less, unlike that from the 2009 tests where the lead was allowed to get out of control due to poor reagent control. The difference is attributed to the use of sodium dithiophosphate as a lead depressant in the rougher and scavenger stages. The lead level, however, is still greater than 0.10% Pb in all cases indicating the need to have a leaching circuit to bring these levels down to non-penalty levels. Table 16-3 summarizes the most important assays within the concentrate.

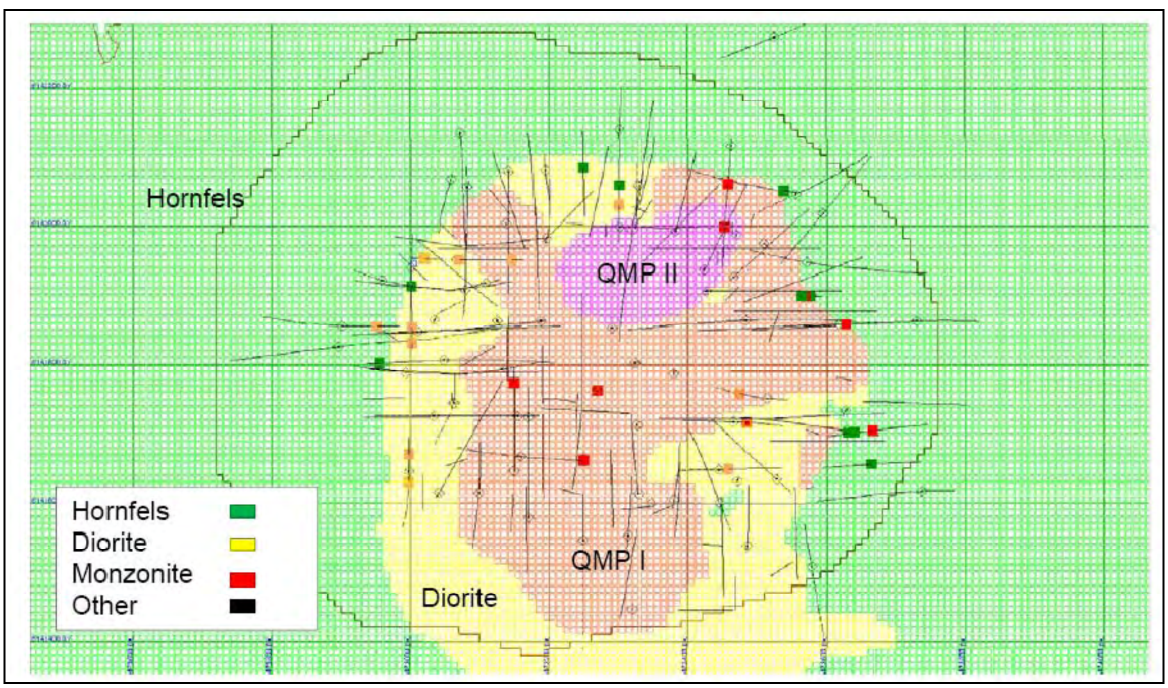
Table 16-3: Concentrate Quality – Locked-Cycle Testwork

Test	Ore Type	% Mo	% Pb	ppm Ag	% Bi
LCT-1	Diorite	41.6	0.15	26.4	0.010
LCT-4	Diorite	56.1	0.11	18.1	0.006
LCT-2	Hornfels	32.4	0.12	33.6	0.006
LCT-5	Hornfels	41.5	0.11	48.7	0.007
LCT-3	Quartz-Monzonite	35.3	0.12	24.3	0.010
LCT-6	Quartz-Monzonite	48.5	0.14	26.8	0.012

The execution problems with the locked-cycle testwork limited the ability to perform leaching tests due to the quantity and quality of leach feed available. Three simple tests were performed, all with hydrochloric acid, one at ambient and two at elevated temperatures (80°C). The first two tests were done at a coarse grind while the material for the last test underwent regrinding. Due to the limitations with this testwork and their preliminary nature, it was decided to rely on the extensive work done during the history of plant operations as a guide to designing the leach circuit. In addition, it is recommended that further work be conducted to allow for the proper optimization of that part of the design and to confirm performance.

As in 2009, more variability tests were run. These tests used a standard reagent formula of 180 g/t of diesel oil, 80 g/t of Nokes' reagent, and MIBC with grinds averaging a 200 µm grind size. The data produced from these tests suggest that the variability in response was due more to fineness of grind than to the varying feed grades. Despite the attempt to target a grind size, the samples still showed a wide range of P_{80} values. Where the grind was approximately 200 µm or coarser, better flotation characteristics and results were indicated in comparison to the finer grind. Good recoveries were achieved at a 4% to 6% mass pull for the coarser material. Taken together with the 2009 testwork, which was done at a still coarser size, a P_{80} of 230 µm is considered to be a good target for the flotation feed. Figure 16-2 indicates the distribution of the 2009 samples within the 2010 pit shell. The samples were selected to reflect the earlier years of production while still maintaining a good spatial distribution.

Figure 16-2: Distribution of Samples Used for 2010 Variability Work



Note: geology and pit outline illustrated on this plan is at the 435 m elevation.

16.2.1 Recovery Models

The recovery model used for the mine model utilizes a response curve which was benchmarked against performance of a major molybdenum mine in the United States. This curve was adjusted in order to reflect the results of the 2009 variability work done at a P_{80} grind of 266 µm, which looked at rougher recovery, and also to provide a deduction for cleaning performance. The resulting model used in the pit optimization was:

Recovery (%) = 7.5808 * ln (Feed Grade %) + 108.63 (Equation 1)

Later variability work performed on the samples produced in 2010 showed that those tests done at a P_{80} grind of 203 µm would provide a rougher recovery indicated by:

Recovery (%) = 20.93*(Feed Grade %) + 91.01 (Equation 2)

This is demonstrated in Figure 16-3. Figure 16-4 is included to further detail the response seen for the 2010 variability testwork.

Figure 16-3: Recovery vs. Feed Grade – Samples with Coarser Grinds

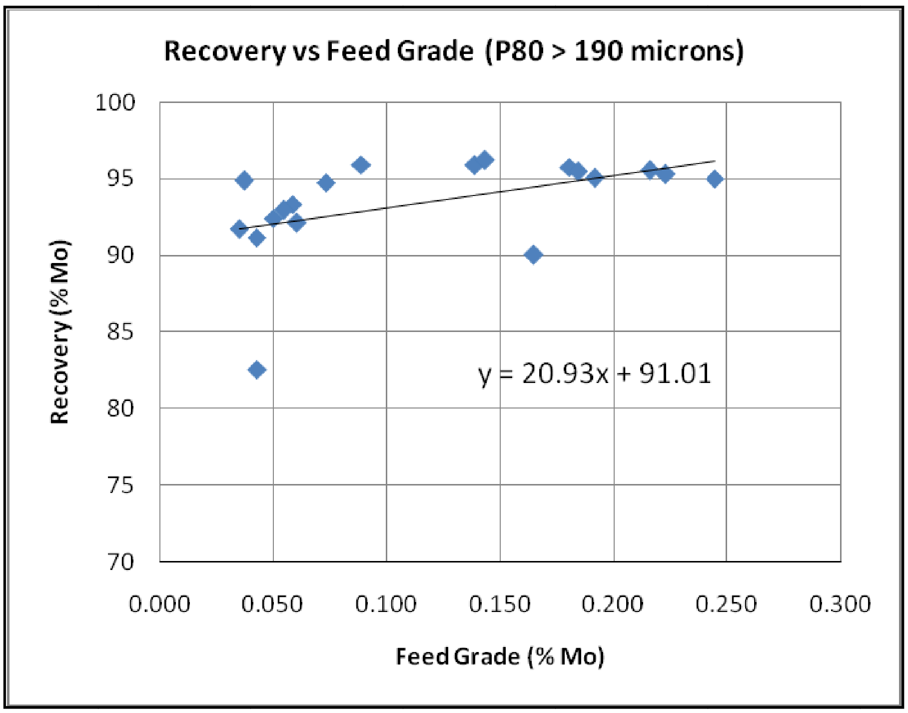
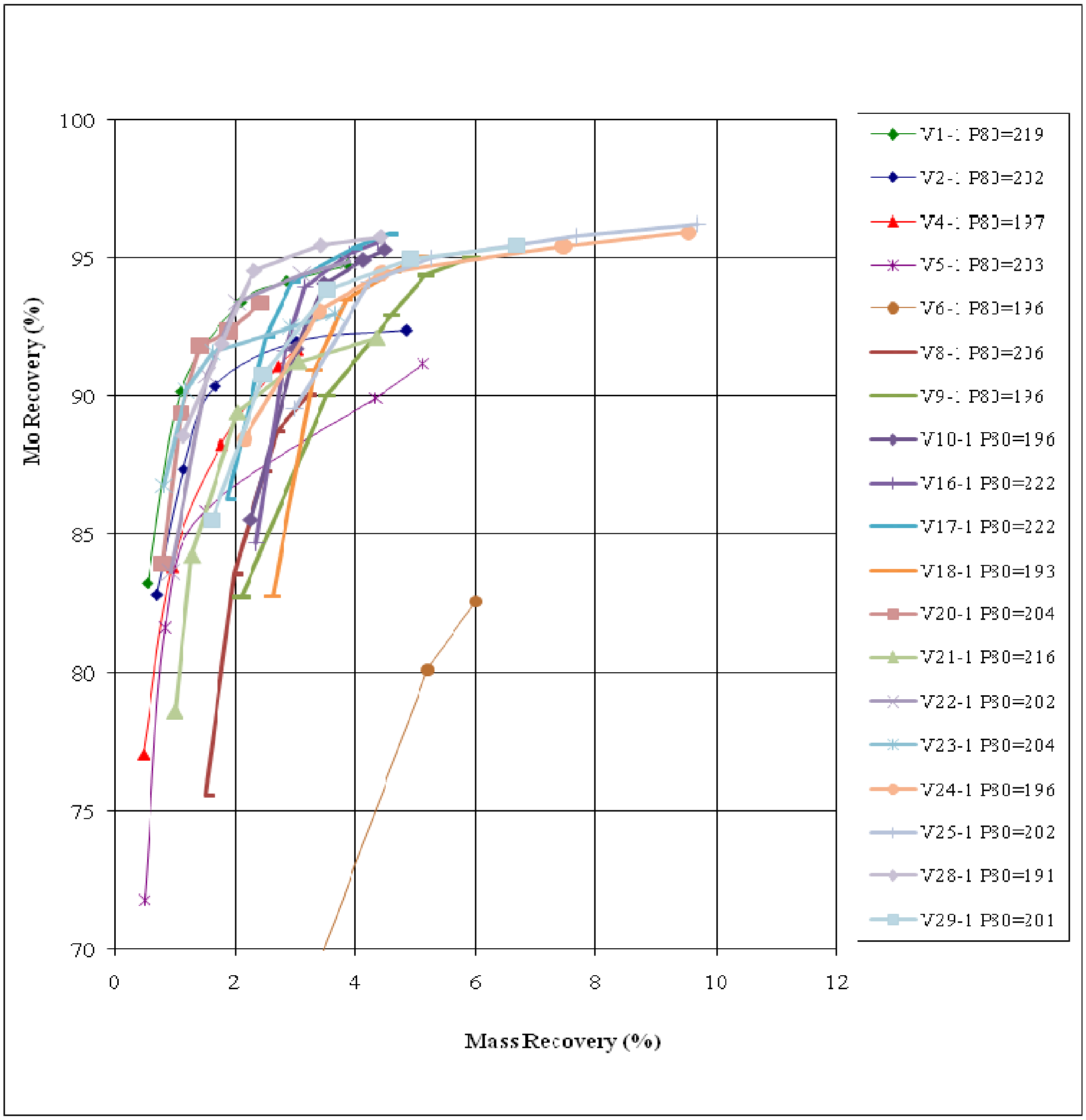


Figure 16-4: Variability Testing – Mass Pull of Coarse Grinds (P_{80}>190 µm)



Because Equation 2 is a rougher recovery relationship only, this was converted to a final grade recovery using a deduction of 2.5% for cleaning and to deal with the finer grind size. This results in the formula:

Recovery (%) = 20.93*(Feed Grade %) + 88.51 (Equation 3)

This recovery formula provides similar results to that produced from Equation 1 and felt to support the proposition that Equation 1 would be a reasonable feed grade recovery equation to use in the mine modelling.

In addition to the variability work, LCT-4 also provides an indication that Equation 1 is a reasonable contribution to the mine model. Limited to four cleaning stages, this test produced a 92.6% overall recovery at a 54.9% Mo concentrate grade with a feed grade of 0.084% Mo. These results were better than what would have been indicated by Equation 1 (used for the model) and Equation 3 (supporting the model).

16.2.2 Conclusions

The present design of the Kitsault process plant is based on plant data obtained from previous operating periods as well as more recent testwork campaigns on samples of quartz monzonite, diorite, and hornfels. These samples originate from the area designated as potential plant feed material, indicated in the mine plan to have an ore feed grade of approximately 0.09% Mo.

The testwork performed in 2010 generally supported the work completed in 2009. The level of comminution testwork and the selection of a power target (the 85^{th} percentile of all sample hardness) consistent with the level of the work push the design of the comminution circuit to an appropriate level of confidence. Although grind/ recovery work and rougher kinetics showed consistently good performance for bulk flotation, difficulties were encountered in the performance of the locked-cycle and concentrate leaching tests. Although the difficulties were explainable, further locked-cycle flotation tests need to be performed to demonstrate the level of confidence in flotation performance. In addition, further work is necessary to determine the parameters of the leaching circuit on a characteristic concentrate to be produced by the locked cycle testwork. The alternative is to provide a conservative leaching circuit which, although not optimal in terms of capital, would only have a minor impact on capital.

Past production and current testwork results have shown that saleable molybdenum flotation concentrates can be produced by the use of conventional comminution and flotation processes. In the current flowsheet, the plant feed is crushed and milled, then subjected to flotation, and the resulting concentrate is leached to remove the lead impurity. This will produce a high-grade, saleable molybdenum concentrate that meets roaster specifications. The final concentrate is expected to contain 52% Mo and <0.04% lead, for an overall LOM molybdenum recovery of 89.9%.

16.3 Proposed Process Plant

16.3.1 Plant Design

The process design is for a concentrator with a nominal processing capacity of 40,000 t/d of ore from an open pit. Process design criteria for the facilities are based on the following:

- Exploratory testwork conducted for Avanti by RDi of Denver, Colorado, on samples obtained during a 2008 drilling campaign
- Testwork supervised by AMEC Americas Inc. at SGS-Vancouver and SGS-Lakefield in 2010, using samples obtained during a 2008 drilling campaign
- Information available from historical testwork and production by CMC.

Where data were not available at the time of flowsheet development, AMEC developed criteria for the sizing and selection of equipment from reasonable assumptions, benchmarking, and the use of modern modelling and simulation techniques.

Key design criteria for the Kitsault process plant are listed in Table 16-4.

16.3.2 Process Description

The mineral processing plant is based on conventional technology and proven equipment. Figure 16-5 is a simplified diagram showing the major processing steps.

Run-of-mine (ROM) ore from the open pit will be crushed and conveyed to a stockpile. Ore will be withdrawn from the stockpile to feed a semi-autogenous grind (SAG) mill (12 MW). Discharge from the SAG mill will pass over a vibrating screen, which will separate out the coarse fraction for recycle to a pebble crusher for size reduction before being re-introduced into the SAG mill.

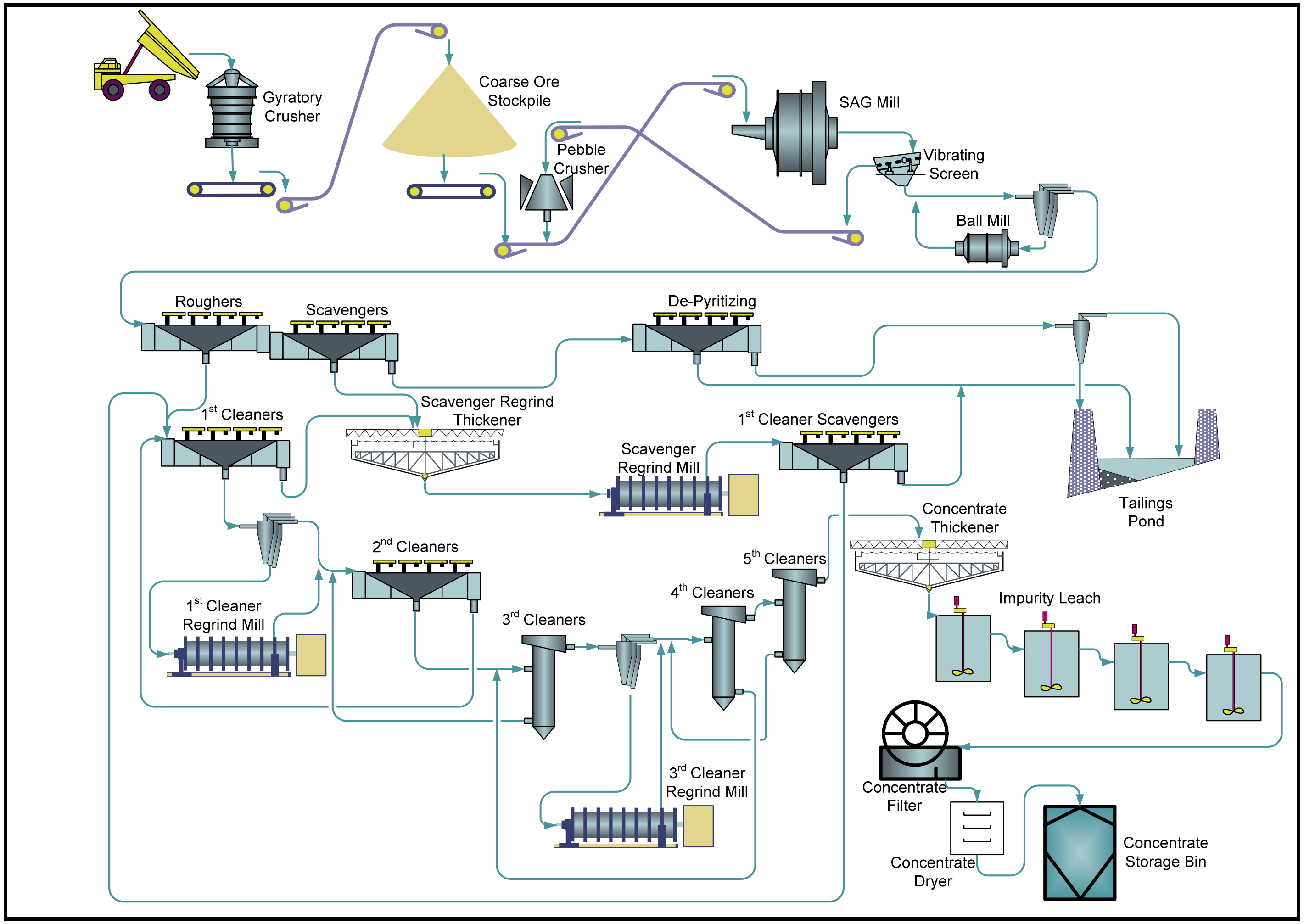
Undersize from the discharge screen will be pumped to a cyclone pack where coarse material will report to a ball mill (12 MW) for grinding to near liberation size. Cyclone overflow will report to the rougher–scavenger bulk flotation circuit (twelve 160 m^3 tank cells).

