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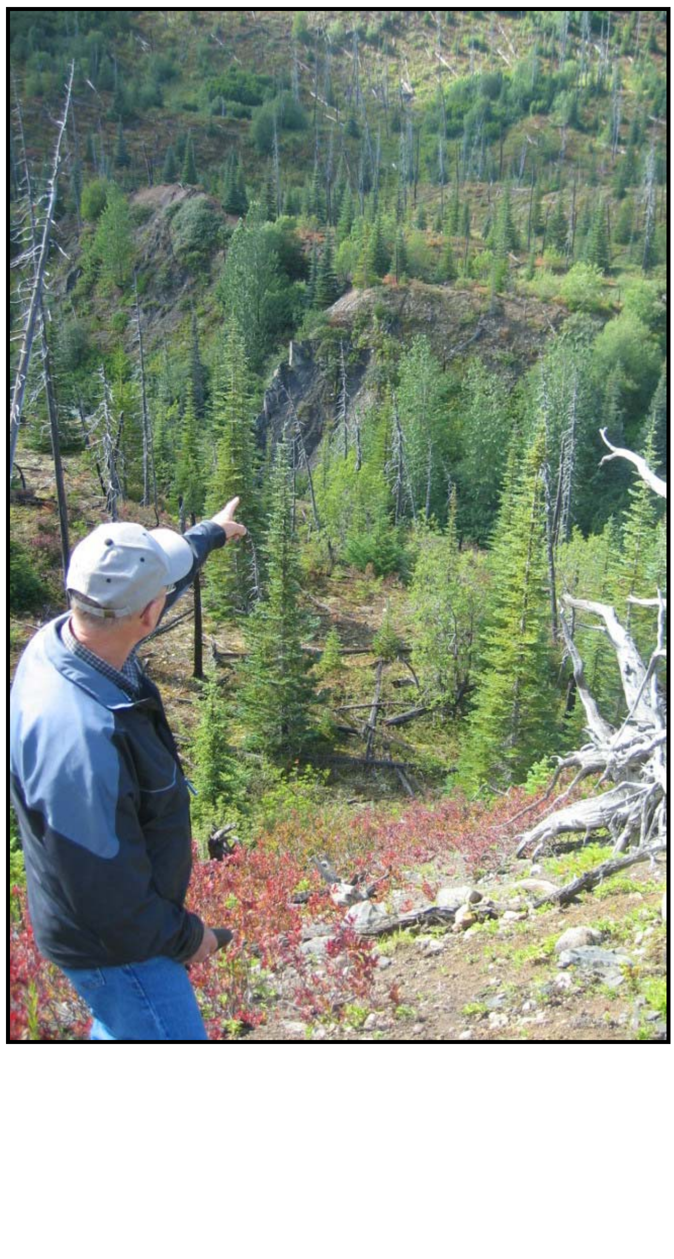
ACID ROCK DRAINAGE AND METAL LEACHING ASSESSMENT

FOR THE PROPOSED

KITIMAT – SUMMIT LAKE

NATURAL GAS PIPELINE LOOPING PROJECT



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EXECUTIVE SUMMARY

As a preliminary indication of the ARD/ML potential along the pipeline corridor, a desktop study has been conducted whereby publicly available mineralogical, geochemical and geological information has been compiled and evaluated to assess the presence and or absence of the ARD/ML minerals (in particular sulphides and carbonates) within a 4 km buffer centred over the pipeline. No field work was conducted in this study.

Information resources relied upon for this evaluation included government geological maps, MINFILE and ARIS reports as well as selected information from the federal and provincial regional geochemical survey (RGS) data on stream, sediment and water data.

A qualitative ARD/ML ranking system used here provides a relative basis for comparison along the corridor and is described as follows:

- High – corridor passes through a rock unit with nearby known mineralization consistent with acid generating sulphides and minerals of high metal leaching and metal mobility potential as indicated by MINFILE and Assessment Reports;
- Moderate – corridor intersects a rock unit with indicated regional potential for elevated mineralization (e.g. gold, silver, copper, zinc) or localized levels of mineralization in close proximity to the corridor (e.g. small veining);
- Low – corridor will intersect a rock unit with good buffering capacity (limestone) or regionally low mineralization.

Table 1.6 summarises the result of the assessment. High Zones exist from KP 185 to KP 250, Moderate Zones from KP 0 to KP 20, KP 75 to KP 76, KP 150 to 185, and KP 280 to 310. The remainder of the pipeline corridor passes through Low Zones.

The assessment conducted to date has been solely a desktop study. Additional evaluations would be required to confirm the desktop-based classification of the zones and refine boundaries of the potential ARD/ML zones. The next level of evaluation would generally be considered a verification program, the results of which could be used to help develop specific construction stage monitoring and/or mitigation plans within each zone.

Recommendations for scoping level evaluations for each of the zones along those areas of the pipeline that will cross colluvium or require rock excavations would include varying degrees of field inspections(assuming favourable access and logistics), mapping and sampling for laboratory testing of acid rock drainage and metal leaching properties. Sampling frequency and testing requirements would likely be more onerous for the high and moderate zones and less onerous for those areas considered to have a low potential for ARD/ML. General recommendations for each of the identified zone includes:

- High – relatively closely spaced sampling to achieve representative material based on volume of each lithological unit to be excavated, detailed acid base accounting, solids chemistry and leach extraction analyses, potential testing of ‘effective’ buffering capacity and kinetic characteristics.

- Moderate – adequate sampling to confirm classification and be considered representative of lithology to be encountered, detailed acid base accounting, solids chemistry and leach extraction analyses.
- Low – limited sampling to confirm classification, analysis of indicator parameters such as sulphur and inorganic carbon.

TABLE OF CONTENTS

Page

APPENDIX I – FIGURES

APPENDIX II – TABLES

1.0 INTRODUCTION

The construction of the Kitimat to Summit Lake Pipeline Looping Project (the KSL Project) will enable Pacific Northern Gas Ltd. (PNG) to increase the capacity of the existing natural gas transmission pipeline to meet shipper demand as well as to reverse the direction of flow so that the existing pipeline and the new pipeline loop can flow natural gas in both a westerly and an easterly direction.

The project involves the construction of approximately 462 km of 914 mm (36-inch) diameter pipe between a location immediately north of the community of Kitimat, BC and a location immediately east of the community of Summit Lake, BC (see Figure 1). The project also includes the construction and operation of one new compressor station located at the mid-point of the new pipeline (see Figure 1) and the installation of associated aboveground facilities including block valves and receiving traps for pipeline inspection tools at specific locations within the designated right-of-way. Construction of the project will require temporary construction camps, stockpile sites and other temporary work yards. No ground disturbing work is required on the existing PNG pipeline where it is not paralleled by the proposed KSL Project.