Molybdenite and some pyrite, along with significant entrained and locked non-sulphide gangue, will be recovered in rougher and scavenger flotation. The rougher concentrate will be sent to the 1st cleaners. The concentrate from that unit operation will be reground, while the 1st cleaner tails will join the scavenger concentrate at the scavenger regrind thickener.

Table 16-4: Key Process Design Criteria

Description	Unit	Value
Annual Throughput	t/a	14,600,000
Daily Throughput	t/d	40,000
Operating Days per year	d/a	365
Overall Concentrator Availability	%	92
Nominal Design Feed Grade Mo	%Mo	0.11
Plant Recovery		
Nominal Plant Mo Recovery	%	90
Mo Concentrate Target Grade	%	52
Primary Crushing	-	Gyratory
Crushing Work Index	kWh/t	14
Coarse Ore Live Storage	t	41,000
Grinding Circuit Configuration	-	SABC
SAG Mill Power	MW	12.00
SAG Mill - Ball Mill T_{80}	mm	4.31
Pebble Crushing Type	-	Cone
Ball Mill Power	MW	12.00
Ball Mill Circulating Load	%	257
Bond Ball Mill Work Index, 85th Percentile	kWh/t	14.3
Discharge Particle Size, P_{80}	µm	230
Rougher-Scavenger Flotation Residence Time	min	24
3 Stage Regrinding		
Regrind Work Index	kWh/t	14.5
Scavenger Regrind Circuit Product Size, P_{80}	µm	120
Cleaner Stage 1 Circuit Product Size, P_{80}	µm	50
Cleaner Stage 3 Circuit Product Size, P_{80}	µm	24
5 Stage Cleaning		
1st Cleaner Flotation Residence Time	min	7
1st Cleaner Scavenger Flotation Residence Time	min	7
2nd Cleaner Stage Flotation Residence Time	min	2
3rd Cleaner Flotation Residence Time	min	1.5
4th Cleaner Flotation Residence Time	min	1
5th Cleaner Flotation Residence Time	min	1
Concentrate Thickener Underflow Density	%wt solids	60
Impurity Leach Residence Time	hours	4
Concentrate Filter Cake Moisture	% moisture	12
Dried Concentrate Moisture	% moisture	5
Reagents		
AF56	gt/ ore feed	6
MIBC	g/t ore feed	6
Nokes Reagent	gt/ ore feed	85
Diesel	g/t ore feed	186
Lime	g/t ore feed	218
Xanthate	gt/ ore feed	0.05

Figure 16-5: Process Overview



The reground 1st cleaner concentrate is subsequently upgraded in one more mechanical and three column flotation steps, for a total of five cleaning steps, including a regrind of the 3rd cleaner concentrate, to produce a final concentrate.

Material thickened in the scavenger regrind thickener will be reground and then passed through the 1st cleaner scavenger cells, which send a concentrate to the feed of the 1st cleaners and the tailings product to the final sulphide tailings disposal box.

The tailings from the scavenger flotation will report to the de-pyritization circuit (four 160 m^3 tank cells). Reagents are added to produce a high pyrite material, which is combined with the tailings from the 1st cleaner scavengers at the final sulphide tailings box. The final sulphide material will be sent to the TMF, and will be disposed of sub-aqueously.

The tailings from the roughing stage of the de-pyritization flotation, now sulphide-depleted, will be sent to the tailings cyclones. The coarse sand generated by the cyclones will be used for dam construction, while the slimes will be disposed of within the main impoundment area. When not building dams, all tailings will be discharged into the tailings pond.

The final concentrate from the molybdenum cleaning circuit will be sent to the molybdenum thickener. After thickening, the material will be sent to the lead leaching circuit, where it will be treated with hydrochloric acid to ensure that the material meets customer specifications before being prepared for shipment. After leaching, the concentrate will be filtered, washed, re-filtered and then dried before being bagged for shipment.

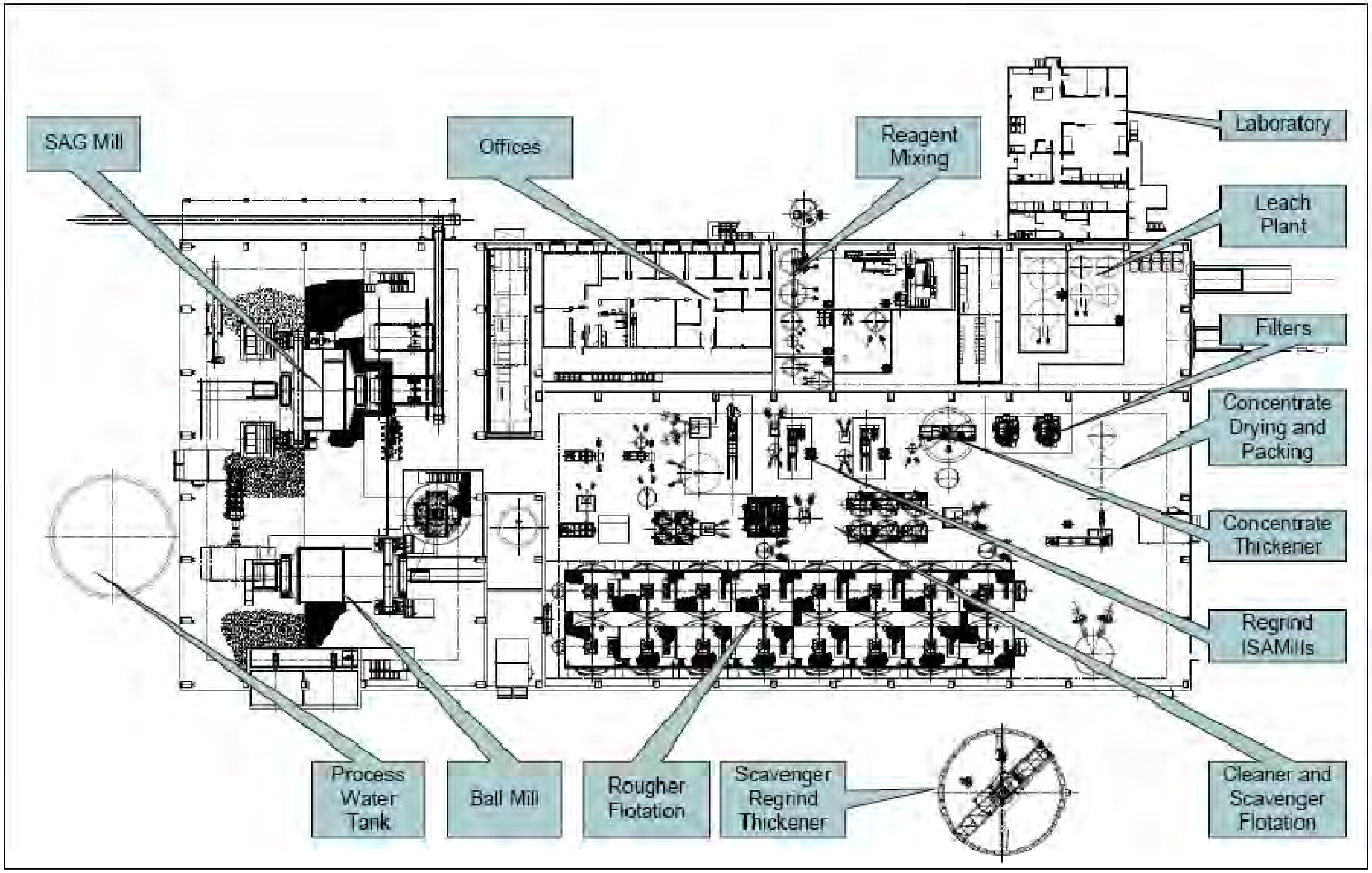
The general arrangement of the concentrator equipment is shown in Figure 16-6.

16.4 Tailings Management Facility

The tailings management facility (TMF) was designed to provide environmentally-secure storage for disposal of 233 Mt of tailings. Overall site capacity could reach 300 Mt with additional engineering and cost data should future expansion warrant. The TMF will include the following:

- South Embankment
- Northeast Embankment
- Seepage collection ditches and ponds
- Bulk tailings distribution system

Figure 16-6: Concentrator General Arrangement



- Bulk tailings beaches
- Bulk tailings feeder lines to on-crest cyclones
- Cleaner tailings distribution
- Cleaner tailings cell
- Reclaim water system
- Surplus water system
- Supernatant water pond.

The layout of the TMF is included as Figure 16-7.

The South Embankment will be constructed as an asphalt core rock-fill dam (ACRD) water-retaining starter embankment and raised as a zoned compacted cyclone sand rockfill dam. The Northeast Embankment will be constructed across the top of the Patsy Creek watershed as a geomembrane-faced rock-fill dam (GFRD) and raised as a compacted cyclone sand embankment. The embankments will be developed in stages throughout the life of the project using the centreline construction technique.

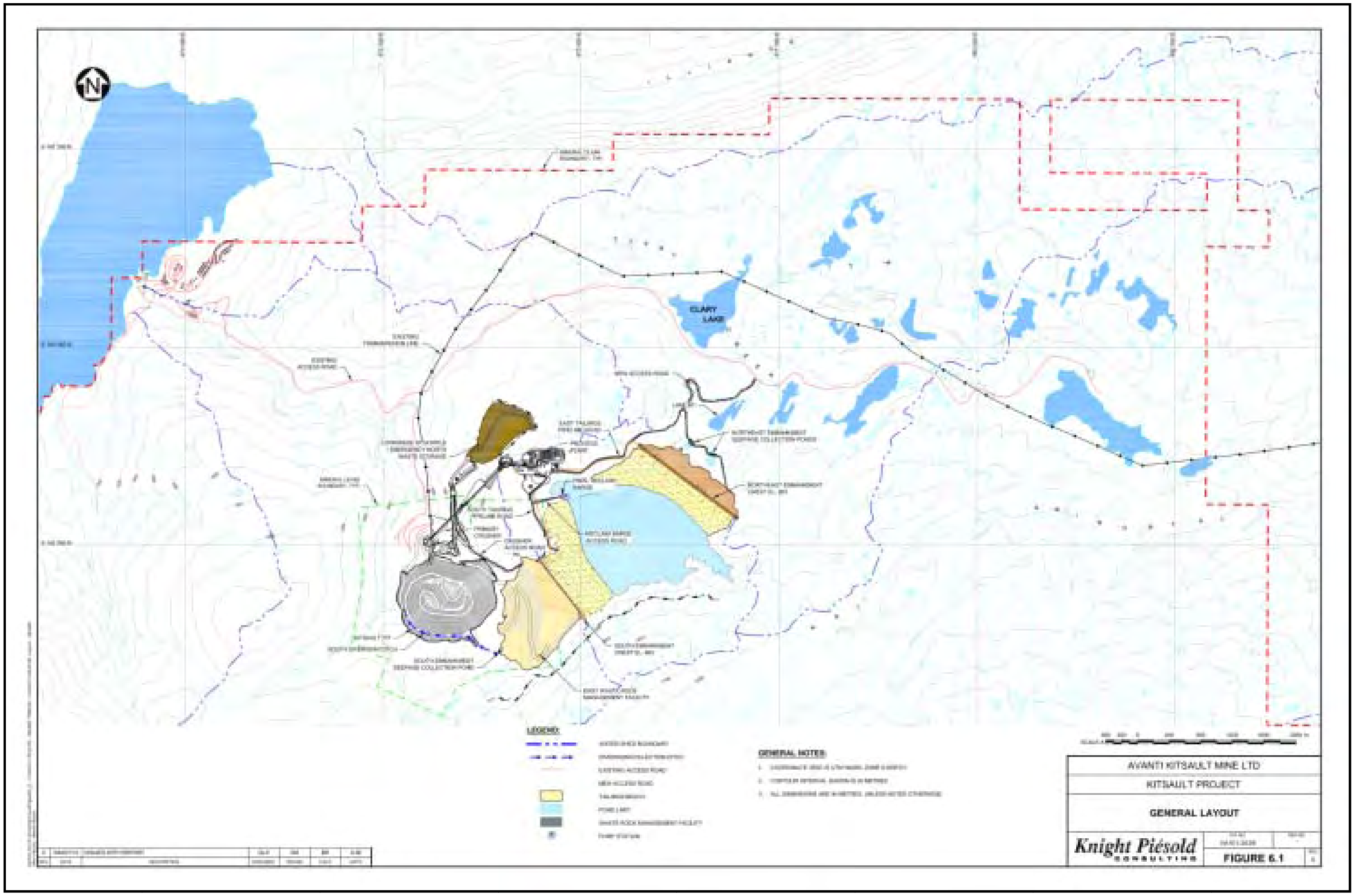
Multiple levels for seepage control have been included in the design to minimize seepage losses, including the development of extensive tailings beaches (thereby isolating the supernatant pond from the embankments), toe drains to reduce seepage gradients, and contingency measures for groundwater recovery and recycling.

A hazard classification was completed to determine design earthquakes and storm events for the TMF South and Northeast embankments. Selection of appropriate design criteria is based on those provided by the Canadian Dam Association (CDA) Dam Safety Guidelines (2007).

A review of historical earthquake records and regional tectonics indicates that the Kitsault Project site is situated in a region of low seismic hazard. To provide seismic ground motion parameters for the project site a probabilistic seismic hazard analysis has been carried out using the database of Natural Resources Canada (NRC); this confirmed that the area was one of low seismic hazard.

Water management components have been designed to maximize the diversion of clean water around the Project components, while ensuring the capture of contact water throughout the site.

Figure 16-7: General Layout of Tailings Management Facility



16.5 Comment on Section 16

In the opinion of the QPs, the metallurgical test work conducted to date supports the declaration of Mineral Resources and Mineral Reserves based on the following:

- The metallurgical testwork completed on the Project has been appropriate to establish a process route that is applicable to the mineralization types, and the process route proposed uses conventional technology
- Tests were performed on samples that were representative of the mineralization for the purposes of establishing an optimal conceptual process flowsheet
- The design of the Kitsault process plant is based on plant data obtained from previous operating periods as well as more recent testwork campaigns on samples of quartz monzonite, diorite, and hornfels. These samples originate from the area designated as potential plant feed material indicated in the mine plan to have an ore feed grade of approximately 0.09% Mo
- Past production and current testwork results have shown that saleable molybdenum flotation concentrates can be produced by the use of conventional comminution and flotation processes. The plant feed will be crushed and milled, then subjected to flotation. The resulting concentrate will be leached to remove the lead impurity, thereby producing a high-grade saleable molybdenum concentrate that meets smelter specifications. The final concentrate is expected to contain 52% Mo and <0.04% lead, for an overall molybdenum recovery of 89.9%.
- Three principal risks have been identified in the recent testwork. These are:
- Grinding hardness and the delivery schedule of the ore: there is a period early in the mine life, one quarter in particular, where the ability to meet throughput target is right at the limit. The alleviating measure is to ensure tight ore control coming from the pit so as to not aggravate the situation any further.
- Confirming the target recovery and final concentrate grade by locked cycle testwork: these tests for the most part have not worked out, primarily due to problems with the testing. The alleviating consideration is that previous operations successfully produced concentrate at a high recovery. The problem can be controlled by good control practice in both the regrind and cleaner flotation areas. It is however necessary to do further testwork to provide confirmation that the desired target recovery-concentrate grade combination can be achieved.
- Confirming that premium concentrate quality can be achieved by proper flotation conditions followed by impurity leaching: this has been a problem associated with the locked cycle work. Open cycle tests have shown that a good concentrate grade should be possible. In addition, previous production and testing on Kitsault

ore have shown that it is possible to do a leach to reduce lead levels to a lower point. Although a risk this can be mitigated by the addition of a minor amount of capital to this area.

- Potential opportunities recognized are:
- Silver recovery: indications are that it should be possible to add recovery of silver into concentrate at a minimal additional cost. Testwork in this area is recommended in order to develop the flowsheet and process design conditions.
- Mapping the hardness into the mine model will allow throughput optimization. Currently the financial analysis assumes a throughput of 40,000 t/d. The design was set up to ensure that 85% of the time during life-of-mine that throughput would be met. Further work should be performed where a mine throughput model is created to show the benefits to the throughput rather than capping tonnage to 40,000 t/d.
- Use of larger primary flotation cells is one area in particular that would help reduce capital costs in the plant.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 Mineral Resources

17.1.1 Database

Avanti provided AMEC with a Microsoft Access® database containing all drilling information on the Kitsault property up to the last core holes drilled in 2008. Data for additional holes from the 2009–2010 campaign were provided in MS Excel® files. A total of 165 core holes (38,898.02 m) support the estimate.

The first 10 holes drilled in the property were not used, as these were small diameter drill holes, and there was too much uncertainty related to their collar location due to the use of compass and stadia survey methods. There were an additional three holes drilled for metallurgical purposes in 2008 that were also not used for resource estimation purposes. The majority of the geotechnical holes drilled in 2009 and 2010 were outside of the mineralized zone and therefore were not included in the resources database.

17.1.2 Topography

AMEC used a topographic surface file produced from the Lidar survey conducted during the 2008 field season. AMEC compared collars from the Avanti drilling campaigns and the DTM (Digital Terrain Model) created from the Lidar 5 m spaced contour lines and found good agreement between them. The topography is large enough to cover the block model extents and represent the post-mining and actual surface.

17.1.3 Models

Avanti provided vertical interpretations of lithological units by sections oriented north–south and east–west. AMEC produced bench plans at 20 m intervals from these, and reconciled them to vertical polygons.

A grade-shell was produced based on a molybdenum threshold at a 0.05% indicator (low-grade shell). Within this shell, an inner (barren core) and an outer (high-grade) annulus solid were constructed. The primary reasons for this approach were the apparent annular geometry of the Mo mineralization and the strong geostatistical trends within the deposit from a barren core, to a high-grade zone, to a low-grade zone.

For the estimation of Mo grades inside the grade shell AMEC created six geometric zones to accommodate narrow search ellipsoids.

The block model consists of regular blocks of 10 m x 10 m x 10 m and no rotation was used. Density values were assigned to blocks based upon the lithological codes.

17.1.4 Composites

AMEC regularized the nominal 3 m drill hole intervals into 6 m composites, starting from the drill hole collar and down the hole, with no break by lithological or estimation domains. The 6 m size was selected to avoid splitting of original samples and to accommodate two composites per block, as the likely selective mining unit is 10 m high, and the majority of drill holes are inclined. Composites were coded using the domain and geometric zone solids.

17.1.5 Exploratory Data Analysis

Summary statistics for non-declustered composites showed low variability of Mo values, but indicated medium to high variability for Ag and Pb assays.

Contact profiles were generated for all elements to analyze the grade behaviour at domain boundaries. Firm boundaries were determined for the grade shell and annulus domains.

17.1.6 Variography

AMEC used the commercially available Sage2001 software to construct down-the-hole and directional correlograms for Mo, Ag and Pb. Independent correlograms were created for each of the geometric zones inside the high-grade shell. Two spherical models were used to fit the experimental correlograms.