PNG is regulated under the *BC Utilities Commission Act* and the proposed KSL Project is subject to review under the *BC Environmental Assessment Act* (*BCEA Act*) as well as the *Canadian Environmental Assessment Act* (*CEA Act*). This review and approval process will be conducted under the auspices of the Harmonization Agreement by the BC Environmental Assessment Office (BCEAO) and the Canadian Environmental Assessment Agency (CEA Agency). Application will be made to the BCEAO for an Environmental Approval Certificate (EAC) for the purposes of constructing and operating the KSL Project.

The purpose of the KSL Project is to deliver natural gas that is received at the proposed Kitimat Liquefied Natural Gas (KLNG) facility, located immediately southwest of the City of Kitimat, to the Duke Energy Inc. pipeline facilities located east of the Village of Summit Lake. To accommodate the construction and operation of the KSL Project, PNG and KLNG have jointly formed a new company, Pacific Trail Pipelines Inc. (PTP) that will own and operate the proposed pipeline loop as well as the existing PNG pipeline.

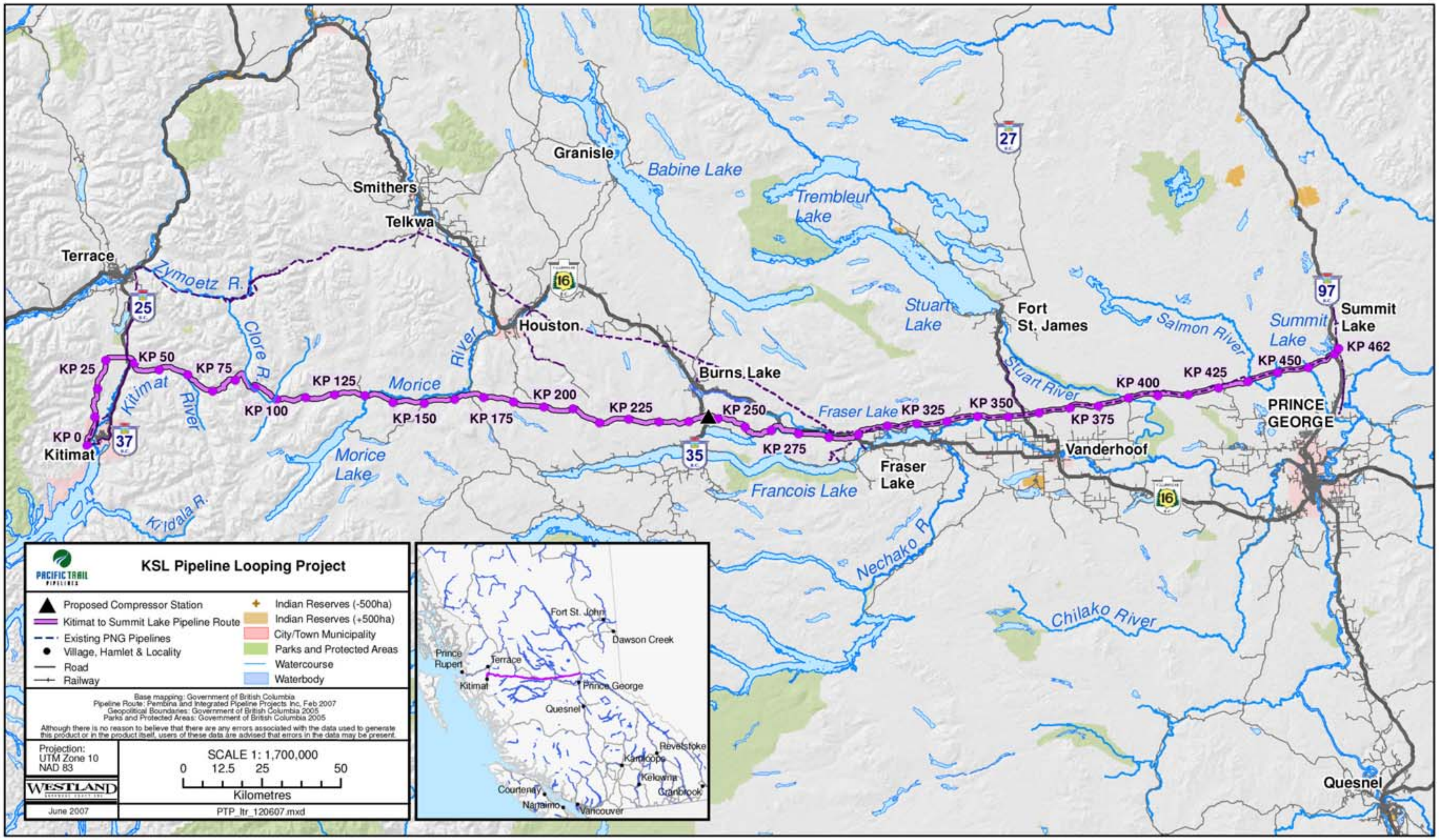

Figure 1. Regional overview of the KSL Project

2.0 METHODOLOGY

Acid Rock Drainage (ARD) refers to the generation of acidity from the oxidation of iron-bearing sulphur minerals such as pyrite (FeS_2), pyrrhotite ($Fe_{1-x}S$), chalcopyrite ($CuFeS_2$) etc. when exposed to oxygen and water. Metal leaching (ML) may occur as a result of sulphide oxidation and/or dissolution of associated minerals. Often ML is greatest in acidic conditions due to typically higher metal solubility and sulphide weathering rates under low pH conditions; however, ML of particular metals can also occur at neutral pH drainage in sufficient quantities to cause adverse impacts on the receiving environment.

The minerals that readily consume or neutralize acidity and buffer solutions to near neutral pH conditions are the carbonates calcite ($CaCO_3$) and dolomite ($CaMg(CO_3)_2$). Other minerals (including other carbonates, oxides, aluminosilicates, etc.) also buffer acidity, but typically do so at rates much lower than the rates at which sulphide oxidation occurs, in which case the acidity produced by oxidation can overwhelm the buffering capacity.

The presence and type of minerals (primarily sulphides and carbonates), their texture, exposure, reactivity and contact with water are all important variables to understand in order to quantitatively assess the potential for, and possible impact of ARD/ML. That level of evaluation is not within the scope of this assessment, nor is it likely required for the entire length of the proposed pipeline corridor. Therefore, as a preliminary evaluation to provide an indication of the ARD/ML potential of the region, a desktop study has been conducted whereby publicly available mineralogical, geochemical and geological information has been compiled and evaluated to assess the presence and or absence of the ARD/ML minerals of interest (in particular sulphides and carbonates) along the length of the corridor.

For the purpose of the ARD/ML assessment along the pipeline, the corridor of interest selected was slightly wider than the local study area used by other disciplines (Figure 2). Specifically it consisted of 2 km on each side of the proposed pipeline for a total width of 4 km along most of the proposed pipeline's length. The corridor of interest was expanded to 10 km on each side (total width of 20 km) in areas where major mineral occurrences (mine developments, producers, past producers) exist within a 10 km radius of the proposed pipeline route.

Information sources relied upon for this evaluation included government geological maps, MINFILE and ARIS reports as well as selected information from the federal and provincial regional geochemical survey (RGS) data on stream, sediment and water data[1]. MINFILE is a provincial inventory containing geological, location and economic information on over 12,250 metallic, industrial mineral and coal mines, deposits and occurrences in BC. ARIS is the

[1] Reports and survey datasets were located and downloaded from the British Columbia Ministry of Energy, Mines and Petroleum Resources Websites and the British Columbia Government Regional Geochemical Survey Website:
- http://www.em.gov.bc.ca/Mining/Geolsurv/minfile/ for MINFILE
- http://www.em.gov.bc.ca/Mining/Geolsurv/Aris/default.htm for ARIS
- http://www.em.gov.bc.ca/Mining/Geolsurv/Geochinv/rgs.htm
- http://www.em.gov.bc.ca/Mining/Geolsurv/Geochinv/rgs/rgsdata.htm

Assessment Report Indexing System of the BC. Geological Survey in which mineral exploration assessment reports are filed and available for public access. The locations of MINFILE occurrences (showings, prospects, developed prospects, producers, past producers) and ARIS reports filed in the vicinity of the proposed pipeline are shown in Figures 3 through 10. In addition, a summary of all MINFILE and ARIS occurrences in the corridor are provided in Table 1.1.

The BC regional geochemical survey (RGS) data used in this evaluation was collated by the province in 2003 and statistical details for map representations are shown in the legends of each map (Figures 11 to 14) used in this evaluation. The metals Cu, Zn, Mo and As were selected for this evaluation as indicator parameters for related, but somewhat different objectives. Copper was chosen as an indicator of low pH drainage as it is typically a metal of concern in acidic waters. Zinc was chosen as a metal that can be mobile in near-neutral pH conditions and as such is often one of the first metals of concern to be detected when ARD develops. It is also highly mobile in acidic conditions. Molybdenum is considered very mobile in neutral to alkaline pH conditions. Lastly, arsenic was selected as it has moderate mobility in acidic, neutral and alkaline pH conditions (if in oxidized form) and therefore covers a broader range of conditions (Levinson, 1980).

The ARD/ML ranking system used here provides a relative basis for comparison along the corridor but should not be considered a quantitative ranking (adapted from Rescan, 2006). Specifically, the ranking system as adapted for this evaluation is described as:

- High – corridor passes through a rock unit with nearby known mineralization consistent with acid generating sulphides and minerals of high metal leaching and metal mobility potential as indicated by MINFILE and Assessment Reports;
- Moderate – corridor intersects a rock unit with indicated regional potential for elevated mineralization (e.g. gold, silver, copper, zinc) or localized levels of mineralization in close proximity to the corridor (e.g. small veining);
- Low – corridor will intersect a rock unit with good buffering capacity (limestone) or regionally low mineralization.

2.1 Region 1 – Kitimat River Estuary (KP 0 to KP 42)

Within Region 1 there are 3 MINFILE occurrences and 2 ARIS locations (Table 1.1). A number of occurrences also exist just to the west of the corridor that were also considered as shown on Figure 3, with summarized bedrock geology shown and specific geological unit descriptions provided in Table 1.2. Bedrock surface exposure in the first 20 km of Region 1 generally consists of rocks of the Lower (to Middle) Jurassic Hazelton Group, consisting typically of basaltic, andesitic and rhyolitic pyroclastics rocks and flows, as well as breccia, tuff and flows of feldspar-phyric andesites. The rocks of the Hazelton Group form a large lens shaped pendant surrounded and intruded by the Coast Plutonic Complex, consisting of gabbro, diorite, quartz-diorite and granodiorite. The Coast Intrusions outcrop along the proposed pipeline starting approximately at KP 17 to KP 20 (Figure 3) through to KP 42.

While detailed discussions of the reports located along the corridor in this region are provided in Table 1.3, it can be generalized that mineralization in this region is predominantly hosted in the Lower to Middle Jurassic Formations of the Hazelton Group rocks, primarily the Telkwa Formation andesite and metavolcanics units. Mineralization tends to be vein and/or skarn systems that are structurally controlled. While the occurrence of sulphides that can produce acidity (pyrite (FeS_2), pyrrhotite ($Fe_{1-x}S$) and chalcopyrite ($CuFeS_2$)) is reported, these occurrences seem to be controlled by the fault to the west of the pipeline corridor or at the contact with the Coast Plutonic Intrusions near Iron Mountain within the corridor of interest (KP 17). Exposure along the proposed pipeline is expected to be minimal and potentially would result only in localized areas of sulphide oxidation if the Hazelton Group rocks are exposed similar to those already indicated along the CNR railway cut (MINFILE 103I 221, ARIS 16860). The neutralization potential available from carbonates in this area is probably low, as no carbonate minerals were noted in any of the reports and the amphibole, feldspar and quartz minerals typical of the host lithologies buffer at relatively slow reaction rates.

Within Region 1 no anomalous levels of the RGS metals Cu, Zn, Mo or As are seen, with the possible exception of Cu which may be anomalously elevated near the contact of the Hazelton Group and Coast Plutonic Complex units. Significantly elevated concentrations of Cu, Zn, Mo and As tend to cluster outside the corridor of interest, generally following structure or major contacts of volcanics with intrusives. Zinc patterns tend to be less distinct regionally than the other parameters evaluated here.

Based on the showings and assessment reports reviewed for Region 1, potential metals of concern identified would include Cu, Fe and sometimes Pb and Zn. With low carbonates and vein-type sulphide occurrences, it would be expected that, should metal leaching occur, it would be quite localized and at relatively low levels.

Based on the information reviewed here (and summarized in Table 1.3), the ARD/ML potential of the area defined by the Hazelton Group rocks (KP 0 to KP 20) is considered **moderate**. The Hazelton Group has been explored for vein type mineralization with some indications of anomalous copper levels near the pipeline (Figure 11) and exposure of sulphides in close proximity to the proposed pipeline itself (namely the Wedeene (MINFILE 103I 014) and J (MINFILE 103I 221, ARIS 16860) occurrences). Regional mineralization in this Formation is well documented, but sulphide exposures appear to be localized within relatively small vein systems, either structurally controlled by faults or adjacent to contacts with the intrusive complex.