The nugget effect for all elements, modelled from the down-the-hole correlograms, is reasonably low for composites inside the high-grade shell. The high variability expressed by the coefficient of variation values from the composites outside the grade shell is also confirmed by the high nugget effect on these domains.

17.1.7 Outlier Restriction/Grade Caps

For Mo, AMEC evaluated several methods of outlier definition including histograms, cumulative distribution plots, and decile analysis. Outlier values were controlled by using a restricted search ellipse during grade estimation. AMEC evaluated different threshold values until expected metal reduction targets defined during the outlier definition analysis were reached. An un-restricted estimate (no outlier control) was generated to work as base model and then the metal reduction at a 0.001% Mo cut-off was compared between the different models.

AMEC defined outlier thresholds for Ag and Pb based on the analysis of histograms and lognormal probability plots. Outlier restriction was applied during the block grade estimation. High-grade samples were permitted to estimate grades for blocks within the defined distance thresholds.

The grade restrictions are summarized in Table 17-1.

Table 17-1: Final Outlier Threshold and High Grade Restriction Used

	High Grade Search					
				Range (m)		
Domain	Mo Threshold (%)	Ag Threshold (ppm)	Pb Threshold (ppm)	X	Y	Z
1 – HG	0.50	45	3,000	25	25	25
2 – Inner	0.15	27	850	25	25	25
3 – Outer	0.20	13	810	25	25	25

17.1.8 Estimation Methodology

AMEC estimated molybdenum, silver and lead by estimation domains using ordinary kriging (OK) interpolation. The grade estimation was completed in three passes with the exception of Mo estimates for domains outside the high-grade shell. Estimation Passes 1 and 2 used the same ellipse radii.

Pass 1 for molybdenum estimation required a minimum of seven composites, and maximum of 12 to estimate a block, with four composites permitted from any one drill hole. Pass 2, depending on the domain, required a minimum of either five or three composites, and maximum of 12, with four composites permitted from any one drill hole. Not every domain was estimated with a third pass, but typically for Pass 3, the minimum was three composites, and maximum of 12, with four composites permitted from any one drill hole.

The estimation parameters for silver and lead required a minimum of seven, and maximum 12 composites for Pass 1, a minimum of five composites, and maximum of 12 for Pass 2, and for Pass 3, the minimum was three composites, and maximum of 12. Four composites were permitted from any one drill hole.

Sample sharing was based upon the matrix determined from contact profiles.

17.1.9 Model Validation

AMEC validated the Kitsault model by using summary statistics, checking for global estimation bias, drift analysis, and by visual inspection. A nearest-neighbour (NN) model was generated to represent the declustered composites and to validate the OK model.

Molybdenum-kriged grades were found to be 7% higher on average when compared to the NN estimate. For blocks inside the high-grade shell domain, this difference was only 2.5% in favour of the kriged blocks. AMEC observed an underestimation of the kriging estimates for Ag and Pb when compared to the NN. Considering all blocks (Measured, Indicated and Inferred), Ag and Pb kriged values were lower by 11% and 10%, respectively, than the NN estimate.

AMEC compared the mean grade of the non-declustered composites to the NN means. The differences in the means indicated that data clustering is a significant issue at Kitsault for all three metals, molybdenum, silver, and lead. Non-declustered composite average can be up to 50% lower than the NN mean grades.

Swath plot validation compared the averaged grades blocks classified as Measured and Indicated by OK and NN estimates for each swath. The swaths displayed good agreement between the OK and NN estimates, with localized differences in non-declustered composites at lower elevations where the number of composites is reduced.

Visual inspection, comprising comparison of the grades of composites and blocks in vertical sections and plan views indicated that the grade estimate appropriately represented the composite grades, and grade extrapolation was well-controlled where sufficient data existed. There were no high-grade blow-outs or areas with extreme extrapolation for blocks classified as Measured, Indicated, or Inferred.

Change-of-support grade–tonnage curves (Herco plots) and the OK and NN grade–tonnage curves were compared for Mo tonnes and grades inside the high-grade domain shell. On review of the Herco plots, the smoothing for Mo was minimal, around 0.2% in metal, when a cut-off close to the economical breakeven value of 0.03% Mo was evaluated.

17.1.10 Mineral Resource Classification

AMEC used the following criteria to classify blocks into confidence categories:

- Measured mineral resources: required composites from a minimum of three drill holes within an 45 m average distance from a block centroid.
- Indicated mineral resources: required samples from a minimum of three drill holes within a 90 m distance of the block centroid, or composites from two drill holes at an average distance of 45 m from the block centroid.
- Inferred mineral resources: blocks that were not classified as Measured or Indicated categories, but had a composite within 150 m from the block centroid were classified as Inferred.

Remaining blocks were not classified. AMEC manually designed bench polygons every 10 m to smooth the initial classification and avoid islands or isolated blocks of different resource confidence categories.

17.1.11 Assessment of Reasonable Prospects of Economic Extraction

AMEC assessed the classified blocks for reasonable prospects of economic extraction by applying preliminary economics for potential open pit mining methods. Mining and process costs, as well as process recoveries used in the Lerchs–Grossmann (LG) pit shell were defined by AMEC. Pit input parameters are summarized in Table 17-2. Only Mo was considered as source of revenue for the open-pit scenario.

Table 17-2: Optimization Parameters for Open Pit Resource Shell

Parameter	Value
Mining Cost (CDN$/t)	1.61
Incremental Mining Cost (CDN$/bench)	0.018
Process Cost (CDN$/t)	5.84
Process Recovery (function of Mo grade)	7.5808 * ln (Mo) + 108.63
Mo price (CDN$/lb)	15.62
Selling cost (CDN$/lb)	1.24

The cut-off for reporting mineral resources was calculated based on the Mo price, metallurgical process recoveries and costs, and selling costs. Table 17-3 shows a summary of the input parameters and the final derived Mo cut-off grade for resource reporting.

Table 17-3: Marginal Cut-off Grade Input Parameters and Results

Parameters	Value
Processing Cost (CDN$/t)	5.84
Recovery (%)	89
Price (CDN$/lb)	15.62
Mining Cost	1.61
Selling Cost (CDN$/lb)	1.24
Cut-off Mo (%)	**0.021**

17.1.12 Mineral Resource Statement

The mineral resources for the Kitsault Project are tabulated in Table 17-4 at a cut-off grade of 0.021% Mo. Mineral resources have an effective date of 8 November, 2010. AMEC cautions that mineral resources that are not mineral reserves do not have demonstrated economic viability.

The sensitivity of the mineral resource to a reduction or increase in molybdenum cut-off grades is included as Table 17-5, with the base case highlighted and an illustration of the grade versus tonnage curve is shown in Figure 17-1.

Table 17-4: Kitsault Mineral Resources, Effective Date 8 November 2010, Greg Kulla, P.Geo. (cut-off 0.021% Mo)

Category	Volume (Mm^3)	Density (g/cm^3)	Tonnage (Mt)	Mo %	Mo (MLb)	Ag (ppm)	Ag (Moz)
Measured	27.6	2.65	73.0	0.093	150.3	4.28	10.0
Indicated	84.9	2.66	225.8	0.065	322.2	4.17	30.3
Measured + Indicated	112.4	2.66	298.8	0.072	472.5	4.20	40.3
Inferred	58.8	2.66	157.1	0.050	172.2	3.65	18.4

Notes:
1. Mineral Resources are inclusive of Mineral Reserves
2. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability
3. Mineral Resources are defined with a Lerchs–Grossmann pit shell, and reported at a 0.021% Mo cut-off grade
4. Mineral Resources are reported using a commodity price of CDN$15.62/lb Mo, an average process recovery of 89%, a process cost of CDN$ 5.84/t and selling cost of CDN$1.24 /lb of Mo sold. No revenue was assumed for Ag
5. Tonnages are rounded to the nearest 1,000 tonnes; grades are rounded to three decimal places for Mo and two decimals for Ag
6. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade and contained metal content
7. Tonnage and grade measurements are in metric units; contained molybdenum is in imperial pounds.
8. There is potential for a 30% to 50% recovery of the silver reporting to a saleable concentrate. As of December 1, 2010, the metallurgical work in support of this is indicative only, suggesting that although there may be a reasonable prospect to extract this silver resource there is insufficient work to define the level of benefit that would support inclusion of silver in a reserve estimate. No dedicated silver recovery circuit has been included in the process design, but there are reasonable expectations that this can be added in the future.

Table 17-5: Kitsault Mineral Resources Sensitivity to Cut-off Grade (Measured and Indicated). Base Case is highlighted. Effective Date 8 November 2010, Greg Kulla, P.Geo.

	Cut-off Mo %	Tonnes (kt)	Mo (%)	Ag (ppm)	Mo (Mlb)	Ag (Moz)
Measured						
	0.010	80,331	0.086	4.345	152.8	11.2
	0.015	77,396	0.089	4.314	152.0	10.7
	0.021	73,037	0.093	4.279	150.3	10.0
	0.025	70,278	0.096	4.289	148.9	9.7
	0.030	66,838	0.100	4.334	146.8	9.3
	0.035	63,586	0.103	4.384	144.5	9.0
	0.040	60,673	0.106	4.448	142.1	8.7
Indicated						
	0.010	267,872	0.057	4.013	336.8	34.6
	0.015	251,026	0.060	4.068	332.2	32.8
	0.021	225,798	0.065	4.174	322.2	30.3
	0.025	208,038	0.068	4.248	313.2	28.4
	0.030	183,057	0.074	4.338	298.0	25.5
	0.035	160,874	0.080	4.407	282.2	22.8
	0.040	144,252	0.084	4.478	268.5	20.8
Measured and Indicated						
	0.010	348,203	0.064	4.09	489.7	45.8
	0.015	328,421	0.067	4.13	484.2	43.6
	0.021	298,835	0.072	4.20	472.5	40.3
	0.025	278,316	0.075	4.26	462.1	38.1
	0.030	249,895	0.081	4.34	444.8	34.8
	0.035	224,460	0.086	4.40	426.7	31.8
	0.040	204,924	0.091	4.47	410.6	29.4

Figure 17-1: Grade by Tonnage Curve for Kitsault Measured and Indicated Mineral Resources

17.2 Mineral Reserves

The block size used for the mineral reserve model is 10 x 10 x 10 m. AMEC constructed a topographic surface based on the Lidar survey conducted during 2009, and used it to code the model with the percentage of the block that lay below topography.

17.2.1 Geotechnical Assumptions

Geotechnical domains and pit slope angles were provided by SRK Consulting (SRK). SRK recommended dividing the future Kitsault pit area into seven slope domains, or sectors. AMEC coded the domains into the resource model, as required for the LG pit optimization and pit phase design. The inter-ramp angles were then flattened to overall slopes, allowing for the haulage ramps that would be included in the pit designs. Slope angle reductions were based on AMEC's ramp configuration, ramp width, the number of times a haulage ramp passes through a domain, the height of the wall, and the inter-ramp slope assigned for the domain. Overall slopes used in pit optimization ranged from 42° to 48°. Inter-ramp slopes used for pit phase design ranged from 48° to 56°.

17.2.2 Dilution and Ore Loss

AMEC visually inspected the block model to assess the continuity of the ore zones and how much external dilution and losses could be realized when mining of the deposit according to the mining method and the selected equipment sizes. In plan, the deposit consists of a higher-grade ring of mineralization that gradually decreases in grade. The mineralization above the economic cut-off tends to be continuous over distances of more than 100 m. The mineralization is not constrained by sharp structural boundaries, but rather the grade of a waste block next to an ore block tends to be just slightly below the economic cut-off. Loss and dilution adjustments were then made only to remove isolated ore and waste blocks.

Because the block model consists of 10 m^3 blocks, which are too small to be mined individually with the selected bulk mining equipment, assignment as ore or waste was made as follows: When a block of above-grade material was surrounded by three or more waste blocks, it was coded as waste and considered to be a mining loss. When a waste block was surrounded by three or more ore blocks, it was coded as ore and considered mining dilution. Some of the blocks added as dilution are classified as Inferred resource material. For this study, the molybdenum grade of the Inferred material has been set to “0”. The Inferred material makes up less than 0.1% of the total run-of-mine (ROM) ore, and so this does not have a significant effect on overall mill feed.

Dilution and loss have a very small impact on the total mineralization, and are considered appropriate for a porphyry-type deposit.

17.2.3 Marginal Cut-off Grade

The marginal cut-off is the point where the revenue from processing the ore is equal to the total ore-based costs to process the ore. As the haul to the crusher is shorter than the haul to the waste dump, the total ore-based costs include a credit for the difference between the ore and waste haulage costs. The equations used were:

Total ore-based costs = ore-based costs + ore mining cost – waste mining costs

Total ore-based costs = 5.84 + 1.90 – 2.03 = $5.71/t

The resulting marginal cut-off is 0.026% Mo. Stockpile rehandle costs and stockpile ore degradation were not accounted for in the cut-off calculation because most low-grade ore is assumed to be fed directly to the mill.

Material was considered to be ore if the revenue of the block exceeded the ore-based costs (processing, sustaining capital allowance, tailings management, G&A). The revenue was based on net molybdenum price after refining charges and a 1.7% royalty deduction.

17.2.4 Mineral Reserve Statement

The mineral reserves for the Kitsault Project are tabulated in Table 17-6 at a cut-off grade of 0.026% Mo. Mineral reserves have an effective date of 8 November 2010.

Table 17-6: Kitsault Mineral Reserves, Effective Date 8 November 2010 Ryan Ulansky, P. Eng. (cut-off 0.026% Mo)

Category	Tonnage (Mt)	Mo (%)	Contained Mo (Mlb)
Proven	69.7	0.097	148.5
Probable	162.8	0.075	267.3
Total Proven and Probable	**232.5**	**0.081**	**415.8**

Notes: 1. Mineral Reserves are defined within a mine plan with pit phase designs guided by Lerchs–Grossmann (LG) pit shells and reported at a 0.026% Mo cut-off grade after dilution and mining loss adjustments. The LG shell generation was performed on Measured and Indicated materials only, using a molybdenum price of CDN$13.58/lb, an average mining cost of CDN$1.94/t mined, a combined ore-based cost (processing and G&A) of CDN$5.84/t milled, and a selling cost of $1.24 /lb of Mo. Metallurgical recovery used was a function of the head grade, defined as Recovery =7.5808*Ln(Mo%)+108.63 with a cap applied at 95%. Overall pit slopes varied from 42° to 48°.

2. Dilution and mining loss have been accounted for based on a waste neighbour analysis. 1.5 Mt of Measured and Indicated material above cut-off was routed as waste. 1.9 Mt of Measured and Indicated material below cut-off was included as dilution material.
3. Tonnages are rounded to the nearest 1,000 tonnes; grades are rounded to three decimal places for Mo.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tonnes, grade, and contained metal content.
5. Tonnage and grade measurements are in metric units; contained molybdenum is in Imperial pounds.
6. The life-of-mine strip ratio is 0.77.

17.3 Comment on Section 17

The QPs are of the opinion that the Mineral Resources for the Project, which have been estimated using core drill data, have been performed to industry best practices, and conform to the requirements of CIM Definition Standards (2005).

Areas of uncertainty that may materially impact the Mineral Resource estimates include:

- Long-term commodity price assumptions
- Long-term exchange rate assumptions

18.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORT ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

18.1 Proposed Mining Operation

18.1.1 Pit Optimization

The mining cost used in the pit optimization was based on the results of the 2009 pre-feasibility study and included direct operating and maintenance costs for drilling, blasting, loading, and hauling (Table 18-1). Other costs are general mine support for road, bench, and EWRSF maintenance, dewatering, and ore control.

An incremental mining cost was applied to account for the increased cost of hauling material from deeper in the pit. For ore tonnes, the incremental cost was an additional $0.02/t per 10 m bench; for waste, the additional cost was $0.03/t per 10 m bench. The higher incremental cost for waste accounts for the waste destination being higher and further away than the ore destination. The reference mining cost for waste is $1.61/t and increases by $0.03/t for every bench below the 680 m elevation. The reference mining cost for ore is $1.51 and increases by $0.02/t for every bench below the 660 m elevation.

Ore-based costs are as shown in Table 18-2.

Molybdenum recovery is based on a head grade recovery formula developed by AMEC:

$$\text{Recovery} = 7.5808 \times \text{Ln}(\text{Mo}) + 108.63$$

Recovery was limited to a maximum of 95%. A metal price of US$12.50/lb (CDN$13.58/lb) of molybdenum was used. The total selling cost of $1.24/lb includes molybdenum roasting charges, smelting and refining charges, ocean transport, insurance, and 1.73% of royalties.

Open pit optimization was undertaken to generate a set of nested pit shell surfaces to guide the design of nested pit phases. The pit optimization and accompanying sensitivity work were completed using the LG algorithm as implemented in the Whittle™ software package. The nested pit shells were generated by varying the revenue factor (RF), developing a schedule of material movement for the RF 1.00 pit shell, and running a sensitivity analysis on the input parameters. The RF 1.00 shell was selected to guide the ultimate pit design because it maximized pit reserves and project cash flow.

Table 18-1: Average Mining Cost

Item	Unit	Value
Average mining cost (from PFS)	US$/t	1.63
Exchange Rate	US$/CDN$	0.92
Average Mining Cost	CDN$/t	1.77
Average sustaining cost allowance	CDN$/t	0.17
Total Average Mining Cost	**CDN$/t**	**1.94**

Table 18-2: Ore-based Costs

Area	Cost (CDN$/t)
Process Operation	3.88
Mill Sustaining Capital Allowance	0.19
Tailings Management	1.03
G&A	0.60
Closure & Reclamation	0.14
Total Unit Ore-Based Cost	**5.84**

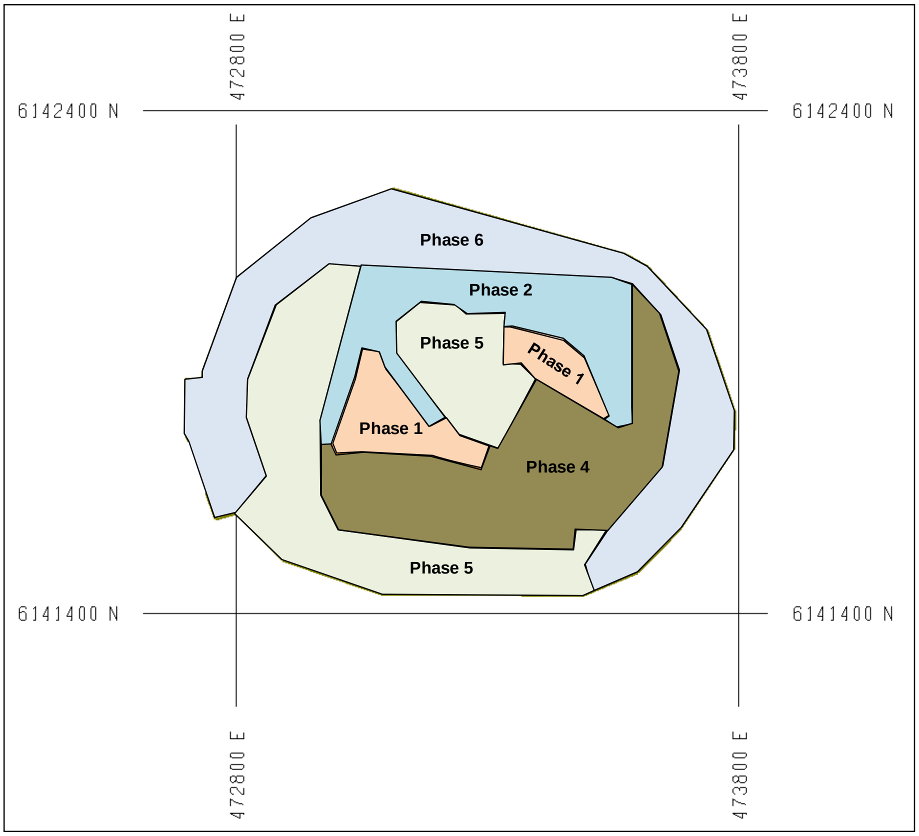
The design ultimate pit, although slightly larger than the pit shell, fits reasonably well with a 2% increase in stripping ratio, 1% decrease in molybdenum grade, and 0.5% increase in contained metal.