No deposits or occurrences appear to be known within the Coast Plutonic Complex. Therefore, it is assumed that regionally there are low levels of mineralization within this group of intrusives and the ARD/ML potential of this geological package along this region (~KP 20 to ~KP 42) is considered **low**. Figure 15 provides a graphical illustration of the ARD/ML classification along the corridor based on the classification system as described in the previous section. A summary of the classification by sub-section is also provided in Table 1.6.

2.2 Region 2 – Kitimat River Valley to Clore River (KP 42 – KP 100)

Within the corridor of interest along Region 2 there are 2 MINFILE occurrences and 1 ARIS report. Consideration of showings south of the corridor has also been given, and the MINFILE and ARIS reports reviewed are described in Table 1.4. This region is covered on two maps, specifically Figures 3 and 4. Simplified bedrock geology is shown on the figures with detailed unit descriptions provided in Table 1.2. Similar to the Region 1, the bedrock underlying Region 2 is composed of two major geologic packages: the volcanic breccias and andesitic flows of the Hazelton Group (KP 57 to KP 69, KP 79 to KP 100) and the granites, granodiorites and diorites of the Coast Plutonic Complex (KP 42 to KP 57, KP 69 to KP 79).

In general the potential for ARD/ML in Region 2 is anticipated to be **low** based largely on the limited exploration work done within the corridor in this region indicating low regional mineralization. Other areas of exploration interest in this region but outside the corridor of interest (south of corridor between ~KP 45 to ~ KP 50) seemed to target volcanic packages (Telkwa Formation) near Eocene intrusives. Given the distance and nature of these targets, and the lack of information within the corridor itself, there is no indication of more regional scale ARD/ML concerns, thereby supporting the general classification of **low** ARD/ML potential in this reach. There may be very localized areas of **moderate** potential for ARD/ML, in particular around the Hoult Claims near KP 75 in exposures of the Hazelton Group Formations (shown on Figure 15 as green (moderate) stripes on blue (low) background). At this location there are also some anomalous Mo concentrations based on the RGS maps (Figure 13). Slightly elevated levels of Cu and Zn would also be suggested by the RGS data (Figures 11 and 12); however generally not at levels substantially greater than background levels within the same zones either northwest or southeast of the corridor.

2.3 Region 3 – Clore River to Summit Lake (KP 100 to 462)

The remainder of the proposed pipeline corridor falls within the extensive Region 3 in which there are 16 MINFILE reports and 80 ARIS reports filed as well as 3 mines (Equity, Endako and Denak). Again, reports located outside the corridor in similar lithological or fault domains as within the corridor were also considered. A more detailed discussion of the various reports is provided in Table 1.5. This region is illustrated on seven mapsheets (i.e. Figures 4 through 10) on which the simplified bedrock geology and MINFILE and ARIS locations are plotted. Specific geological units are described in Table 1.2.

A number of bedrock lithologies are crossed along the ~360 km of Region 3, including (meta-) volcanics (primarily the Hazelton Group), intrusives (most significant being the Endako Batholith in the Francois Lake Intrusive Suite) and sedimentary packages (primarily the Skeena and Takla Groups). The volcanics predominate the area, with regular wedges of fault-bounded sedimentary packages, and intrusive complexes. The Hazelton Group has been extensively faulted with major block faults striking northwest-southeast.

Mineral commodities of interest in this region typically include:

- Ag, Cu, Pb and Zn hosted in volcanics between KP 100 and KP 250, similar to the Equity Silver deposit;

- mainly Mo between KP 285 and KP 310, similar to the Endako deposit hosted in the intrusives; and
- Mn around KP 345 hosted in sedimentary rocks.

In general, the presence of sulphides appears to be restricted to the volcanic and intrusive bedrock types, as shown on Figures 4 through 10. Common sulphides include pyrite (FeS_2), chalcopyrite ($CuFeS_2$), galena (PbS) and sphalerite (ZnS), with minor occurrences of pyrrhotite ($Fe_{1-x}S$), tetrahedrite ($Cu_{12}Sb_4S_{13}$) and arsenopyrite (FeAsS). Molybdenite (MoS_2) is mainly present in the Endako Batholith between ~KP 285 and KP 310; the anomalously high levels of molybdenum in this reach are clearly defined on Figure 13.

The occurrence of buffering minerals such as carbonates (mostly calcite) was only noted in a small number of reports and generally within the volcanic units in conjunction with alteration assemblages (Table 1.1). It is anticipated that carbonates are relatively rare in the intrusives and sedimentary packages described along the corridor, and localized within the volcanics.

The portion of the corridor between KP 100 and KP 150 is considered to have a **low** potential for ARD/ML as very little exploration work has been conducted along this reach. The area around, and to the west of, the Equity Silver mine (MINFILE 093L 001) within the volcanics, but in close proximity to Eocene intrusives is considered to have a **moderate** (from ~ KP 150 to KP 185) to **high** (KP 185 to KP 250) potential to develop ARD/ML. East of Equity, from ~ KP 250 to KP 280 underlain predominantly by volcanics, there are no occurrences of note containing sulphides. Therefore this section of the region is considered to have a **low** potential for ARD/ML. The RGS dataset for Cu, Zn, Mo and As does not indicate anomalous levels of these metals within this reach of Region 3 (i.e. from KP 100 to KP 280), with the exception that a moderately elevated area of Zn can be seen at the location near to the Equity Silver Mine.

Another area with concentrated exploration activity lies within the Endako Batholith (around KP 280 to KP 310; Figure 7). Exploration here has generally targeted molybdenum and copper porphyry systems. Most abundant sulphides reported include pyrite and molybdenite with lesser occurrences of chalcopyrite. Indications of past, localized oxidation in the form of hematite in fractures suggests that some degree of in-situ sulphide oxidation has occurred in the area. Generally however, sulphide contents are reported to be low at Endako, and no ARD has been identified (Mineral Resources Education Program of BC, undated). Therefore, while sulphide contents are expected to be low and relatively localized, the presence of anomalous levels of Mo, which is a highly mobile parameter in the anticipated alkaline conditions, and the occurrence of pyrite in association with mineralization within the intrusive suite suggests that this area might have a **moderate** ARD/ML potential, primarily for ML concerns.

East of the Endako batholith, there has been very little exploration work reported. From ~ KP 310 to the end of the corridor, the only showings reported were for non-sulphide commodities (i.e. manganese). Based on the limited amount of exploration work conducted and the RGS maps (Figures 11 to 14), the last ~ 160 kilometres of the proposed pipeline is considered to have a **low** potential for ARD/ML.

3.0 RECOMMENDATIONS

The assessment conducted to date has been solely a desktop study. Additional evaluations would be required to confirm the desktop-based classification of the zones, and refine boundaries of the potential ARD/ML zones, and define sections of the pipeline route that are likely to be excavated into rock. The next level of evaluation would generally be considered a verification program, the results of which could be used to help develop specific construction stage monitoring and/or mitigation plans within each zone.