Sensitivity analysis on the optimizations found that the Project is more sensitive to changes in molybdenum price and less sensitive to changes in mining cost; for example, a 30% reduction in molybdenum price would result in a reduction of more than 25% in recovered molybdenum. The contained molybdenum is less sensitive to ±5° pit slope changes. Flattening the pit walls by 5° results in a reduction of 3% in recovered molybdenum; steepening them by 5° results in a 2% increase in recovered molybdenum. The wall slope has a much larger impact on the amount of waste contained in the pit. Flattening the walls by 5° results in 26% more waste in the pit, whereas steepening them produces 15% less waste. The pit is sensitive to changes in process recovery. When the modelled recovery was multiplied by a factor of 0.9, ore tonnage decreased by 11%.

18.1.2 Pit Design Phases

The Kitsault ultimate pit was divided into six phases, shown in Figure 18-1, based on nested LG shell guidance, molybdenum grade, the Patsy Creek diversion requirement, strip ratio, access considerations, and operational constraints.

Figure 18-1: Kitsault Pit Phases in Plan at 530 m Elevation



Note: Phase 3 is not present at this elevation

Ramps in final walls have a design width of 33 m and a gradient of 10%. The minimum mining width is 60 m. The crest elevation of the phases is 800 masl and the pit bottom elevation is 220 masl.

The ultimate pit design includes 33,795 kt of Inferred Mineral Resources at a grade of 0.046% Mo, which is treated as waste in the mine plan. This mineralization could potentially be processed if additional drilling supports upgrading to higher-confidence mineral resources.

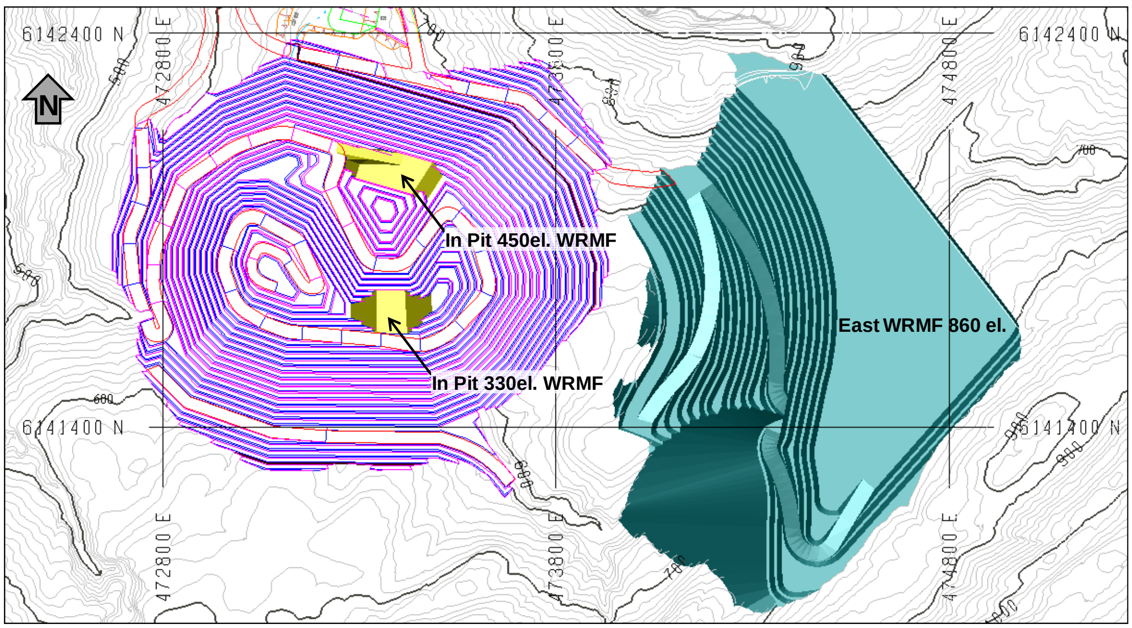
18.1.3 Stockpiles

Short-term stockpiling is required to buffer crusher downtime and production fluctuations from the pit. Low-grade ore mined early in the life will need to be stored in long-term stockpiles to improve the NPV of the project. The material between the elevated cut-off and the economic cut-off will be placed in a long-term stockpile and be processed through the mill at the end of the mine life.

18.1.4 Waste Rock Facilities

Waste rock in the block model has been characterized as either non acid-generating (NAG) or potentially acid-generating (PAG). The split between NAG and PAG rock was based on a ratio of neutralizing potential to acid potential of 1.0, as recommended by SRK (2009). Most of this rock will be placed in the east waste rock management facility (EWRMF) in the Patsy Creek drainage, buttressing the TMF South Embankment. Two small in-pit waste rock management facilities (WRMFs) with a capacity of 2.3 Mt will also be utilized (Figure 18-2).

Figure 18-2: Kitsault WRMF Facilities



18.1.5 Haul Roads

Haul roads are required between the pit phases and the ore crusher, EWRMF, TMF South Embankment, overburden stockpiles, construction areas, and the truckshop. Durable NAG waste rock will be used for road bases and capping material. During the initial construction period the mine will be responsible for building the roads from the mining faces to the crusher and WRMF. All other roads will be constructed by contractors as part of the overall construction effort and are not included in the mining costs.

18.1.6 Snow Removal

The Kitsault site receives approximately 10 m of snow annually. Some of this snow will accumulate in active working areas and will need to be trucked from the pit to a dedicated snow dump on the western edge of the EWRMF. The dump is sized to hold 300,000 m^3 of placed snow, which is assumed to melt each summer so the same dump area can be used the following winter. Runoff from the snow dump will be contained by the pit perimeter ditches and will report to the contact water sump, from where it will be pumped to the TMF for containment.

18.2 Production Plan

The mine material movement schedule was developed with a four-part objective:

- Gain early access to the higher-grade ore to facilitate early capital recovery
- Meet requirements for construction materials for roads, platforms, and the TMF South Embankment, mainly during the preproduction period
- Minimize waste stripping by carefully positioning the haul roads and by maintaining a smooth waste to ore ratio
- Integrate the diversion of Patsy Creek along the south wall of the open pit.

Under the Project master plan, construction and pre-stripping are scheduled over a one-year period. The primary objective of preproduction mining is to supply material for the South Embankment of the TMF and other construction projects. Preproduction mining will also focus on developing mine access roads suitable for large mining equipment and "facing-up" the initial pit phases into productive set-ups for the start of production.

The production plan was developed on a quarterly basis for preproduction and the first two years of production, and annually thereafter (Table 18-3). The plan assumes that the mine will operate 365 d/a, with 10 days allowed for delays due to fog and winter conditions. The plant was scheduled to operate 365 d/a with sufficient materials stockpiled at the crusher and coarse ore stockpile to accommodate mine outages resulting from weather constraints. Maximum vertical advance per phase per year was eight 10 m benches. Total pre-stripping is 8.5 Mt. Peak material movement is 124 kt/d. The highest rate of vertical advance is in Year 1, when both Phase 1 and 2 are mined at a rate of 8 benches a year. In the production years, two to three phases are typically active in any period. The maximum mining rate of 42 Mt/a is achieved in Year 2. The average rate from Years 1 to 10 is 33 Mt/a.

Table 18-3: Summary Mine Production Plan by Year

	Ore			Waste		Total
Year	To Crusher (kt)	To Stockpile (kt)	From Stockpile (kt)	Rock (kt)	Snow (kt)	All Material (kt)
Preproduction	-	362	-	8,500	111	8,973
Year 1	13,836	3,801	193	19,910	89	37,829
Year 2	14,600	4,126	-	22,940	112	41,778
Year 3	14,600	3,088	-	21,375	184	39,247
Year 4	14,600	5,969	-	13,315	181	34,065
Year 5	14,600	2,833	-	15,349	142	32,924
Year 6	14,600	2,581	-	14,136	154	31,471
Year 7	14,600	2,087	-	12,675	137	29,499
Year 8	14,600	1,043	-	12,725	142	28,510
Year 9	14,600	1,024	-	11,061	138	26,823
Year 10	14,600	291	-	8,125	134	23,150
Year 11	14,600	-	-	6,523	131	21,254
Year 12	14,600	-	-	5,360	127	20,087
Year 13	14,600	-	-	3,657	123	18,380
Year 14	14,600	-	-	2,103	108	16,811
Year 15	1,883	-	12,767	475	21	15,096
Year 16	-	-	14,245	-	21	14,226
Total	**205,469**	**27,205**	**27,205**	**178,229**	**2,056**	**440,164**

Note: Without snow removal and stockpile rehandle, the total material mined, inclusive of preproduction mining, is 410,903 kt.

Mill feed constitutes the ore transported directly from the mine plus ore reclaimed from the stockpiles (Table 18-4). After plant ramp-up, mill feed averages 40 kt/d. Contained Mo in the mill feed averages approximately 29.7 Mlb in the first five years and 23.4 Mlb/a over the life of the mine; the maximum is 33.7 Mlb in Year 3.

The Kitsault deposit has very little overburden, most of which is too thin to recover. When a recoverable thickness is encountered it will be pre-stripped from the mining area before production mining begins. The initial stripped materials will be stockpiled for construction and reclamation purposes. Materials stripped during the mine production period will continue to be stockpiled. On decommissioning of the mine, the downstream slope of the EWRMF will be resloped to 2:1 (H:V). It is anticipated that the resloping itself will provide an acceptable medium for growth of vegetation. However, in the event that resloping alone is not adequate, a provision has been allowed for in the closure cost estimate to place a 0.45 m thick layer growth medium over the resloped waste rock, plus an additional 0.3 m thick layer of topsoil. The cover or the resloped waste rock would then be vegetated by seeding and planting.

Table 18-4: Summary of Mill Feed by Period

Period	Mill Feed From Pit (kt)	Mill Feed From Stockpile (kt)	Mill Feed Total (kt)	Mo %	Mo Recovery %
Y1 Q1	2,910	193	3,103	0.103	91.5
Y1 Q2	3,650	-	3,650	0.105	91.5
Y1 Q3	3,650	-	3,650	0.104	91.5
Y1 Q4	3,627	-	3,627	0.103	91.5
Y2 Q1	3,650	-	3,650	0.092	91.6
Y2 Q2	3,650	-	3,650	0.099	91.6
Y2 Q3	3,650	-	3,650	0.117	91.6
Y2 Q4	3,650	-	3,650	0.115	91.6
Y3	14,600	-	14,600	0.114	92.1
Y4	14,600	-	14,600	0.088	90.2
Y5	14,600	-	14,600	0.096	90.9
Y6	14,600	-	14,600	0.096	90.8
Y7	14,600	-	14,600	0.089	90.3
Y8	14,600	-	14,600	0.082	89.6
Y9	14,600	-	14,600	0.080	89.5
Y10	14,600	-	14,600	0.074	88.9
Y11	14,600	-	14,600	0.072	88.7
Y12	14,600	-	14,600	0.068	88.2
Y13	14,600	-	14,600	0.079	89.4
Y14	14,600	-	14,600	0.081	89.6
Y15	1,883	12,767	14,600	0.037	83.7
Y16	-	14,245	14,245	0.031	82.4
Total	**205,649**	**27,205**	**232,674**	**0.081**	**89.9**

Includes 202 kt of Inferred dilution material with grades set to zero, which is not included in Table 17-6.

18.3 Equipment

18.3.1 Equipment Selection

Mining equipment selection was based on a high-level comparative analysis of received vendor quotes. One 26.5 m^3 electric rope shovel and one 28 m^3 electric hydraulic shovel were selected as primary loading tools based on requirements for the 10 m bench height and productivity levels. An 18 m^3 front end loader has been included as a support / backup unit. A peak of 10 218 tonne haul trucks were selected to handle the haulage requirements. Sizes and numbers of support and auxiliary equipment were based on the nature of the tasks the equipment is expected to perform and general fit with the main mine production fleet. The complete life-of-mine equipment fleet, including replacement and retirement units, from preproduction to the end of the mine life, is shown by year in Table 18-5.

Table 18-5: Mine Equipment Fleet Requirements

Equipment Unit	PP	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
Major Equipment																
Sandvik 1190E Drill	1	2	2	2	2	2	2	2	2	1	1	1	1	1	-	-
Sandvik QXR 920 Drill	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-
P&H 2300 Cable Shovel	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Komatsu PC5500 Hydraulic Shovel	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-
Komatsu WA1200 Front-End Loader	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CAT 793 Haul Truck	5	9	9	9	9	10	10	10	10	10	10	8	8	8	3	2
Support Equipment																
Cat D10T Track Dozer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
Cat 16M Grader	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
Cat 777 Water Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat RTD 834G Wheel Dozer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Auxiliary Equipment																
Cat 345CL Hydraulic Excavator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
55 Tonne Class Crane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15 Tonne Forklift	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fuel/Lube Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mech Truck	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Tire Handler	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Light Plant	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2
Light Vehicle	5	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3
Crew Bus	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Truck with 10 t Hiab Crane	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Low Bed Tractor Trailer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ambulance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cable Reeler	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Auxiliary equipment will include various trucks, equipment handling implements, and personnel vehicles. A track dozer, wheel dozer, grader, hydraulic excavator, and water truck will be used for stockpile and waste dump maintenance, cleaning waste from the ore contacts and drill pattern cleanup, general drainage maintenance tasks, and dust suppression.

Mine modelling software will be used to incorporate data from exploration and production drilling to develop a bench plan that attempts to delineate the ore and waste mining zones. Both zones will be drilled in a single 10 m pass with 270 mm (10⅝") diameter holes. A wall control program will be used along all final walls, but not normally for intermediate pit phases except when the walls are planned to be exposed and left standing for more than one full year. Horizontal pit wall drain holes at 121 mm will be required in selected areas to depressurize the wall rock. The 121 mm (4¾") holes will be drilled with a hammer drill and the 270 mm ($10^5/_8$") holes with an electric rotary drill.

A 70% emulsion / 30% ANFO blend blasting and water-resistant agent, will be used for all blasting. Blast hole patterns will be designed by the drill and blast engineers for optimal "digability", cost, and fragmentation for ore and waste areas. Every production hole near a boundary between ore and waste zones will be sampled. Inside a known ore zone, one of three drill holes will be sampled, representing approximately 5,000 t. In known waste zones, one of every 12 holes, which represents 20,000 t of waste rock, will be selected for waste characterization. The blasthole sampling will generate an average of 22 samples a day.

Equipment productivities were calculated based on estimated annual operating hours and mechanical availability. Annual operating hours varied by fleet due to associated availabilities. To allow for inefficiencies, a 50-minute operating hour was applied to all equipment. In addition, 80% truck availability was applied to the shovels and 75% to the loaders.

18.3.2 Equipment Maintenance

The strategy for repair and maintenance of the mobile equipment fleets at the Kitsault project will be an Owner-managed maintenance program. During equipment assembly and commissioning, manufacturing representatives will be present on site to train both the operators and maintenance personnel. The ratio of maintenance personnel to equipment operators will be 0.46 to 1.0.

The mine truckshop will be a pre-engineered building housing four heavy-vehicle repair bays, a light-vehicle repair bay, and other bays for tire change-out, welding, and equipment washing. It will also have areas for offices, a warehouse, and emergency vehicles.

18.4 Geotechnical

A geotechnical pit slope design evaluation was carried out by SRK (2010) in which geotechnical core logging, discontinuity orientation and laboratory strength testing served as the basis for analysis.

The rock mass model was divided into two geotechnical domains, hornfels and intrusives, which are similar in terms of discontinuity orientations, but distinctly different with regard to rock mass properties. Based primarily on geologic structure, pit wall orientation and operational considerations, the final pit was further divided in to 10 sectors for analysis.

Bench configurations as well as interramp and overall slope angles were assessed separately for each sector and domain. Bench design was evaluated using stochastic simulations of discontinuity properties (such as orientation, spacing, persistence, and shear strength) to analyze the likelihood for plane shear and/or wedge type failures to occur in a given bench configuration and orientation.

Interramp and overall slope stability analyses were conducted using probabilistic limit equilibrium methods. A design probability of failure of up to 30% for slopes with low failure consequences and approximately 10% for high failure consequences were used for interramp and overall slopes; however, in most cases, slope recommendations were controlled by bench design rather than interramp slope angles.

Analysis results were combined to produce a coherent and complete set of design criteria for a rational final slope profile with allowances for dewatering requirements, safety berms, and access. Design recommendations were developed for bench configuration as well as interramp and overall pit slope angles. Recommendations are summarized in Table 18-6.

Table 18-6: Pit Slope Design Recommendations

Sector	Max. Slope Height (m)	Interramp Slope Angle (°)	Average Bench Face Angle (°)	Bench Height (m)	Average Berm Width (m)
1	520	48	79	20	14.1
2	425	48	70	20	10.7
3	370	52	83	20	13.1
4	430	50	68	20	8.7
5	425	54	73	20	8.4
6	345	54	73	20	8.4
7	370	54	73	20	8.4
8	350	52	70	20	8.4
9	195	56	79	20	9.6
10	210	54	73	20	8.4

18.5 Drainage and Dewatering

A two-dimensional pit inflow model was prepared across the pit extending from Patsy Creek on the south end to its diversion north of the pit. The model incorporates three separate hydraulic zones, and predicts a total groundwater inflow to the pit of 4,800 m^3/d at end of mining, but this prediction is sensitive to the assumed bulk hydraulic conductivity assigned to the rock mass, particularly for the lower quartz monzonite and the hornfels. Actual inflow volumes will vary in accordance with the bulk hydraulic conductivity rates.

Water will be managed via ditching on benches and through sumps in the pit floor, assuming an arrangement of 50 m long horizontal drains at 50 m spacing along benches and 100 m long on ramps. The actual drain requirements will be assessed during operations based on the performance of the dewatering system; requirements are likely to vary with mine depth.

A diversion will be constructed along the south wall of the open pit early in operations to convey the diverted Patsy Creek catchment toward Lime Creek. This will be maintained until closure, when the diverted flows will be allowed to flow directly into the open pit until it fills, at which time it will discharge to Lime Creek. The Patsy Creek diversion may be maintained upon the cessation of mining activities until the pit fills without the input of Patsy Creek flows, should this be deemed necessary to mitigate flow reductions in Lime Creek.

Surface water captured in the mine area will be pumped to the TMF or, if of suitable quality, be discharged to Lime Creek to be mixed with the diverted flows from Patsy Creek.

Precipitation, seepage from walls, and horizontal drains will introduce water into the pit. Some of this water will be absorbed by the broken rock and be hauled out with the rock or removed as snow.

As the mine deepens a collection system of ditches, pipes, sumps, pumps, and booster pumps will be required to contain the water. The pit dewatering system will be designed to handle a 2-year return period rain storm. Rain events in excess of this will flood the lower areas of the pit. During these rare events, mining will be focused on the upper mining phases until the water is pumped out of the pit bottom.

Ditches will route water that collects in the pit bottom to small, temporary sumps created as part of the normal mining operation. Open pit dewatering will continue throughout the mine life, with dewatering flows being either pumped to the TMF or discharged directly to Lime Creek.

18.6 Emission Controls

All equipment will be maintained in good working order to minimize CO_2 emissions. All main equipment is designed to meet OSHA and MSHA occupational noise criteria. Routine water spraying by the water truck will suppress dust generated on roads, benches, and dump areas. Used oil will be collected at the truckshop and temporarily stored on site. Some of the waste oil will be used as a constituent of the fuel component in the ANFO mix; the surplus oil will be sent off site for recycling.

18.7 Infrastructure

Project infrastructure is discussed in Section 5 of this Report.

18.8 Environment

Environmental discussions, including consideration of closure and remediation, are discussed in Section 4 of this Report.

18.9 Capital Cost Estimate

The estimate was developed in accordance with AMEC Feasibility Standards (Class 3), AACE Class 3 international classification, and consists of semi-detailed unit costs and assembly line items. Where design is not sufficiently advanced to prepare material take-offs (MTOs), the estimate is based on factors or allowances. The estimate was prepared by area using the project work breakdown structure (WBS) and AMEC's standard disciplines. The estimate covers:

- Direct field costs of executing the project, including the construction and installation of all structures, utilities, materials, and equipment
- Indirect costs associated with the design, construction, and commissioning of the facilities
- Owner's costs, including EPCM office costs, Project expenses, Terrace office expense, mine site ramp-up costs, and training.

The accuracy of the capital cost estimate, considering the current state of design and procurement, is expected to be within ±15% of final project cost. All costs are expressed in third quarter 2010 Canadian dollars with no allowance for escalation, currency fluctuation, or interest during construction. Items quoted in US dollars were converted to Canadian dollars using an exchange rate of CDN$1.00 = US$0.95.

Sustaining capital cost was based on the mining equipment replacement costs and sustaining TMF MTOs provided by Knight Piésold. Mine closure costs were not included in the estimate, but were estimated separately by SRK. Closure costs are estimated at CDN$31 million, starting in the last two years of operations.

AMEC performed an initial contingency analysis using a risk analysis program (@RISK) to generate a range of probable costs. The contingency was determined to be 14.85% for the 85% probability level on AMEC's scope of work. Knight Piésold recommended the following contingencies: general site preparation 10%, roads 25%, TMF 25%, tailings and reclaim systems 10%, seepage collection and sediment control 10%, low-grade stockpile 10%, diversion systems 25%, fresh-water supply 10%. The end result is a 21% contingency on Knight Piésold's scope of work.

The estimated Project capital costs are summarized in Table 18-7.

Table 18-7: Capital Cost Summary by Major Area

Area	Description	Cost (CDN$M)
1000	Mining	91.1
2000	Site preparation and roads	38.6
3000	Process facilities	212.1
4000	Tailings management and reclaim systems	97.6
5000	Utilities ties	43.1
6000	Ancillary buildings and facilities	41.7
	Total Direct Costs	524.2
8000	Owner's costs	22.9
9000	Indirects	289.9
	Total Indirect Costs	312.8
	Total Direct + Indirect Costs	837.0
	Contingency	Incl above
	Total Capital Costs	**837.0**

18.10 Operating Costs

The operating cost estimate for the Kitsault project was assembled by area and component, based on estimated staffing levels, consumables, and expenditures, according to the mine plan and process design. The costs were prepared in third quarter 2010 Canadian dollars and exclude:

- Contingency
- Allowance for escalation
- Sales tax
- Concentrate shipping
- Molybdenum roasting tolling charges
- Import duties.

Life-of-mine (LOM) operating costs are shown in Table 18-8 and annual operating costs in Table 18-9.

Based on WTI average price of US$80.00 per barrel and an exchange rate of $CDN1.00 = $US0.95, diesel costs of CDN$0.80/L, including delivery, were used for operating cost calculations. Electrical costs for the project were calculated on a blended rate of $0.042/kWh based on BC Hydro's schedule 1823 transmission service rates for fiscal 2011 year in effect as of 1 April 2010.

Table 18-8: LOM Operating Costs ($000)

Area	Total LOM	$/t Milled	$/lb Mo Recovered
Mine Operations	573,954	2.47	1.54
Processing Operations	1,102,207	4.74	2.95
Administration	252,984	1.09	0.68
Total	**1,929,145**	**8.30**	**5.17**

Table 18-9: Annual Operating Costs

Year	Total ($000)	$/t Milled	$/lb Mo Recovered
1	126,725	9.03	4.33
2	129,975	8.90	4.17
3	128,557	8.81	3.81
4	126,523	8.67	4.92
5	128,109	8.77	4.56
6	127,548	8.74	4.57
7	126,966	8.70	4.88
8	126,733	8.68	5.37
9	124,896	8.55	5.43
10	121,804	8.34	5.72
11	121,084	8.29	5.85
12	120,950	8.28	6.30
13	118,413	8.11	5.22
14	114,535	7.84	4.89
15	94,637	6.48	9.56
16	85,702	6.39	11.20
Total/Average	**1,929,145**	**8.30**	**5.17**

The mine operating cost estimate incorporates costs for operating and maintenance labour, staff, and operating and maintenance supplies for each year. Operating and maintenance supplies are based on North American supply and include an allowance for freight and delivery to the mine site. Taxes are not included. Consumables (fuel, explosives, supplies) were calculated from expected use, unit consumptions, and allowances for minor items.

Processing costs include the costs for operating and maintaining the processing facilities, from the primary crusher through to concentrate loadout, as well as process and reclaim water pumping and tailings management. The processing costs account for the expenses associated with purchasing consumables, equipment maintenance, personnel, and power consumption. Consumables costs include items such as crusher liners, mill liners, grinding media, all chemical reagents, and an allocated cost for office / laboratory supplies. The reagent costs are inclusive of freight for shipping the items to site. Employee organization, salaries, and hourly costs were provided by Avanti, based on two current operations running in BC and the Yukon. Equipment maintenance supplies and materials are estimated as a percentage of the capital cost of equipment. Power consumption was derived from the estimated load of individual pieces of equipment on the equipment list.

The general and administrative (G&A) operating costs are the expenses for cost centres that are not directly linked to the mining and process disciplines, and include labour and overhead costs. G&A for each cost centre was estimated either from first principles or based on input from Avanti based on other operations. Maintenance costs have been calculated property-wide, and a portion of these costs have been assigned to G&A to cover maintenance costs not specific to either the process plant or mine.

18.11 Markets

18.11.1 Market Overview

Molybdenum is a new addition to the commodities exchange market. In February 2010, the London Metals Exchange (LME) launched the first futures contract for roasted molybdenum concentrate. With very thin trading volume, however, this contract has yet to serve as benchmark for prices. Prices are still typically determined by negotiation between producers, trading houses, and end users, with supply and demand fundamentals in the background. Molybdenum is traded in various forms, including raw molybdenum concentrates, molybdenum oxide, ferromolybdenum, ammonium molybdate, and molybdenum powders.

The molybdenum market is characterized by two distinct types of sources of mine supply, which in the long run respond to different market fundamentals. The majority of the world's molybdenum supply comes from copper/molybdenum deposits located in the United States, Chile, and Peru, where molybdenum is produced as a by-product of copper production. Primary molybdenum deposits, typically found in China, the United States, and Canada, account for the largest portion of the remaining output.

Global roasting capacity as of May 2010 stood at approximately 618 Mlb of molybdenum. Roughly one-third of this capacity is in China, 25% in South America, 25% in North America, 8% in the European Union, 5% in the former Soviet Union, and less than 4% in Asia (excluding China).

At present there is sufficient global roasting capacity to roast CPM Group's molybdenum mine supply forecast through 2013, excluding idle capacity in China and scheduled expansions and new capacity. If additional capacity comes on line at select projects (Kwangyang, Mount Hope, Bingham Canyon, and Molymet's Inner Mongolia facility), then there should be nearly enough capacity—740 Mlb—for the projected period.

Molybdenum can be recycled from both steel and spent catalysts, but using molybdenum scrap versus "new" molybdenum is not always cost advantageous. Historically, scrap has not been consistently cheap enough or abundant enough relative to mined molybdenum to spur a significant shift away from primary material. Moreover, the recycling rates in developing countries are substantially lower than in OECD countries. As such, secondary supplies are not expected to threaten mine supplies over the next ten years, although recycling may increase with the trends in environmental sustainability.

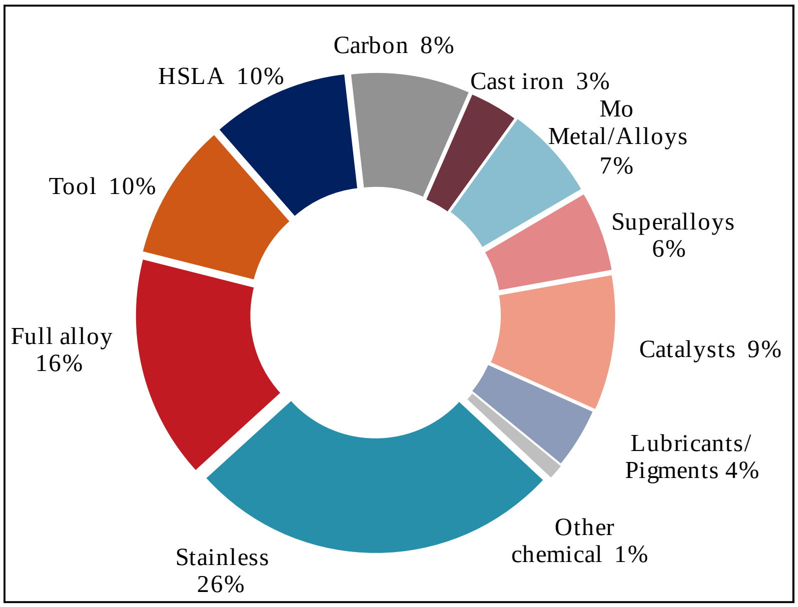
Molybdenum is commonly added to specialty and stainless steels because of its effectiveness as a hardening agent and also for its strength, toughness, and corrosion resistance. In inhospitable environments such as extreme temperatures, deep water, and other locations exposed to corrosive elements, molybdenum-bearing products are employed to optimize performance. Molybdenum's applications range from oil and gas pipelines and offshore infrastructure to industrial plants and automotive, ship, and aircraft components.

Molybdenum demand is heavily dependent on global steel consumption, with roughly 70% of molybdenum used in steel alloying. Other metallurgical uses such as superalloys and cast irons account for an additional 16% of total molybdenum demand. Non-metallurgical applications account for the remaining share. These specialty chemical end-users include catalysts for petroleum refining, lubricants, and pigments.

End uses for molybdenum are summarized in Figure 18-3.

Possible substitutes for molybdenum include chromium, manganese, nickel, vanadium, niobium, and boron in alloy steels; tungsten in tool steels; and graphite, tungsten, and tantalum for refractory materials in high-temperature electric furnaces. In catalysts, tungsten can replace molybdenum, albeit this substitution can create refining inefficiencies. Meanwhile, molybdenum has been subject to replacement in other chemical uses, such as lubricants and pigments. Substitution remains a threat for some molybdenum-bearing products, but a significant changeover to other metals is unlikely, as these are not perfect substitutes for most existing molybdenum applications. In addition, given their relative size, many of these substitute markets cannot support a large transition from the molybdenum market.

Figure 18-3: Molybdenum End Uses



Note: HSLA = High-strength, low-alloy steels

18.11.2 Price and Demand Forecasts (CPM Group)

CPM Group forecasts that molybdenum prices will continue to strengthen in 2011. While the market is projected to remain in a narrow surplus in 2011, expectations of approaching deficits may push molybdenum prices above $20. This upward price trend may stay intact in 2012 as the market reverts back to deficit. Rising back toward prices seen as recently as October 2008, real prices may average $28.50. Demand for molybdenum during the recovery in global economic growth may be robust despite higher molybdenum prices because demand is fairly inelastic. On the other hand, Chinese government holdings are assumed to be price elastic. The run-up in molybdenum prices in 2012 is expected to encourage some stock drawdowns.

In 2013 a 10.6% increase in mine production should move the market into a narrower deficit, as production begins to ramp up at some larger primary projects. Despite market conditions remaining tight in 2013, expectations of the approaching surplus could weigh on prices. Real prices may decline more than 12% from the previous year to average $25.00 in 2013.

The market may remain in a surplus from 2014 through 2019. Over this period real prices could drop swiftly to average $13.75/lb in 2015. With this correction in prices, supplies from high-cost producers are forecast to contract, offsetting the increase in mined output from new large primary producers. Prices may recover slightly in 2015, averaging $14.50. The economics for producers moderately improve at these prices, and growth in molybdenum mine supply is forecast to ease as investments in the sector slow down following two years of depressed prices.

Between 2017 and 2019 prices could average $16.57 as supply exceeds demand by roughly 17.9 Mlb/a, or 1.3 weeks measured in weeks of demand.

18.11.3 Kitsault Project Marketing

Avanti has entered into a Molybdenum Concentrate Tolling Agreement (MCTA) with Molibdenos y Metales S.A. (Molymet) of Chile for the life-of-mine molybdenum concentrate production at the company's Kitsault project. Within this agreement AKM has the option to reduce the molybdenum concentrate delivered to Molymet for processing to 80% of the total production in the event one of the company's strategic partners wants to take its 20% share in the form of molybdenum concentrate. The MCTA allows for the conversion of Kitsault molybdenum concentrates to technical-grade molybdenum oxide, which will meet the specifications of the London Metals Exchange (LME) and ferro-molybdenum. Molymet is a publicly owned Chilean corporation listed on the Santiago Stock Exchange and has been processing molybdenum concentrates since 1975. Molymet has production facilities in Chile, Mexico, Belgium, Germany and China and treats approximately 180 Mlb/a of molybdenum in concentrates at its various facilities, representing approximately 35% of world molybdenum consumption.

Avanti has determined that the best strategy for selling the processed molybdenum concentrate produced from the Kitsault mine is to enter into off-take agreements with several selected end-users of the product. Terms of these off-take agreements would vary depending on project financing conditions. For instance, during the period of project debt repayment, a portion of the off-take may require a price protection mechanism (floor price) to ensure debt repayment. It is expected that, in return for committing to this floor price, the purchaser would receive a discount to the spot price. Although Avanti has entered an off-take commitment Letter of Intent (AVT Press

Release 19 October 2010) with one potential purchaser, consisting of 10% of production for the first four years with an option to increase to 20%, the terms have not yet been finalized. After the project financing has been discharged, off-take agreements would be indexed to a spot price. Discussions with several other parties are in progress at the time of preparation of this Report.

18.12 Taxation

Taxation considerations included in the financial model (see Section 18.13) comprise Provincial and Federal corporate income taxes and BC Mineral taxes as determined using a taxation model provided by PricewaterhouseCoopers LLP ("PwC").

The following discussion outlines the main Federal and Provincial taxation considerations for mining ventures in BC:

- Federal taxes: Includes income tax, customs duties, fuel taxes, payroll taxes and transaction taxes. The general rate of Federal income tax on active business income earned by a corporation for 2011 is 16.5% and is legislated to decrease to 15% starting in 2012. Federal income tax is included in the PwC taxation model. Other Federal taxes are included elsewhere in the model as part of operating costs.
- Provincial income tax: The general rate of BC Provincial income tax on active business income earned by a corporation in the Province is 10%. BC income tax is included in the PwC taxation model.
- Provincial mineral taxes: The BC Mineral Tax provides for the Crown's financial share of mineral production in two ways. The primary way is to receive 13% of a producer's profit that is in excess of a normal return on investment over the life of a mine. This is referred to as Net Revenue Tax. To minimize any disincentive to investment, the Province does not receive this share until the producer's investment and a reasonable return on it have been recovered. The second way is to receive 2% of operating cash flow from production in each year. This is referred to as Net Current Proceeds Tax. It is intended to provide compensation for depletion of the resource when production yields less than a reasonable profit for the producer. So that only one or the other share is paid, Net Current Proceeds Tax is fully creditable against Net Revenue Tax. BC Mineral Tax is included in the PwC taxation model.
- Sales tax: Harmonized Sales Tax (HST) is a combined federal and provincial value-added tax. The rate for this tax in BC is currently 12%. HST is charged on most sales and paid on most costs. However, revenue from mineral production that is exported out of Canada is "zero-rated" under the tax, and HST paid on costs

is fully recoverable by all but the end user. As a result, HST will have no net impact on the Kitsault Project. HST is not included in the PwC taxation model.

18.13 Financial Analysis

The results of the economic analysis represent forward-looking information that is subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented here.

The project has been evaluated using a discounted cash flow (DCF) analysis. Cash inflows consist of annual revenue projections for the mine. Cash outflows such as capital, including the two years of preproduction costs, operating costs, taxes, and royalties are subtracted from the inflows to arrive at the annual cash flow projections.

To reflect the time value of money, annual net cash flow (NCF) projections are discounted back to the project valuation date using several discount rates. The discount rate appropriate to a specific project depends on many factors, including the type of commodity; and the level of project risks, such as market risk, technical risk and political risk. The discounted, present values of the cash flows are summed to arrive at the project's net present value (NPV).

In addition to NPV, internal rate of return (IRR) and payback period are also calculated. The IRR is defined as the discount rate that results in an NPV equal to zero. Cash flows are taken to occur at the end of each period. Capital cost estimates have been prepared for initial development and construction of the project, and ongoing operations (sustaining capital).

The resulting net annual cash flows are discounted back to the date of valuation end-of-year 2010 dollars, and totalled to determine NPVs at the selected discount rates. The IRR is calculated as the discount rate that yields a zero NPV. The payback period is calculated as the time needed after the start up of operations to recover the initial capital spent.

18.13.1 Basis of Analysis

The following assumptions were made for the purposes of the financial analysis:

- A total of 232.7 Mt mined through open pit methods.
- Average process rate of 14.6 Mt per year.
- Assumed Mo average LOM recovery of 89.9%, and Mo recovered to concentrate totalled 373,759 klb.