Recommendations for scoping level evaluations for each of the zones along those areas of the pipeline that will cross colluvium or require rock excavations would include varying degrees of field inspections(assuming favourable access and logistics), mapping and sampling for laboratory testing of acid rock drainage and metal leaching properties. Sampling frequency and testing requirements would likely be more onerous for the high and moderate zones and less onerous for those areas considered to have a low potential for ARD/ML. General recommendations for each of the identified zone includes:

- High – relatively closely spaced sampling to achieve representative material based on volume of each lithological unit to be excavated, detailed acid base accounting, solids chemistry and leach extraction analyses, potential testing of ‘effective’ buffering capacity and kinetic characteristics.
- Moderate – adequate sampling to confirm classification and be considered representative of lithology to be encountered, detailed acid base accounting, solids chemistry and leach extraction analyses.
- Low – limited sampling to confirm classification, analysis of indicator parameters such as sulphur and inorganic carbon.

4.0 REFERENCES

Aziz and Ferguson (undated). Equity Silver Mine – Case Study. http://www.nrcan.gc.ca/ms/canmet-mtb/mmsl-lmsm/mend/cases/equity/equity.htm

Levinson, A.A. (1980). Introduction to Exploration Geochemistry. Applied Publishing Ltd., 924 pp.

Mineral Resources Education Program of BC (undated). Endako. http://www.bcminerals.ca/files/bc_mine_information/000088.php

Rescan (2006). Galore Creek Project Access Corridor Acid Rock Drainage Potential Assessment. Report prepared for NovaGold Canada Inc. by Rescan Environmental Services Ltd., April 2006.

Appendix I - Figures

Figure 2. Location Plan

Figure 3. MINFILE and ARIS locations and bedrock geology, KP 0 to KP 75

Figure 4. MINFILE and ARIS locations and bedrock geology, KP 75 to KP 135

Figure 5. MINFILE and ARIS locations and bedrock geology, KP 135 to KP 190

Figure 6. MINFILE and ARIS locations and bedrock geology, KP 190 to KP 250

Figure 7. MINFILE and ARIS locations and bedrock geology, KP 250 to KP 310

Figure 8. MINFILE and ARIS locations and bedrock geology, KP 310 to KP 360

Figure 9. MINFILE and ARIS locations and bedrock geology, KP 360 to KP 410

Figure 10. MINFILE and ARIS locations and bedrock geology, KP 410 to KP 469

Figure 11. BC Regional Geochemical Survey for Arsenic by standard deviation

Figure 12. BC Regional Geochemical Survey for Copper by standard deviation

Figure 13. BC Regional Geochemical Survey for Molybdenum by standard deviation

Figure 14. BC Regional Geochemical Survey for Zinc by standard deviation

Figure 15. ARD/ML Ranking

Appendix II - Tables

TABLE 1.1

SUMMARY OF MINFILE AND ARIS REPORTS

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub - Region #1	MINFILE	103I 172	6	-2264	JOAN (BOWBYES)	Cu skarn	W skarn	Unknown		Showing			W, Fe, Cu, Ni	Pyrite, Chalcopyrite		Magnetite, Scheelite
	ARIS	05157	12	-88	CHELAN						1974	Geological Report				
	MINFILE	103I 218	13	-2005	BILLY (GOLD)	Intrusion-related Au pyrrhotite veins	Polymetallic veins Ag-Pb-Zn+/-Au	Stockwork	Breccia	Showing			Au, Ag, Pb, Zn	Galena, Pyrite		
	MINFILE	103I 169	15	-3020	JEANETTE (JOS)	Volcanic redbed Cu	Subvolcanic Cu-Ag-Au (As-Sb)	Vein	Massive	Prospect			Cu, Ag, Au	Pyrite, Pyrrhotite, Chalcopyrite		Quartz
	MINFILE	103I 221	17	461	J (J 1-2)	Noranda/Kuroko massive sulphide Cu-Pb-Zn	Besshi massive sulphide Cu-Zn	Disseminated	Stratiform	Showing			Cu, Au, Fe	Chalcopyrite, Pyrite		
	MINFILE	103I 014	18	1205	WEDEENE (IRON MOUNTAIN)	Fe skarn		Massive	Disseminated	Developed Prospect			Fe, Magnetite, Cu	Pyrite, Chalcopyrite		Magnetite
	ARIS	16860	18	182	J 1-2						1987		Cu, Au	Chalcopyrite, Pyrite		Magnetite
Sub - Region #2	MINFILE	103I 138	43	-80	R & F			Unknown		Showing			Cu	Unknown		
	MINFILE	093L 174	48	8762	GSC 1971 - 6	Volcanic redbed Cu	Subvolcanic Cu-Ag-Au (As-Sb)	Unknown		Showing			Cu	Chalcocite, Bornite		Malachite
	MINFILE	103I 212	48	7872	BOLT	Porphyry Cu +/- Mo +/- Au	Porphyry Mo (Low F-type)	Vein	Disseminated	Showing			Cu, Mo, Ag	Pyrite, Chalcopyrite, Molybdenite		Specularite, Magnetite, Limonite, Hematite
	MINFILE	093L 173	48	9079	HOPE PEAK	Volcanic redbed Cu		Unknown		Showing			Cu	Bornite	Calcite	Malachite
	MINFILE	103I 170	48	9419	HUMP	Porphyry Mo (Low F- type)	Subvolcanic Cu-Ag-Au (As-Sb)	Vein	Disseminated	Showing			Mo, Cu, Ag	Molybdenite, Pyrite, Chalcopyrite		Magnetite, Quartz
	MINFILE	103I 164	75	-305	HOULT	Porphyry Mo (Low F- type)		Vein	Disseminated	Showing			Mo, Cu, Ag	Molybdenite, Chalcopyrite, Pyrite, Pyrrhotite		
	ARIS	11378	76	346	HOULT						1983	Geochemical Report	Mo			

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub Region #2 (Cont.'d)	ARIS	09713	76	346	HOULT						1981	Geological, Geochemical and Geophysical Report				
	ARIS	08205	76	346	HOULT						1980	Reconnaissance Geochemical Survey				
Sub-Region #3	MINFILE	093L 055	101	5757	SAL (FOG)	Volcanic redbed Cu		Disseminated	Stockwork	Showing			Cu, Ag, Au	Chalcopyrite, Chalcocite, Pyrite		Epidote
	MINFILE	093L 054	101	7430	CHLORE (HOPE)	Porphyry Cu +/- Mo +/- Au	Porphyry Mo (Low F-type)	Stockwork	Disseminated	Showing			Cu, Mo	Chalcopyrite, Molybdenite, Pyrrhotite, Pyrite		
	ARIS	16060	138	805	Rookie 1						1987	Soil Sample Geochemistry	Cu, Zn, Ag (and As)	Pyrite		
	MINFILE	093L 159	142	-5197	CHISHOLM LAKE	Bituminous coal		Stratiform		Showing			Coal			
	MINFILE	093L 160	146	-2329	GOLDSTREA M (SOUTH CHISHOLM LAKE)	Bituminous coal		Stratiform		Showing			Coal			
	ARIS	24892	155	1575	Pimpernel						1997	MaxMin Survey				
	MINFILE	093L 221	156	2505	HAGAS (HAG)	Subvolcanic Cu-Ag-Au (As-Sb)	Vocanic redbed Cu	Vein	Disseminated	Showing			Cu, Au, Ag, Zn, Pb, Cd	Pyrite, Tetrahedrite, Chalcopyrite, Argentite		Copper
	ARIS	25485	156	1765	Pimpernel						1998	Geochemical Reconnaissance Assessment	Fe, Mn, As, Cu			
	ARIS	15787	156	1765	Frost (Hem)						1986					
	ARIS	12480	156	1765	HAG 2						1983					
	ARIS	08447	156	1277	HAGAS (HEM)						1980	Exporation Results	Cu	Pyrite, Chalcopyrite		
	ARIS	06658	156	1277	HAGAS (HEM)						1977					
	ARIS	06233	156	1277	HAGAS						1977					
	ARIS	04194	156	1277	HAGAS						1973					

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub-Region #3 (Cont'd)	ARIS	15175	157	1700	HAG 2						1986	Geochemical Assessment	As, Cd, Cu, K, Pb, Zn, Hg (Ag, B, Be, Mn, Ni, Sb)			
	ARIS	27671	157	167	Pimper (Pimpernel)						2005	Geochemical Reconnaissance Assessment	Cu, Ag, Au		Carbonates	Limonite
	ARIS	07646	157	-1961	FRY (PAN)						1979	Report of Drilling	useless			
	ARIS	13097	158	1869	HAGAS						1984	Heavy Minerals Geochemical Assessment	Hg, As, Sb, Bi, Cd			
	ARIS	07014	159	1297	JAY						1978	Diamand Drill Report	useless			
	ARIS	06554	159	1297	JAY						1977					
	MINFILE	093L 182	159	-1850	GSC 1971 - 14	Volcanic redbed Cu		Unknown		Showing			Cu			Malachite, Epidote
	ARIS	14029	161	1822	FEN 224 (FEN 226)						1985	Diamand Drilliing	Ag, Pb, Zn	Galena, Sphalerite, Pyrite	Calcite	
	MINFILE	093L 004	163	1489	CODE (FEN)	Noranda/Kuroko massive sulphide Cu-Pb-Zn	Polymetallic veins Ag-Pb-Zn+/-Au	Stockwork	Disseminated	Showing			Zn, Pb, Ag	Sphalerite, Galena, Pyrite		
	ARIS	11286	163	1471	RED						1983	Geophysical Surveys		Pyrite, Sphalerite, Galena		
	ARIS	09647	163	1471	CODE (RED)						1981					
	ARIS	10156	163	1471	CODE (RED)						1981					
	ARIS	10003	163	1471	RED						1981					
	ARIS	08247	163	1471	CODE (FEN)						1980					
	ARIS	08354	163	1471	CODE (COF)						1980					
	ARIS	09605	163	1471	CODE (RED)						1980					
	ARIS	07821	163	1471	COF (FEN)						1979					
	ARIS	06320	163	1471	RED						1976					

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub-Region #3 (Cont'd)	ARIS	03646	163	1471	CODE (COF)						1972					
	ARIS	03257	163	1471	CODE (FEN)						1971					
	ARIS	02898	163	1471	CODE (FEN)						1970					
	ARIS	02734	163	1471	CODE (FEN)						1970					
	ARIS	01229	163	1471	CODE						1967					
	ARIS	00799	163	1471	CODE						1965					
	ARIS	03346	164	256	RD						1971	Geophysical and Geochemical Report	useless			
	ARIS	04807	170	69	VERN						1973	Exploration Program	Cu, Mo			
	ARIS	13267	172	232	AIVEN						1984	Soil Geochemistry	Ag, Au			
	MINFILE	093L 327	176	-40	SILVER STREAK (SILVER SLEEPER)			Vein	Disseminated	Prospect			Ag, Cu, Pb, Zn	Tetrahedrite, Galena, Sphalerite, Chalcopyrite, Pyrite	Calcite	
	ARIS	20651	177	1235	Eric (Eric 3)						1990	Induced Polarization Geophysics		Pyrite, Tetrahedrite, Galena, Sphalerite, Chalcopyrite	Carbonates	
	ARIS	02427	184	-1287	JAN (MIS-LOCATION)						1969	Geochemical Report	Cu, Zn, Mo, Pb, Ag			
	MINFILE	093L 265	184	2139	IRK (WL)	Polymetallic veins Ag-Pb-Zn+/-Au	Sandstone Pb	Vein	Disseminated	Showing			Ag, Zn, Pb, Cu, Barite	Sphalerite, Galena, Tetrahedrite, Chalcopyrite, Pyrite	Carbonate	Barite
	ARIS	10449	185	-1614	IRK						1982	VLF-EM and Total Field Ground Magnetic Surveys	useless			
	ARIS	10949	185	-1614	IRK						1982	Test Pitting and Geochemical Sampling	Cu, Ag, Zn, Pb, Mo, As, Cd	Pyrite, Galena, Sphalerite	Calcite	

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub-Region #3 (Cont'd)	ARIS	08857	185	-1614	IRK (JEN)						1980					
	ARIS	07954	185	-1614	IRK						1979					
	ARIS	07381	185	-1614	IRK						1979					
	ARIS	07072	185	-1614	IRK						1978					
	ARIS	06477	185	-1614	IRK						1977					
	ARIS	06283	185	-1614	IRK						1976					
	ARIS	04190	185	-1614	GOOF (GROG)						1972					
	ARIS	03766	185	-1614	GOOF (GROG)						1972					
	ARIS	03136	185	-1614	GROG (JAN)						1970					
	ARIS	12753	185	-1265	IRK 3 (IRK 6)						1984	Geochemical and Geological Exploration Program	Ag	Galena, Sphalerite, Pyrite, Chalcopyrite		
	ARIS	12460	191	332	SWISS 1-2						1984	Geophysical Report	Ag, Cu			
	ARIS	03011	199	-1987	RAY						1970	Geophysical Report				
	ARIS	02318	199	-1987	RAY						1969					
	ARIS	10851	200	1120	GILLIAN WEST						1981	Diamond Drilling	Cu, Pb, Zn, Ba	Pyrite	Carbonates	
	ARIS	08189	201	247	DIANE (DOUGLAS)						1979	Assessment Report	useless			
	ARIS	06151	201	247	GILLIAN EAST (GILLIAN WEST)						1976	Geological, Geochemical, Geophysical Report	Cu, Ag	Pyrite, Pyrrhotite, Chalcopyrite, Tetrahedrite, Sphalerite		Limonite
	ARIS	06148	201	247	GILLIAN WEST						1976					
	ARIS	02863	201	247	CMGW (GAIL)						1970					