- Transport charges based on truck transport to Prince Rupert and overseas shipping of the concentrate to Chile or Belgium at a cost of CDN$0.23/lb of molybdenum in the concentrate.
- Applicable metal prices varied from a high of US$18.25/lb in the first year of production (2014), dropped to US$13.75/lb in 2015 and then underwent a continual annual increase up to US$17.20/lb in 2019. From 2019 onwards a constant price of $17.20/lb was used in the financial analysis through to the end of the mine life.
- A long-term exchange rate forecast of CDN$1.00 = US$0.92 provided by Avanti, and based on data received from the Bank of Montreal was used for conversion of metal values and costs quoted in US dollars.
- LOM operating cost estimate of $5.17/lb Mo recovered.
- Initial capital costs estimated at CDN$837 million for the mine construction phase
- Sustaining capital estimated at CDN$54 million (including reclamation costs)
- Two royalties are payable. The first is 1% of the net smelter return payable under the ALI Agreement, and the second a 9.22% royalty known as the "1984 Royalty Agreement" payable on positive pre-tax cash flow after the recovery of capital and operating expenditures. Over the life of the mine, the ALI Agreement royalty pay-out will be CDN$64 million and the 1984 Royalty Agreement will pay-out CDN$290 million at the molybdenum prices projected in the base case.
- Working capital reaches a maximum of CDN$31.7 million in the first year of operation.
- Decommissioning, reclamation and post closure costs were estimated by SRK in 2029 dollars to be CDN$31.4 million (NPV of post closure activities discounted to 2029). Decommissioning and reclamation costs are estimated to be incurred over a period of three years after the end of production and environmental monitoring is estimated to continue into perpetuity. For purposes of the financial analysis these costs were assumed to be incurred (without further discounting) over a four year period including two years of construction and the first two years of production to cover bonding requirements for these post-closure activities.
- The base case economic analysis assumes constant prices with no inflationary adjustments. The base case economic analysis is based on 100% equity financing
- Capital and operating costs are based on third quarter 2010 Canadian dollars.

18.13.2 Results of Financial Analysis

The pre-tax NPV @ 8% is CDN$1,325 million with an IRR of 31.8%. The cash flow analysis shows that the project will generate a positive cash flow in all years except Year -2 and Year -1 on a pre and after tax basis.

After tax results of the financial analysis indicate an NPV @ 8% of CDN$863 million and an IRR of 26.8% with a payback period of 2.6 years after two years of construction. Results of the financial analysis summarized in Table 18-10, and provided on an annual basis in Table 18-11. Years shown in Table 18-11 are for illustrative purposes only, as statutory permits are required to be granted prior to mine commencement.

Table 18-10: Summary Results of Financial Analysis

Item	Unit	Value
Pre-Tax		
IRR	%	31.8%
CNCF	CDN$000	3,185
NPV 8%	CDN$000	1,325
NPV 10%	CDN$000	1,056
Payback	years	2.6
After Tax		
IRR	%	26.8%
CNCF[1]	CDN$000	2,143
NPV 8%	CDN$000	863
NPV 10%	CDN$000	684
Payback	years	2.6

Note: CNCF = Cumulative Net Cash Flow

18.14 Sensitivity Analysis

Sensitivity analysis was performed using the CPM Group's base case metal prices assessing variations in the metal price, operating cost, CDN/US exchange rate and mining cost. Analysis shows that the Kitsault project is most sensitive to changes in molybdenum price and the exchange rate, as these items directly affect the revenue stream. Results of the sensitivity analysis are included as Table 18-12. The sensitivity analysis shows that the project is also sensitive, but less so, to capital expenditure and operating cost (Figure 18-4).

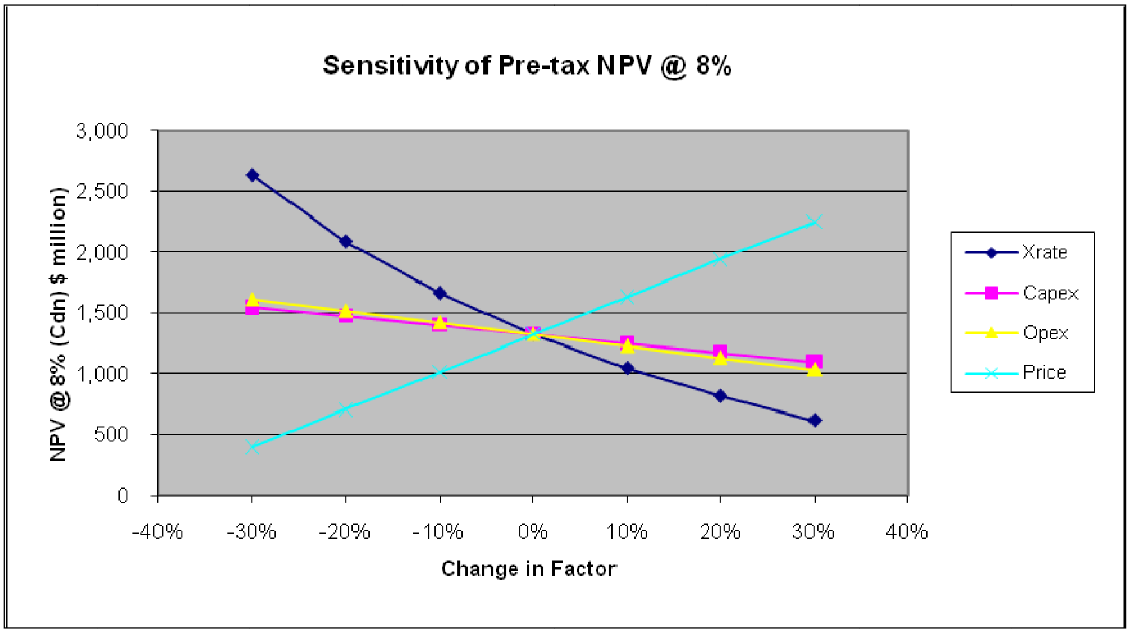
Table 18-11: Cashflow Statement

			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
			-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Capital																				
Development Capital	C$000	(837,000)	(334,800)	(502,200)																
Sustaining Capital	C$000	(85,174)	(15,684)	(5,228)	(12,263)	(11,960)	(2,033)	(7,956)	(3,117)	(4,609)	(2,649)	(3,683)	(2,634)	(4,829)	(2,013)	(2,314)	(2,189)	(2,013)		
Environmental Bond	C$000																			
Total Capital	C$000	(922,174)	(350,484)	(507,428)	(12,263)	(11,960)	(2,033)	(7,956)	(3,117)	(4,609)	(2,649)	(3,683)	(2,634)	(4,829)	(2,013)	(2,314)	(2,189)	(2,013)		
Prices																				
Mo Price	C$/lb				19.8	14.9	15.8	17.4	17.9	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
Mining Production																				
Waste mined	kt	169,729			19,910	22,940	21,375	13,315	15,349	14,136	12,675	12,725	11,061	8,125	6,523	5,360	3,657	2,103	475	
Snow Mined	kt	1,945			89	112	184	181	142	154	137	142	138	134	131	127	123	108	21	21
Ore to Crusher	kt	205,469			13,836	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	1,833	
Ore to Stockpile	kt	26,843			3,801	4,126	3,088	5,969	2,833	2,581	2,087	1,043	1,024	291						
Ore from Stockpile	kt	27,205			193														12,767	14,245
Total Material	kt	431,191			37,829	41,778	39,247	34,065	32,924	31,471	29,499	28,510	26,823	23,150	21,254	20,087	18,380	16,811	15,096	14,266
Mo Grade	%				0.10%	0.11%	0.11%	0.09%	0.10%	0.10%	0.09%	0.08%	0.08%	0.07%	0.07%	0.07%	0.08%	0.08%	0.04%	0.03%
Mo Recovery	%				91.45%	91.59%	92.14%	90.24%	90.86%	90.83%	90.32%	89.64%	89.46%	88.92%	88.72%	88.22%	89.38%	89.60%	83.67%	82.37%
Transportation																				
Freight & handling	C$000	(85,875)			(6,736)	(7,159)	(7,740)	(5,903)	(6,448)	(6,418)	(5,968)	(5,413)	(5,278)	(4,887)	(4,747)	(4,421)	(5,215)	(5,382)	(2,300)	(1,860)
Mill Feed																				
Ore from Pit	kt	205,469			13,836	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	1,833	
Ore from Stockpile	kt	27,205			193														12,767	14,245
Total Mill Feed	kt	232,674			14,029	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,245
Returned Mo																				
Contained Mo	Klbs	373,759			29,317	31,158	33,687	25,692	28,064	27,935	25,976	23,559	22,973	21,271	20,659	19,243	22,696	23,424	10,012	8,093
Transportation losses	Klbs	(374)			(29)	(31)	(34)	(26)	(28)	(28)	(26)	(24)	(23)	(21)	(21)	(19)	(23)	(23)	(10)	(8)
Delivered to roaster	Klbs	373,386			29,287	31,127	33,653	25,666	28,036	27,907	25,950	23,535	22,950	21,249	20,638	19,224	22,673	23,401	10,002	8,085
Metal value																				
Delivered Mo	C$000	6,743,811			580,973	465,218	530,404	446,370	502,820	521,745	485,158	440,005	429,059	397,272	385,839	359,410	423,896	437,491	186,991	151,159
Metal deduction	C$000	(67,438)			(5,810)	(4,652)	(5,304)	(4,464)	(5,028)	(5,217)	(4,852)	(4,400)	(4,291)	(3,973)	(3,858)	(3,594)	(4,239)	(4,375)	(1,870)	(1,512)
Roasting charge	C$000	(200,898)			(15,758)	(16,748)	(18,107)	(13,810)	(15,085)	(15,015)	(13,962)	(12,663)	(12,348)	(11,433)	(11,104)	(10,343)	(12,199)	(12,591)	(5,381)	(4,350)
Freight & handling	C$000	(85,875)			(6,736)	(7,159)	(7,740)	(5,903)	(6,448)	(6,418)	(5,968)	(5,413)	(5,278)	(4,887)	(4,747)	(4,421)	(5,215)	(5,382)	(2,300)	(1,860)
Net smelter return	C$000	6,389,600			552,670	436,659	499,253	422,194	476,259	495,093	460,376	417,529	407,142	376,979	366,130	341,051	402,243	415,144	177,440	143,438
Operating costs																				
Mining Cost	C$000	(573,954)			(41,896)	(45,147)	(43,729)	(41,695)	(43,281)	(42,719)	(42,138)	(41,904)	(40,068)	(36,975)	(36,256)	(36,122)	(33,585)	(29,707)	(10,742)	(7,990)
Milling Cost	C$000	(1,102,207)			(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(68,993)	(67,315)
G & A Cost	C$000	(252,984)			(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,836)	(15,451)
Total Cost	C$000	(1,929,145)			(126,725)	(129,975)	(128,558)	(126,523)	(128,109)	(127,548)	(126,966)	(126,733)	(124,896)	(121,804)	(121,085)	(120,950)	(118,413)	(114,535)	(95,570)	(90,755)
Net Revenue before Tax, Royalties	C$000	4,460,454			425,945	306,683	370,696	295,671	348,150	367,546	333,409	290,797	282,246	255,175	245,046	220,100	283,829	300,609	81,870	52,682
Royalty Payments																				
NSR Royalty	C$000	(63,896)			(5,527)	(4,367)	(4,993)	(4,222)	(4,763)	(4,951)	(4,604)	(4,175)	(4,071)	(3,770)	(3,661)	(3,411)	(4,022)	(4,151)	(1,774)	(1,434)
Pre-Tax Cash Royalty	C$000	(289,502)					(18,172)	(25,982)	(29,863)	(29,113)	(26,532)	(23,031)	(22,429)	(20,081)	(19,495)	(17,470)	(22,591)	(23,952)	(6,567)	(4,226)
Net Revenue before Tax	C$000	4,107,057			420,418	302,317	347,532	265,467	313,525	333,482	302,274	263,591	255,746	231,324	221,890	199,220	257,215	272,506	73,528	47,022
Income Tax (Calculated - from other sheet)																				
Corporate Tax	C$000	(643,976)					(6,185)	(59,039)	(68,594)	(68,119)	(62,113)	(54,419)	(53,096)	(48,186)	(46,255)	(41,622)	(54,194)	(57,583)	(15,036)	(9,534)
Provincial Resources Tax	C$000	(398,349)			(8,519)	(6,134)	(7,414)	(5,913)	(21,140)	(47,182)	(42,999)	(37,325)	(36,350)	(32,545)	(31,594)	(28,312)	(36,613)	(38,817)	(10,643)	(6,849)
Mining License Fee	C$000																			
Municipal Tax	C$000																			
Total Tax	C$000	(1,042,325)			(8,519)	(6,134)	(13,599)	(64,953)	(89,735)	(115,301)	(105,112)	(91,743)	(89,446)	(80,731)	(77,850)	(69,934)	(90,808)	(96,400)	(25,679)	(16,382)
Revenue after Tax & Royalties	C$000	3,034,092			411,899	296,183	333,933	200,514	223,790	218,181	197,162	171,847	166,300	150,593	144,040	129,286	166,408	176,105	47,850	30,640
Capital expenditure																				
Construction	C$000	(837,000)	(334,800)	(502,200)																
Sustaining/Bonding	C$000	(85,174)	(15,684)	(5,228)	(12,263)	(11,960)	(2,033)	(7,956)	(3,117)	(4,609)	(2,649)	(3,683)	(2,634)	(4,829)	(2,013)	(2,314)	(2,189)	(2,013)		
Working capital	C$000	0			(31,681)	(813)	354	509	(397)	140	145	58	459	773	180	34	634	970	4,741	23,892
Total	C$000	(922,174)	(350,484)	(507,428)	(43,944)	(12,773)	(1,679)	(7,447)	(3,514)	(4,469)	(2,504)	(3,625)	(2,175)	(4,056)	(1,833)	(2,280)	(1,555)	(1,043)	4,741	23,892
After Tax Net Cash Flow	C$000	2,142,558	(350,484)	(507,428)	367,955	283,411	332,254	193,067	220,277	213,713	194,658	168,223	164,125	146,537	142,207	127,006	164,853	175,062	52,591	54,532
Pre - Tax Net Cash Flow	C$000	3,184,883	(350,484)	(507,428)	376,474	289,544	345,853	258,019	310,011	329,014	299,770	259,966	253,571	227,268	220,056	196,940	255,661	271,462	78,270	70,914

Table 18-12: Results of Sensitivity Analysis

	Change in Factor						
Sensitivity of Pre-tax NPV @ 8%	**-30%**	**-20%**	**-10%**	**0%**	**10%**	**20%**	**30%**
Factor							
Exchange rate	2,635	2,089	1,665	1,325	1,047	814	618
Capital expenditure	1,550	1,475	1,400	1,325	1,250	1,174	1,099
Operating expenditure	1,614	1,517	1,421	1,325	1,228	1,132	1,036
Metal price	396	706	1,016	1,325	1,634	1,942	2,251

Figure 18-4: Sensitivity Analysis



A major financial risk for the Project is its sensitivity to metal prices. Metal prices used in the analysis were based on values provided by the CPM Group. Another significant financial risk is the fluctuation in foreign exchange rates between the US and Canadian dollars. This is due to the Project revenues being derived from the sale of molybdenum in US dollars while much of the expenses will be incurred in Canadian dollars. In this analysis the fluctuations in exchange rates are equal in magnitude to fluctuations in the metal price as the metal values are quoted in US dollars. Operating expenditures present the next greatest sensitivity to the Project. However, the extent to which a change in operating expenditure affects the changes in NPV is not as significant as changes in the metal price or foreign exchange rates.

Additional metallurgical testwork is required to assess the potential for recovery of silver. Depending on the outcome of this future testwork, the Project may have the opportunity to generate additional revenue through production of a silver-rich concentrate.

18.15 Risk and Opportunity Analysis

As part of the feasibility study work, a risk assessment workshop was carried out at the AMEC Vancouver office. The purpose of the workshop was to identify and categorize the key potential risks and opportunities associated with re-opening the Kitsault mine, based upon available information at the feasibility study stage.

The three highest ranked risks were:

- Safety issues associated with traffic along the site access road (wildlife/vehicle collisions, road shared with logging traffic and public
- A low capital cost estimate understating true project costs by 15%
- Reliance on BC Hydro for the timely supply of power.

The first two risk items should be able to be mitigated with pragmatic planning and quality control measures. The last item could be more difficult to address, since it is out of Avanti's direct control. However, negotiated power supply contracts with BC Hydro could be pursued to reduce this concern.

The most promising opportunity identified was related to improvement in waste rock management practices and the location of waste rock management facilities (WRMFs). This has been evaluated since the workshop, and the WRMFs have been consolidated into one location adjacent to the southwest tailings embankment.

19.0 OTHER RELEVANT DATA AND INFORMATION

There are no additional data relevant to the Project.