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub - Region #3 (Cont'd)	ARIS	02726	203	61	FKE (NRG)						1970	Geochemical Report	Cu, Zn			
	ARIS	02239	203	61	FKE (NRG)						1969	Assessment Work		Not further specified, but present		
	ARIS	08828	203	920	TOW						1980					
	MINFILE	093L 260	206	-1742	SAM (NWB)					Showing			Ag, Zn	Pyrite, Sphalerite, Chalcopyrite, Tetrahedrite, Arsenopyrite	Calcite	
	MINFILE	093L 001	208	-5631	EQUITY SILVER (SAM GOOSLY)	Subvolcanic Cu-Ag-Au (As-Sb)		Vein	Disseminated	Past Producer			Ag, Cu, Au, Sb, As	Tetrahedrite, Chalcopyrite, Argentite, Sphalerite, Galena, Pyrargyrite, Arsenopyrite, Pyrite, Pyrrhotite		Magnetite, Hematite, Specularite
	MINFILE	093L 256	209	-2380	GAUL (SAM)	Subvolcanic Cu-Ag-Au (As-Sb)		Vein	Breccia	Showing			Ag, Cu, Zn	Pyrite, Chalcopyrite, Tetrahedrite,Sphalerite, Galena	Carbonate	
	ARIS	14761	210	235	FEB						1986	Percussion Drill Report		Iron Pyrites		Magnetite
	ARIS	14603	212	396	OCT 2						1986	Percussion Drill Report	useless			
	MINFILE	093L 313	213	-1899	DINA (DINA 1-3)	Subvolcanic Cu-Ag-Au (As-Sb)		Breccia	Disseminated	Showing			Cu, Ag	Pyrite, Tetrahedrite, Chalcopyrite		
	MINFILE	093L 263	213	-1999	GOOSLY LAKE			Disseminated		Showing			Ti			Ilmenite
	MINFILE	093K 062	248	1698	GAMBLE (CYMRIC)			Vein		Showing			Ag, Au, Zn, Pb	Sphalerite, Galena		
	MINFILE	093K 061	269	-1547	KATHLEEN JANE			Unknown		Showing			Zn	Sphalerite		
	ARIS	19960	272	-1045	Sinkut 1-2						1990	Geological, Geochemical Report	Au	Pyrite		
	MINFILE	093K 017	287	955	LORNE	Porphyry Mo (Low F- type)		Vein		Showing			Mo, Cu	Molybdenite, Chalcopyrite, Pyrite		

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub - Region #3 (Cont'd)	ARIS	01235	287	1167	LORNE						1967	Supplementary Induced Polarization Survey	useless			
	ARIS	01018	287	1167	LORNE						1966					
	ARIS	00787	287	1167	LORNE						1965	Geological, Geochemical, Geophysical Report		Pyrite, Molybdenite, Chalcopyrite		Hematite
	ARIS	08314	289	-186	STORM						1980	Percussion Drilling Report	useless			
	ARIS	06463	290	1241	MOLY						1977	Geochemical Survey	Mo	Molybdenite		
	MINFILE	093K 015	293	1309	RON (AX)	Porphyry Mo (Low F- type)		Disseminated	Vein	Showing			Mo	Molybdenite, Pyrite		
	ARIS	00555	293	1972	AB (AX)						1964	Geochemical Survey	Mo			
	ARIS	06266	293	131	ANY						1977					
	ARIS	03466	293	131	ANN						1970	Geophysical and Geochemical Report	Mo			
	ARIS	00867	294	194	END (GARNETT)						1966	Geochemical Prospecting				
	MINFILE	093K 016	294	2613	GEM (ANN)	Porphyry Mo (Low F-Type)		Vein		Showing			Mo	Molybdenite, Pyrite		
	ARIS	08136	294	-212	AX (JILL)						1980	Diamond Drilling Assessment				
	ARIS	07738	294	-212	AX (JEN)						1979					
	ARIS	08460	296	1466	OVAL						1980	Percussion Drilling Report	Mo (too low)			
	ARIS	02408	296	1466	OVAL						1970					
	MINFILE	093K 008	296	4372	DENAK/ENDAKO (DENAK)	Porphyry Mo (Low F- type)		Stockwork	Vein	Past Producer			Mo	Molybdenite, Pyrite	Calcite	Magnetite
	ARIS	00559	297	-221	MS						1964	Geochemical Survey	Mo			

Region	Type	Report Number	KP	Distance from Pipeline[1] (m)	Name (Second Name)	Deposit Type (1)	Deposit Type (2)	Deposit Character (1)	Deposit Character (2)	Status - MINFILE	Report Year ARIS	Type of Work - ARIS	Commodities - MINFILE / Anomalies - ARIS	Sulphides	Carbonates	Other Minerals
Sub - Region #3 (Cont'd)	MINFILE	093K 006	298	4880	ENDAKO (ENDAKO MINE)	Porphyry Mo (Low F- type)		Stockwork	Vein	Producer			Mo, Cu, Zn, W, Bi	Molybdenite, Pyrite, Chalcopyrite, Sphalerite, Bornite, Bismuthinite		Magnetite, Scheelite, Beryl
	ARIS	01979	300	-1045	BONUS						1969	Geophysical Assessment				
	MINFILE	093K 094	302	1843	CASEY PEGMATITE			Discordant		Showing			Feldspar, Mica, Silica			Orthoclase, Plagioclase, Biotite, Quartz
	ARIS	03196	302	1141	DOLLY (MIST)						1971	Geochemical Report				
	ARIS	00568	302	1,499	PAT						1964					
	ARIS	20967	306	438	Jed 1-4 (Jed 15-18)						1991	Prospecting and Soil Geochemistry	Au, Zn			
	MINFILE	093K 045	344	-707	TEAD (BIG MARCELLE)			Layered	Massive	Showing			Mn			Pyrolusite, Psilomelane
	MINFILE	093K 044	346	-1603	GODWIN			Vein		Showing			Mn			Pyrolusite, Psilomelane

Notes:

Blue shaded ARIS reports are from the same location, but different years.

[1] Positive (negative) number = ARIS/MINFILE occurrence is located on the right (left) side of the proposed pipeline moving East along the pipeline route.