20.0 INTERPRETATION AND CONCLUSIONS

In the opinion of the QPs, the following interpretations and conclusions are appropriate to the Project:

- Legal opinion provided to AMEC indicates that the mining tenure held by Avanti in the Project area is valid, and sufficient to support declaration of Mineral Resources and Mineral Reserves.
- Avanti has advised AMEC that Avanti holds sufficient surface rights in the Project area to support the mining operations
- Three permits were acquired with the Project from ALI, a remediation permit, a forest roads access permit, and a special usage permit. These support reclamation monitoring activities and Project access. Reclamation of the 1980s mining operation was completed in 2006; ongoing monitoring is still being performed
- Avanti will need to apply for additional permits as appropriate under local, Provincial, and Federal laws to allow mining operations. The primary BC authorization for the development of the Kitsault mine project is a permit under the provincial Mines Act
- The Project has been designated a “reviewable project” under the BC EAA, and requires an environmental assessment certificate. A draft AIR to complete an EA has been submitted. A Section 11 order has been received from the BC Government: with the Section 11 order, Avanti can move to finalize the AIR. Avanti has begun the Federal CEA process with the submittal of a Project Description. Avanti anticipates filing an EA with the Provincial and Federal regulatory agencies during the first half of 2011
- Two royalties are payable. The first is 1% of the net smelter return payable under the ALI Agreement, and the second a 9.22% royalty known as the “1984 Royalty Agreement” payable on positive pre-tax cash flow after the recovery of capital expenditures
- The existing and planned infrastructure, availability of staff, the existing power, water, and communications facilities, the methods whereby goods are transported to the mine, and any planned modifications or supporting studies are well-established, or the requirements to establish such, are well understood by Avanti, and can support the declaration of Mineral Resources and Mineral Reserves
- The geologic understanding of the deposit settings, lithologies, and structural and alteration controls on mineralization is sufficient to support estimation of Mineral Resources and Mineral Reserves

- The mineralization style and setting is well understood and can support declaration of Mineral Resources and Mineral Reserves for the Kitsault deposit. Knowledge of the Bell Moly and Roundy Creek deposits is at a prospect-stage as the data available are from legacy work
- Work completed on the Project included two phases of open pit mining, and rehabilitation, geochemical sampling, minor underground development, mineral resource estimation, core drilling including geotechnical, hydrological, confirmation and condemnation drill holes, evaluation and interpretation of legacy data, baseline environmental studies, metallurgical testwork, and engineering and design studies. Completed exploration and mine development programs were appropriate to the mineralization style. To date, an ore deposit and two exploration targets have been identified
- Sampling methods are acceptable, meet industry-standard practice, and are acceptable for Mineral Resource and Mineral Reserve estimation purposes
- The quality of the analytical data used in Mineral Resource and Mineral Reserve estimation is reliable and sample preparation, analysis, and security are generally performed in accordance with exploration best practices and industry standards. Historic data used in estimation have been appropriately verified for support of estimation
- Metallurgical testwork completed in support of the two phases of mine production, and information gained during the two mining phases showed that the mineralization is amenable to being processed using conventional technologies, and acceptable recoveries were returned. Testwork completed by Avanti comprised comminution and flotation tests. Metallurgical testwork completed on the Project has been appropriate to establish a process route that is applicable to the mineralization types and performed on samples that were representative of the mineralization
- Process design is for a concentrator with a nominal processing capacity of 40,000 t/d of ore from the open pit, and is based on conventional technology and proven equipment. The design of the Kitsault process plant is based on plant data obtained from previous operating periods as well as more recent testwork campaigns on samples of quartz monzonite, diorite, and hornfels. These samples originate from the area designated as potential plant feed material indicated in the mine plan to have an ore feed grade of approximately 0.09% Mo
- Past production and current testwork results have shown that saleable molybdenum flotation concentrates can be produced by the use of conventional comminution and flotation processes. The plant feed will be crushed and milled, then subjected to flotation. The resulting concentrate will be leached to remove the

lead impurity, thereby producing a high-grade saleable molybdenum concentrate that meets smelter specifications. The final concentrate is expected to contain 52% Mo and <0.04% lead, for an overall molybdenum recovery of 89.9%

- Additional metallurgical testwork is required to assess the potential for recovery of silver. Dependent on the outcome of this future testwork the Project may have the opportunity to generate additional revenue producing a silver-rich concentrate
- Mineral Resources and Mineral Reserves, which were estimated using core drill data, have been performed to industry best practices, and conform to the requirements of CIM Definition Standards (2005). Reviews of the environmental, permitting, legal, title, taxation, socio-economic, marketing and political factors and constraints for the Project support the declaration of Mineral Reserves using the set of assumptions outlined
- The proposed open pit mining method is appropriate to the style of mineralization
  - Mining will proceed using a conventional truck-and-shovel fleet
  - Production forecasts are achievable with the proposed equipment and plant
  - The predicted mine life of 16 years is achievable based on the projected annual production rate and the Mineral Reserves estimated
  - There is some upside for the Project if the Inferred Mineral Resources that are identified within the LOM production plan can be upgraded to higher confidence Mineral Resource categories
- Avanti has a MCTA with Molymet of Chile for the life-of-mine molybdenum concentrate production. Avanti retains an option to reduce the molybdenum concentrate delivered to Molymet for processing to 80% of the total production if required
- Taxation considerations include provincial and federal corporate income taxes and BC Mineral taxes as determined using a taxation model provided by PricewaterhouseCoopers LLP
- Capital cost and operating cost estimates are appropriate for the economic circumstances existing at the time they were supplied
- The economic analysis shows that overall NPV is positive for the sets of assumptions considered
- Sensitivity analysis shows that the Kitsault Project is most sensitive to changes in molybdenum price and the exchange rate, as these items directly affect the revenue stream. The Project is also sensitive, but less so, to capital expenditure and operating cost.

In the opinion of the QPs, the Project that is outlined in this Report has met its objectives in that mineralization has been identified that can support estimation of Mineral Resources and Mineral Reserves, and there was sufficient additional scientific and technical information to allow the completion of a more detailed study at feasibility level to support potential mine development.

A decision to proceed with development will require appropriate permits, and approval by both relevant statutory authorities and Avanti's board.

21.0 RECOMMENDATIONS

Recommendations for additional work are based on a two-phase work program. Work phases are independent of each other, and can be conducted concurrently. The first phase consists of recommendations to support detailed project design. The second phase consists of exploration drilling. The first program is estimated to cost approximately CDN$875,000 and the second phase is estimated to cost approximately CDN$2 million.

21.1 Phase 1

21.1.1 Geotechnical Work Recommendations

- Geotechnical site investigations in the foundations of the South and Northeast Embankments to establish the depth and extent of curtain grouting
- Geotechnical site investigations in the foundation of the plant site and the cut of the conveyor corridor
- Volumetric and material size distribution investigations in the existing Patsy WRF for evaluation as a suitable construction rockfill borrow area
- Rheological testing, and confirmatory particle size distributions, and slurry consolidation and settling tests of each tailings stream

This work will consist of a combination of onsite and laboratory testwork, and is estimated to cost CDN$500,000.

21.1.2 Metallurgical Testwork Recommendations

- Regrind testwork is recommended to ensure that sufficient regrind capacity exists to deal with variations in primary ore hardness and variable liberation size required. Avanti should budget for approximately CDN$50,000 to confirm regrind targets.
- Locked cycle testwork will be needed to confirm target recovery and final concentrate grades will be attained. Avanti should budget for approximately CDN$100,000 to confirm locked cycle performance on the reserve samples left from the 2011 work.
- Lead leaching testwork will have to be performed to ensure that premium grade molybdenum will be produced for sale to the roaster. Avanti should budget for approximately CDN$200,000 to further develop leach plant design criteria.
- Settling testwork of intermediate and final products should allow the optimization of the design and could lead to the reduction of costs associated with settling

requirements in the plant. Avanti should budget CDN$25,000 for this work which will be done on the locked-cycle products.

21.2 Phase 2

An exploration program is recommended to test exploration potential remaining in the Patsy Creek area, and in the northwest corner of the deposit, as follows:

- 3,000–4,000 m of drilling in 11 NQ holes is warranted in the northwest corner of the deposit. Estimated cost is CDN$1 million
- 3,000–4,000 m of drilling in 17 NQ holes is warranted in the that is beneath and south of Patsy Creek. Estimated cost is CDN$1 million

The estimated total cost of the exploration program is CDN$2 million.

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23.0 DATE AND SIGNATURE PAGE

The effective date of this Technical Report, entitled “Avanti Mining Inc. Kitsault Molybdenum Project British Columbia, Canada NI 43-101 Technical Report on Feasibility Study” is 15 December, 2010.

“signed and sealed”

Gary Christie, P.Eng. Dated: 27 January, 2011

“signed and sealed”

Greg Kulla, P.Geo. Dated: 27 January, 2011

“signed and sealed”

Ryan Ulansky, P.Eng. Dated: 27 January, 2011

“signed and sealed”

Tony Lipiec, P.Eng. Dated: 27 January, 2011

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Peter Healey, P.Eng. Dated: 27 January, 2011

“signed and sealed”

Michael Levy, P.Eng. Dated: 27 January, 2011

“signed and sealed”

Bruno Borntraeger P.Eng Dated: 27 January, 2011

Appendix A: Claims Table

Tenure Number	Claim Name	Owner	Tenure Sub Type	Map Number	Issue Date	Good To Date	Term Expiry Date	Area (ha)	Title Type	1976 Royalties	1984 Royalty	ALI Agreement	TA Agreement	NC Agreement	Lien	Writ
250340	R #1	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		150	Four post claim (MC4)	A		C				
250341	R #2	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		100	Four post claim (MC4)	A		C				
250342	R #3	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		100	Four post claim (MC4)	A		C				
250343	R #4	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		150	Four post claim (MC4)	A		C				
250344	R #5	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		150	Four post claim (MC4)	A		C				
250345	G #8	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		225	Four post claim (MC4)	A		C				
250346	G #9	Avanti (100%)	Claim	103P044	1975/jul/24	2020/mar/10		100	Four post claim (MC4)	A		C				
250347	FUBAR 2	Avanti (100%)	Claim	103P044	1975/aug/08	2020/mar/10		225	Four post claim (MC4)	A		C				
250390	FUBAR 3	Avanti (100%)	Claim	103P044	1975/oct/22	2020/mar/10		75	Four post claim (MC4)	A		C				
250391	FUBAR 4	Avanti (100%)	Claim	103P044	1975/oct/22	2020/mar/10		100	Four post claim (MC4)	A		C				
250458	ALICE	Avanti (100%)	Claim	103P043	1977/nov/10	2020/mar/10		300	Four post claim (MC4)			C				
250508	BLUE 1 FR.	Avanti (100%)	Claim	103P043	1978/may/24	2020/mar/10		25	Fractional Claim (MCF)			C				
250512	BLUE 5	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		100	Four post claim (MC4)			C				
250513	BLUE 4	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		225	Four post claim (MC4)			C				
250514	BLUE 3	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		25	Four post claim (MC4)			C				
250515	BLUE 1	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		225	Four post claim (MC4)			C				
250516	BLUE 2	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		250	Four post claim (MC4)			C				
250517	BLUE 4 FR.	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		25	Fractional Claim (MCF)			C				
250578	BLUE 2 FR.	Avanti (100%)	Claim	103P043	1978/jul/21	2020/mar/10		25	Fractional Claim (MCF)			C				
250579	BLUE 3 FR.	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		25	Fractional Claim (MCF)			C				
250612	BLUE 5 FR.	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		25	Fractional Claim (MCF)			C				
250613	BLUE 6 FR.	Avanti (100%)	Claim	103P043	1978/jul/06	2020/mar/10		25	Fractional Claim ((MCF)			C				
250685	SNOWBOUND	Avanti (100%)	Claim	103P044	1979/may/18	2020/mar/10		200	Four post claim (MC4)			C				
250991	CLARY 1	Avanti (100%)	Claim	103P044	1981/jul/13	2020/mar/10		500	Four post claim (MC4)			C				
250992	CLARY 2	Avanti (100%)	Claim	103P043	1981/jul/13	2020/mar/10		100	Four post claim (MC4)			C				
251157	JC FR.	Avanti (100%)	Claim	103P043	1984/may/07	2020/mar/10		25	Fractional Claim (MCF)			C				
254543		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	12.29	Mining Lease (ML)		B	C				
254544		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	12.29	Mining Lease (ML)		B	C				
254545		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	11.71	Mining Lease (ML)		B	C				
254546		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	16	Mining Lease (ML)		B	C				
254547		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	9.19	Mining Lease (ML)		B	C				
254548		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	12.8	Mining Lease (ML)		B	C				
254549		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	15.55	Mining Lease (ML)		B	C				
254550		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	13.76	Mining Lease (ML)		B	C				
254551		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.23	Mining Lease (ML)		B	C				
254552		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.84	Mining Lease (ML)		B	C				
254553		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	20.75	Mining Lease (ML)		B	C				
254554		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	15.72	Mining Lease (ML)		B	C				
254555		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	18.07	Mining Lease (ML)		B	C				
254556		Avanti (100%)	Lease	103P043	1967/feb/25	2011/feb/23	2013/feb/23	17.98	Mining Lease (ML)		B	C				
254557		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	20.9	Mining Lease (ML)		B	C				
254558		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	18	Mining Lease (ML)		B	C				
254559		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.21	Mining Lease (ML)		B	C				

Tenure Number	Claim Name	Owner	Tenure Sub Type	Map Number	Issue Date	Good To Date	Term Expiry Date	Area (ha)	Title Type	1976 Royalties	1984 Royalty	ALI Agreement	TA Agreement	NC Agreement	Lien	Writ
254560		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	6.24	Mining Lease (ML)		B	C				
254561		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	8.85	Mining Lease (ML)		B	C				
254562		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.71	Mining Lease (ML)		B	C				
254563		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	17.98	Mining Lease (ML)		B	C			L	W
254564		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	3.28	Mining Lease (ML)		B	C				
254565		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.28	Mining Lease (ML)		B	C				
254566		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	16.87	Mining Lease (ML)		B	C				
254567		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	5.58	Mining Lease (ML)		B	C				
254568		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	16.98	Mining Lease (ML)		B	C				
254569		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	16.96	Mining Lease (ML)		B	C			L	W
254570		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	16.93	Mining Lease (ML)		B	C				
254571		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	20.4	Mining Lease (ML)		B	C			L	W
254572		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.85	Mining Lease (ML)		B	C				
254573		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	20.9	Mining Lease (ML)		B	C			L	W
254574		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	16.73	Mining Lease (ML)		B	C				
254575		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	8.34	Mining Lease (ML)		B	C				
254576		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.81	Mining Lease (ML)		B	C			L	W
254577		Avanti (100%)	Lease	103P043	1967/feb/23	2011/feb/23	2013/feb/23	19.24	Mining Lease (ML)		B	C				
254670	ROUNDY	Avanti (100%)	Claim	103P043	1956/sep/18	2020/mar/10		25	Two Post Claim (MC2)			C				
254671	ROUNDY NO.1	Avanti (100%)	Claim	103P043	1956/sep/18	2020/mar/10		25	Two Post Claim (MC2)			C				
254672	ROUNDY NO.2	Avanti (100%)	Claim	103P043	1956/sep/18	2020/mar/10		25	Two Post Claim (MC2)			C				
254673	ROUNDY NO.3	Avanti (100%)	Claim	103P043	1956/sep/18	2020/mar/10		25	Two Post Claim (MC2)			C				
254715	LEE NO. 2	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254716	LEE NO. 23	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254717	LEE NO. 24	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254718	LEE NO. 25	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254719	LEE NO. 26	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254720	LEE NO. 27	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254721	LEE NO. 28	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254722	LEE NO. 29	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254723	LEE NO. 30	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254724	LEE NO. 31	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254725	LEE NO. 32	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254726	LEE NO. 33	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254727	LEE NO. 34	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254728	LEE NO. 35	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254729	LEE NO. 36	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254730	LEE NO. 37	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254731	LEE NO. 38	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254732	LEE NO. 39	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254733	LEE NO. 40	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254734	LEE NO. 41	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254735	LEE NO. 42	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254736	LEE NO. 43	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254737	LEE NO. 44	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				

Tenure Number	Claim Name	Owner	Tenure Sub Type	Map Number	Issue Date	Good To Date	Term Expiry Date	Area (ha)	Title Type	1976 Royalties	1984 Royalty	ALI Agreement	TA Agreement	NC Agreement	Lien	Writ
254738	LEE NO. 45	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254739	LEE NO. 46	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254740	LEE NO. 47	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254741	LEE NO. 48	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254742	LEE NO. 49	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254743	LEE NO. 50	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254744	LEE NO. 51	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254745	LEE NO. 52	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254746	LEE NO. 53	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254747	LEE NO. 54	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254748	CANYON FR.	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Fractional Claim (MCF)			C				
254749	CREEK FR.	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Fractional Claim (MCF)			C				
254750	LEE NO. 1	Avanti (100%)	Claim	103P043	1959/oct/16	2020/mar/10		25	Two Post Claim (MC2)			C				
254752	I.W. NO.3	Avanti (100%)	Claim	103P043	1959/sep/03	2020/mar/10		25	Two Post Claim (MC2)			C				
254753	I.W. NO.6	Avanti (100%)	Claim	103P043	1959/sep/03	2020/mar/10		25	Two Post Claim (MC2)			C				
254754	I.W. NO.7	Avanti (100%)	Claim	103P043	1959/sep/03	2020/mar/10		25	Two Post Claim (MC2)			C				
254755	I.W. NO.10	Avanti (100%)	Claim	103P043	1959/sep/03	2020/mar/10		25	Two Post Claim (MC2)			C				
254764	ACCESS #1 FR.	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Fractional Claim (MCF)			C				
254765	ACCESS NO.11	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254766	ACCESS NO.12	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254767	ACCESS NO.13	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254768	ACCESS NO.14	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254769	ACCESS NO.15	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254770	ACCESS NO.16	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254771	ACCESS NO.17	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254772	ACCESS NO.18	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254777	ACCESS #2	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254778	ACCESS #6	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254779	ACCESS #8	Avanti (100%)	Claim	103P043	1960/jul/06	2020/mar/10		25	Two Post Claim (MC2)			C				
254955	KENNCO ACCESS NO.19	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254956	KENNCO ACCESS NO.20	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254957	KENNCO ACCESS NO.21	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254958	KENNCO ACCESS NO.22	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254959	KENNCO ACCESS NO.23	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254960	KENNCO ACCESS NO.24	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254961	KENNCO ACCESS NO.25	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254962	KENNCO ACCESS NO.26	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
254963	KENNCO ACCESS NO.27	Avanti (100%)	Claim	103P043	1963/sep/16	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255024	ACCESS NO.28	Avanti (100%)	Claim	103P043	1965/mar/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255025	ACCESS NO.29	Avanti (100%)	Claim	103P043	1965/mar/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255026	ACCESS NO.30	Avanti (100%)	Claim	103P043	1965/mar/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255027	ACCESS NO.31	Avanti (100%)	Claim	103P043	1965/mar/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255058	TIM #1 FR.	Avanti (100%)	Claim	103P043	1965/sep/09	2020/mar/10		25	Fractional Claim (MCF)		B	C				
255059	AC NO.4 FR.	Avanti (100%)	Claim	103P043	1965/sep/22	2020/mar/10		25	Fractional Claim (MCF)			C				
255060	MA NO.1 FR.	Avanti (100%)	Claim	103P043	1965/sep/29	2020/mar/10		25	Fractional Claim (MCF)		B	C				

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255061	MA NO.6 FR.	Avanti (100%)	Claim	103P043	1965/sep/29	2020/mar/10		25	Fractional Claim (MCF)			C				
255062	AC NO.2 FR.	Avanti (100%)	Claim	103P043	1965/sep/29	2020/mar/10		25	Fractional Claim (MCF)			C				
255063	AC NO.16 FR.	Avanti (100%)	Claim	103P043	1965/sep/29	2020/mar/10		25	Fractional Claim (MCF)			C				
255064	AC NO.27 FR.	Avanti (100%)	Claim	103P043	1965/sep/29	2020/mar/10		25	Fractional Claim (MCF)			C				
255066	B.C.M. #1	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255067	B.C.M. #2	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255068	B.C.M. #3	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255069	B.C.M. #4	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255070	B.C.M. #5	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255071	B.C.M. #6 FR.	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Fractional Claim (MCF)			C				
255072	B.C.M. #7	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255073	B.C.M. #8 FR.	Avanti (100%)	Claim	103P044	1966/apr/01	2020/mar/10		25	Fractional Claim (MCF)			C				
255074	B.C.M. #10	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255083	JOY #1	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255084	JOY #2	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255085	JOY #3	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255086	JOY #4	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255087	JOY #5	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255088	JOY #6	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255089	JOY #8	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255090	JOY #9	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255091	JOY #7	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255092	JOY #10	Avanti (100%)	Claim	103P043	1966/apr/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255099	HRG FR.	Avanti (100%)	Claim	103P043	1966/dec/01	2020/mar/10		25	Fractional Claim (MCF)			C				
255100	HRG NO. 1	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255101	HRG NO. 2	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255102	HRG NO. 3	Avanti (100%)	Claim	103P043	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)			C				
255103	MEG NO. 1	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255104	MEG NO. 2	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255105	MEG NO. 3	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255106	MEG NO. 4	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255107	MEG NO. 5	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255108	MEG NO. 6	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255109	MEG NO. 7	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255110	MEG NO. 8	Avanti (100%)	Claim	103P044	1966/dec/01	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255111	JAN FR.	Avanti (100%)	Claim	103P043	1966/nov/29	2020/mar/10		25	Fractional Claim (MCF)		B	C				
255112	JAN NO. 1	Avanti (100%)	Claim	103P043	1966/nov/29	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255113	JAN NO. 2	Avanti (100%)	Claim	103P043	1966/nov/29	2020/mar/10		25	Two Post Claim (MC2)			C				
255114	JAN NO. 3	Avanti (100%)	Claim	103P043	1966/nov/29	2020/mar/10		25	Two Post Claim (MC2)			C				
255115	JAN NO. 4	Avanti (100%)	Claim	103P043	1966/nov/29	2020/mar/10		25	Two Post Claim (MC2)			C				
255116	JAN NO. 5	Avanti (100%)	Claim	103P043	1966/nov/29	2020/mar/10		25	Two Post Claim (MC2)			C				
255117	JAN NO.1 FR.	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Fractional Claim (MCF)			C				
255118	JAN NO.6	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255119	JAN NO.7	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255120	JAN NO.8	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				

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255121	JAN NO.9	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255122	JAN NO.10	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255123	JAN NO.11	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255124	JAN NO.12	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255125	JAN NO.13	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255126	JAN NO.14	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255127	JAN NO.15	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255128	JAN NO.16	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255129	JAN NO.17	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255130	JAN NO.18	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255131	JAN NO.19	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255132	JAN NO.20	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255133	JAN NO.21	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255134	JAN NO.22	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255135	JAN NO.23	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255136	JAN NO.24	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255137	JAN NO.25	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)			C				
255138	JAN NO.26	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255139	JAN NO.27	Avanti (100%)	Claim	103P043	1967/mar/21	2020/mar/10		25	Two Post Claim (MC2)		B	C				
255158	CJ #1 FR.	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255159	CJ #2 FR.	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255160	CJ #3 FR.	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255161	CJ #4 FR	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255162	CJ #5 FR.	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255163	CJ #6 FR.	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255164	CJ #7 FR.	Avanti (100%)	Claim	103P043	1967/jun/15	2020/mar/10		25	Fractional Claim (MCF)			C				
255165	AT FR.	Avanti (100%)	Claim	103P043	1967/jul/27	2020/mar/10		25	Fractional Claim (MCF)			C				
255166	DM #1 FR.	Avanti (100%)	Claim	103P043	1967/jul/27	2020/mar/10		25	Fractional Claim (MCF)			C				
255167	DM #2 FR.	Avanti (100%)	Claim	103P043	1967/jul/27	2020/mar/10		25	Fractional Claim (MCF)			C				
255169	ROUNDY FR.	Avanti (100%)	Claim	103P043	1967/jul/06	2020/mar/10		25	Fractional Claim (MCF)			C				
255170	D.M. NO. 3 FR.	Avanti (100%)	Claim	103P043	1967/aug/31	2020/mar/10		25	Fractional Claim (MCF)			C				
255354	FAST 2	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255355	FAST 3	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255356	FAST 4	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255357	FAST 5	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255358	FAST 6	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255359	FAST 7	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255360	FAST 8	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255361	FAST 9	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255362	FAST 10	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255363	FAST 11	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255364	FAST 12	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255365	FAST 13	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255366	FAST 14	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255367	FAST 15	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				

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255368	FAST 16	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255369	FAST 17	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255370	FAST 18	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255371	FAST 19	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255372	FAST 20	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255373	FAST 21	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255374	FAST 22	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
255375	FAST 1	Avanti (100%)	Claim	103P043	1974/jul/05	2020/mar/10		25	Two Post Claim (MC2)			C				
509804		Avanti (100%)	Claim	103P	2005/mar/30	2020/mar/10		220.347	Mineral Cell Title Submission (MCX)				D			
510205		Avanti (100%)	Claim	103P	2005/apr/05	2020/mar/10		1322.759	Mineral Cell Title Submission (MCX)				D			
510225		Avanti (100%)	Claim	103P	2005/apr/05	2020/mar/10		367.235	Mineral Cell Title Submission (MCX)				D			
510226		Avanti (100%)	Claim	103P	2005/apr/05	2020/mar/10		238.734	Mineral Cell Title Submission (MCX)				D			
517362	WOLF GAP	Avanti (100%)	Claim	103P	2005/jul/12	2020/mar/10		110.211	Mineral Cell Title Submission (MCX)				D			
517364	LIME CREEK FRAC	Avanti (100%)	Claim	103P	2005/jul/12	2020/mar/10		55.088	Mineral Cell Title Submission (MCX)				D			
517367	ROUNDY CREEK FRAC	Avanti (100%)	Claim	103P	2005/jul/12	2020/mar/10		18.356	Mineral Cell Title Submission (MCX)				D			
517371	BELLE FRAC	Avanti (100%)	Claim	103P	2005/jul/12	2020/mar/10		36.694	Mineral Cell Title Submission (MCX)				D			
527089	KITSAULT SOUTH	Avanti (100%)	Claim	103P	2006/feb/06	2020/mar/10		459.361	Mineral Cell Title Submission (MCX)				D			
530006	KITSAULT NORTH 1	Avanti (100%)	Claim	103P	2006/mar/14	2020/mar/10		440.071	Mineral Cell Title Submission (MCX)				D			
530007	KITSAULT NORTH 2	Avanti (100%)	Claim	103P	2006/mar/14	2020/mar/10		73.36	Mineral Cell Title Submission (MCX)				D			
530008	KITSAULT NORTH FRACTION	Avanti (100%)	Claim	103P	2006/mar/14	2020/mar/10		220.086	Mineral Cell Title Submission (MCX)				D			
530009	KITSAULT NORTH FRAC 2	Avanti (100%)	Claim	103P	2006/mar/14	2020/mar/10		55.016	Mineral Cell Title Submission (MCX)				D			
530826	KITSAULT NORTH 5	Avanti (100%)	Claim	103P	2006/mar/29	2020/mar/10		385.217	Mineral Cell Title Submission (MCX)				D			
530827	KITSAULT NORTH 6	Avanti (100%)	Claim	103P	2006/mar/29	2020/mar/10		183.395	Mineral Cell Title Submission (MCX)				D			
530884	KITSAULT FRAC 1	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		36.692	Mineral Cell Title Submission (MCX)				D			
530885	KITSAULT FRAC 2	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		18.346	Mineral Cell Title Submission (MCX)				D			
530886	KITSAULT FRAC 3	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		18.344	Mineral Cell Title Submission (MCX)				D			
530887	KITSAULT FRAC 4	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		55.034	Mineral Cell Title Submission (MCX)				D			
530888	KITSAULT EAST 2	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		385.627	Mineral Cell Title Submission (MCX)				D			
530889	KITSAULT EAST 3	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		110.157	Mineral Cell Title Submission (MCX)				D			
530890	KITSAULT EAST 1	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		440.514	Mineral Cell Title Submission (MCX)				D			
530891	EAST FRAC 1	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		36.7	Mineral Cell Title Submission (MCX)				D			
530892	EAST FRAC 2	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		55.056	Mineral Cell Title Submission (MCX)				D			
530893	WIDDZECH 1	Avanti (100%)	Claim	103P	2006/mar/30	2020/mar/10		220.28	Mineral Cell Title Submission (MCX)				D			
530912	EAST FRAC 3	Avanti (100%)	Claim	103P	2006/mar/31	2020/mar/10		18.356	Mineral Cell Title Submission (MCX)				D			
530913	EAST FRAC 4	Avanti (100%)	Claim	103P	2006/mar/31	2020/mar/10		18.36	Mineral Cell Title Submission (MCX)				D			
530914	EAST FRAC 5	Avanti (100%)	Claim	103P	2006/mar/31	2020/mar/10		18.35	Mineral Cell Title Submission (MCX)				D			
555363	HOAN NORTH	Avanti (100%)	Claim	103P	2007/mar/29	2020/mar/10		220.4875	Mineral Cell Title Submission (MCX)					E		
555366	HOAN SOUTH	Avanti (100%)	Claim	103P	2007/mar/29	2020/mar/10		220.8053	Mineral Cell Title Submission (MCX)					E		
564915	GWIN 1	Avanti (100%)	Claim	103P	2007/aug/22	2020/mar/10		440.5837	Mineral Cell Title Submission (MCX)				D			
564916	GWIN 2	Avanti (100%)	Claim	103P	2007/aug/22	2020/mar/10		440.7171	Mineral Cell Title Submission (MCX)				D			
564917	GWIN 3	Avanti (100%)	Claim	103P	2007/aug/22	2020/mar/10		385.5937	Mineral Cell Title Submission (MCX)				D			
566438	HB1	Avanti (100%)	Claim	103P	2007/sep/21	2020/mar/10		459.4243	Mineral Cell Title Submission (MCX)				D			
566439	HB2	Avanti (100%)	Claim	103P	2007/sep/21	2020/mar/10		36.7857	Mineral Cell Title Submission (MCX)				D			
566480	MONSTER1	Avanti (100%)	Claim	103P	2007/sep/21	2020/mar/10		460.0167	Mineral Cell Title Submission (MCX)				D			
566483	MONSTER2	Avanti (100%)	Claim	103P	2007/sep/21	2020/mar/10		460.1915	Mineral Cell Title Submission (MCX)				D			

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566486	MONSTER3	Avanti (100%)	Claim	103P	2007/sep/21	2020/mar/10		349.5576	Mineral Cell Title Submission (MCX)				D			
568513	HOANEAST1	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		331.144	Mineral Cell Title Submission (MCX)				D			
568514	HOANEAST2	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		386.2257	Mineral Cell Title Submission (MCX)				D			
568515	HOANEAST3	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		441.1656	Mineral Cell Title Submission (MCX)				D			
568516	HOANEAST4	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		441.1678	Mineral Cell Title Submission (MCX)				D			
568517	HOANEAST5	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		422.9085	Mineral Cell Title Submission (MCX)				D			
568518	HOANEAST6	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		459.348	Mineral Cell Title Submission (MCX)				D			
568519	HOANEAST7	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		459.347	Mineral Cell Title Submission (MCX)				D			
568520	HOANWEST1	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		404.0887	Mineral Cell Title Submission (MCX)				D			
568521	HOANEAST8	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		367.3531	Mineral Cell Title Submission (MCX)				D			
568522	HOANWEST2	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		459.3495	Mineral Cell Title Submission (MCX)				D			
568523	HOANWEST3	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		386.0052	Mineral Cell Title Submission (MCX)				D			
568524	HOANWEST4	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		459.7091	Mineral Cell Title Submission (MCX)				D			
568525	HOANEAST9	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		257.6565	Mineral Cell Title Submission (MCX)				D			
568526	KWIN1	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		367.3555	Mineral Cell Title Submission (MCX)				D			
568527	KWIN2	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		349.0378	Mineral Cell Title Submission (MCX)				D			
568530	HOANSOUTH1	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		460.173	Mineral Cell Title Submission (MCX)				D			
568534	HOANWEST5	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		312.7391	Mineral Cell Title Submission (MCX)				D			
568537	KWIN3	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		330.7714	Mineral Cell Title Submission (MCX)				D			
568538	KWIN4	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		459.3562	Mineral Cell Title Submission (MCX)				D			
568539	KWIN5	Avanti (100%)	Claim	103P	2007/oct/23	2020/mar/10		459.3554	Mineral Cell Title Submission (MCX)				D			
598581	BLUE FRACTION	Avanti (100%)	Claim	103P	2009/feb/02	2020/mar/10		18.3613	Mineral Cell Title Submission (MCX)							
602567	BONANZA 10	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.1518	Mineral Cell Title Submission (MCX)				D			
602570	BONANZA 11	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.1108	Mineral Cell Title Submission (MCX)				D			
602571	BONANZA 12	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.3357	Mineral Cell Title Submission (MCX)				D			
602572	BONANZA 13	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.3751	Mineral Cell Title Submission (MCX)				D			
602574	BONANZA 14	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.5655	Mineral Cell Title Submission (MCX)				D			
602576	BONANZA 15	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.7512	Mineral Cell Title Submission (MCX)				D			
602577	BONANZA 16	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		441.9348	Mineral Cell Title Submission (MCX)				D			
602580	STAGOO 4	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		442.2367	Mineral Cell Title Submission (MCX)				D			
602583	STAGOO 5	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		442.2125	Mineral Cell Title Submission (MCX)				D			
602584	STAGOO 7	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		442.3887	Mineral Cell Title Submission (MCX)				D			
602586	STAGOO 6	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		442.327	Mineral Cell Title Submission (MCX)				D			
602587	STAGOO 8	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		368.7621	Mineral Cell Title Submission (MCX)				D			
602593	BONANZA 2	Avanti (100%)	Claim	103P	2009/apr/14	2020/mar/10		110.2592	Mineral Cell Title Submission (MCX)				D			
603005	VERY STEEP	Avanti (100%)	Claim	103P	2009/apr/20	2020/mar/10		220.6216	Mineral Cell Title Submission (MCX)				D			
603006	STAGOO 9	Avanti (100%)	Claim	103P	2009/apr/20	2020/mar/10		442.3007	Mineral Cell Title Submission (MCX)				D			
603007	STAGOO 10	Avanti (100%)	Claim	103P	2009/apr/20	2020/mar/10		368.5619	Mineral Cell Title Submission (MCX)				D			
603009	STAGOO 11	Avanti (100%)	Claim	103P	2009/apr/20	2020/mar/10		442.0723	Mineral Cell Title Submission (MCX)				D			
603011	STAGOO 13	Avanti (100%)	Claim	103P	2009/apr/20	2020/mar/10		332.069	Mineral Cell Title Submission (MCX)				D			
603012	STAGOO 14	Avanti (100%)	Claim	103P	2009/apr/20	2020/mar/10		147.3843	Mineral Cell Title Submission (MCX)				D			
603533	BONANZA 9	Avanti (100%)	Claim	103P	2009/apr/28	2020/mar/10		442.0954	Mineral Cell Title Submission (MCX)				D			
603534	BONANZA 10	Avanti (100%)	Claim	103P	2009/apr/28	2020/mar/10		442.2074	Mineral Cell Title Submission (MCX)				D			
603535	BONANZA 11	Avanti (100%)	Claim	103P	2009/apr/28	2020/mar/10		442.0944	Mineral Cell Title Submission (MCX)				D			
603536	STAGOO 3	Avanti (100%)	Claim	103P	2009/apr/28	2020/mar/10		460.69	Mineral Cell Title Submission (MCX)				D			

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603537	STAGOO1	Avanti (100%)	Claim	103P	2009/apr/28	2020/mar/10		460.9246	Mineral Cell Title Submission (MCX)				D			
603538	STAGOO 2	Avanti (100%)	Claim	103P	2009/apr/28	2020/mar/10		239.7621	Mineral Cell Title Submission (MCX)				D			
606521	JANICE	Avanti (100%)	Claim	103P	2009/jun/23	2020/mar/10		55.033	Mineral Cell Title Submission (MCX)				D			
606522	NANCY	Avanti (100%)	Claim	103P	2009/jun/23	2020/mar/10		55.0444	Mineral Cell Title Submission (MCX)				D			
606523	MICKEY	Avanti (100%)	Claim	103P	2009/jun/23	2020/mar/10		367.8009	Mineral Cell Title Submission (MCX)				D			
606524	ELBEE	Avanti (100%)	Claim	103P	2009/jun/23	2020/mar/10		367.7988	Mineral Cell Title Submission (MCX)				D			
606963	NANCY 2	Avanti (100%)	Claim	103P	2009/jul/03	2020/mar/10		330.3178	Mineral Cell Title Submission (MCX)				D			
606964	NANCY 3	Avanti (100%)	Claim	103P	2009/jul/03	2020/mar/10		18.3404	Mineral Cell Title Submission (MCX)				D			
617304	HM 1	Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		440.6511	Mineral Cell Title Submission (MCX)				D			
617306	HM 2	Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		440.651	Mineral Cell Title Submission (MCX)				D			
617323	HM 3	Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		275.3474	Mineral Cell Title Submission (MCX)				D			
617344		Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		367.0197	Mineral Cell Title Submission (MCX)				D			
617345		Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		146.7239	Mineral Cell Title Submission (MCX)				D			
617346		Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		385.2304	Mineral Cell Title Submission (MCX)				D			
617363		Avanti (100%)	Claim	103P	2009/aug/11	2020/mar/10		110.0829	Mineral Cell Title Submission (MCX)				D			
620565	SB FRACTION	Avanti (100%)	Claim	103P	2009/aug/17	2020/mar/10		18.3576	Mineral Cell Title Submission (MCX)				D			
620583	HM FRACTION	Avanti (100%)	Claim	103P	2009/aug/17	2020/mar/10		18.3482	Mineral Cell Title Submission (MCX)				D			
649604	HOAN SOUTH 2	Avanti (100%)	Claim	103P	2009/oct/09	2020/mar/10		331.1404	Mineral Cell Title Submission (MCX)				D			
649605	HOAN SOUTH 3	Avanti (100%)	Claim	103P	2009/oct/09	2020/mar/10		331.2398	Mineral Cell Title Submission (MCX)				D			
683484	CONNECTOR 4	Avanti (100%)	Claim	103P	2009/dec/10	2020/mar/10		220.9425	Mineral Cell Title Submission (MCX)				D			
683503	CONNECTOR 3	Avanti (100%)	Claim	103P	2009/dec/10	2020/mar/10		276.0496	Mineral Cell Title Submission (MCX)				D			
683523	CONNECTOR 2	Avanti (100%)	Claim	103P	2009/dec/10	2020/mar/10		441.3794	Mineral Cell Title Submission (MCX)				D			
683543	CONNECTOR 1	Avanti (100%)	Claim	103P	2009/dec/10	2020/mar/10		441.0809	Mineral Cell Title Submission (MCX)				D			
707024		Avanti (100%)	Claim	103P	2010/feb/24	2020/mar/10		238.3672	Mineral Cell Title Submission (MCX)							
719548	AVTFR1	Avanti (100%)	Claim	103P	2010/mar/10	2020/mar/10		18.3461	Mineral Cell Title Submission (MCX)							
741402	OWL 1	Avanti (100%)	Claim	093K	2010/apr/06	2011/apr/06		454.6085	Mineral Cell Title Submission (MCX)							
741422	OWL 2	Avanti (100%)	Claim	093K	2010/apr/06	2011/apr/06		473.5486	Mineral Cell Title Submission (MCX)							
741442	OWL 3	Avanti (100%)	Claim	093K	2010/apr/06	2011/apr/06		378.8031	Mineral Cell Title Submission (MCX)							
741462	OWL 4	Avanti (100%)	Claim	093K	2010/apr/06	2011/apr/06		397.5355	Mineral Cell Title Submission (MCX)							
741503	OWL 5	Avanti (100%)	Claim	093K	2010/apr/06	2011/apr/06		473.2087	Mineral Cell Title Submission (MCX)							
741522	OWL 6	Avanti (100%)	Claim	093K	2010/apr/06	2011/apr/06		473.209	Mineral Cell Title Submission (MCX)							
839492	BM AREA	Avanti (100%)	Claim	103P	2010/dec/02	2011/dec/02		146.7	Mineral Cell Title Submission (MCX)							
Total								**43668.8491**								

Note: Fr, Frac = fraction. A = subject to 1975–1976 Royalty Agreement; B = subject to 1984 Royalty Agreement; C = subject to ALI Agreement; D = subject to TA Agreement; E = subject to NC Agreement; L = Lien lodged against claim, W = Writ of summons and certificate of pending litigation lodged against claim