TABLE 1.2

DESCRIPTION OF GEOLOGICAL UNITS

UNIT	AGE	NAME	ROCK TYPE	ROCK CLASS
CmOKlc	Cambrian to Ordovician	Kechika Group	limestone, slate, siltstone, argillite	sedimentary rocks
DPAsf	Late Pennsylvanian to Late Permian	Asitka Group	mudstone, siltstone, shale fine clastic sedimentary rocks	sedimentary rocks
DPSlm	Devonian to Permian	Stikine Assemblage	limestone, marble, calcareous sedimentary rocks	sedimentary rocks
DPSvc	Devonian to Permian	Stikine Assemblage	volcaniclastic rocks	volcanic rocks
DTrT	Late Devonian to Late Triassic	Taltapin Metamorphic Complex	lower amphibolite/kyanite grade metamorphic rocks	metamorphic rocks
DTrTma	Late Devonian to Late Triassic	Taltapin Metamorphic Complex	limestone, marble, calcareous sedimentary rocks	metamorphic rocks
EBo	Eocene	Boundary Stock	granodioritic intrusive rocks	intrusive rocks
EEBvb	Eocene	Endako Group - Buck Creek Formation	basaltic volcanic rocks	volcanic rocks
EEG	Eocene	Endako Group - Goosly Lake Formation	alkaline volcanic rocks	volcanic rocks
EEG	Eocene	Nechako Plateau Group - Goosly Lake Formation	andesitic volcanic rocks	volcanic rocks
EEv	Eocene to Oligocene	Nechako Plateau Group - Endako Formation	undivided volcanic rocks	volcanic rocks
EEva	Eocene to Oligocene	Nechako Plateau Group - Endako Formation	andesitic volcanic rocks	volcanic rocks
Eg	Eocene	Coast Plutonic Complex(?)	intrusive rocks, undivided	intrusive rocks
EGo	Eocene	Goosly Plutonic Suite	monzodioritic to gabbroic intrusive rocks	intrusive rocks
EJCGog	Early Jurassic	Central Gneiss Complex	orthogneiss metamorphic rocks	metamorphic rocks
EJTpgd	Early Jurassic	Topley Plutonic Suite	granodioritic intrusive rocks	intrusive rocks
EKdr	Early Cretaceous	Unnamed	dioritic intrusive rocks	intrusive rocks
EKEnH	Early Cretaceous	Endako Batholith - Hanson Lake Phase	granodioritic intrusive rocks	intrusive rocks
EKMdr	Early Cretaceous	McCauley Island Plutonic Suite	dioritic intrusive rocks	intrusive rocks
EKMqm	Early Cretaceous	McCauley Island Plutonic Suite	quartz monzonitic intrusive rocks	intrusive rocks
EMiE	Eocene to Lower Miocene	Endako Group	basaltic volcanic rocks	volcanic rocks
ENg	Eocene	Nanika Plutonic Suite	intrusive rocks, undivided	intrusive rocks
ENqm	Eocene	Nanika Plutonic Suite	quartz monzonitic intrusive rocks	intrusive rocks
EO	Eocene	Ootsa Lake Group	rhyolite, felsic volcanic rocks	volcanic rocks
EO	Eocene to Oligocene	Nechako Plateau Group - Ootsa Lake Formation	rhyolite, felsic volcanic rocks	volcanic rocks
EOH	Eocene to Oligocene	Nechako Plateau Group - Ootsa Lake Formation - Hicks Hill Dacite	dacitic volcanic rocks	volcanic rocks

TABLE 1.2 (CONT'D)

DESCRIPTION OF GEOLOGICAL UNITS

UNIT	AGE	NAME	ROCK TYPE	ROCK CLASS
EOlEs	Eocene to Oligocene	Nechako Plateau Group	undivided sedimentary rocks	sedimentary rocks
EOva	Eocene to Oligocene	Nechako Plateau Group - Ootsa Lake Formation	andesitic volcanic rocks	volcanic rocks
EOvf	Eocene to Oligocene	Nechako Plateau Group - Ootsa Lake Formation	rhyolite, felsic volcanic rocks	volcanic rocks
Eqm	Eocene	Coast Plutonic Complex(?)	quartz monzonitic intrusive rocks	intrusive rocks
Eqp	Eocene	Unnamed	high level quartz phyric, felsitic intrusive rocks	intrusive rocks
ESR	Eocene	Sam Ross Creek Pluton	granite, alkali feldspar granite intrusive rocks	intrusive rocks
ETgd	Paleogene	Unnamed	granodioritic intrusive rocks	intrusive rocks
ETSBE	Paleogene	Strohn Creek, Mt Bolom and Ear Lake Plutons	granite, alkali feldspar granite intrusive rocks	intrusive rocks
JFgr	Middle to Late Jurassic	Endako Batholith - Francois Lake Suite	granite, alkali feldspar granite intrusive rocks	intrusive rocks
JKP	Jurassic to Cretaceous	Poison Pluton	quartz dioritic intrusive rocks	intrusive rocks
Jqm	Jurassic	Unnamed	quartz monzonitic intrusive rocks	intrusive rocks
JSLO	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Overlander Phase	dioritic intrusive rocks	intrusive rocks
JTqd	Jurassic to Tertiary	Unnamed	quartz dioritic intrusive rocks	intrusive rocks
KTS	Cretaceous to Tertiary	Sifton Formation	undivided sedimentary rocks	sedimentary rocks
KWpe	Cretaceous	Wolverine Range Plutonic Suite	pegmatitic intrusive rocks	intrusive rocks
lCmG	Lower Cambrian	Gog Group	undivided sedimentary rocks	sedimentary rocks
lCmGlc	Lower Cambrian	Gog Group	limestone, slate, siltstone, argillite	sedimentary rocks
LJdr	Late Jurassic	Unnamed	dioritic intrusive rocks	intrusive rocks
LJEnS	Middle to Late Jurassic	Endako Batholith - Slug Lake Phase	dioritic intrusive rocks	intrusive rocks
LJFC	Late Jurassic	Endako Batholith - Francois Lake Suite - Endako Subsuite - Casey Phase	granite, alkali feldspar granite intrusive rocks	intrusive rocks
LJFE	Late Jurassic	Endako Batholith - Francois Lake Suite - Endako Subsuite - Endako Phase	granodioritic intrusive rocks	intrusive rocks
LJFE	Middle to Late Jurassic	Endako Batholith - Francois Lake Suite - Endako Subsuite	granodioritic intrusive rocks	intrusive rocks
LJFG	Middle to Late Jurassic	Endako Batholith - Francois Lake Suite - Glenannan Subsuite - Glenannan Phase	granite, alkali feldspar granite intrusive rocks	intrusive rocks
LJFN	Late Jurassic	Endako Batholith - Francois Lake Suite - Glenannan Subsuite - Nithi Phase	quartz monzonitic to monzogranitic intrusive rocks	intrusive rocks
LJFT	Middle to Late Jurassic	Endako Batholith - Francois Lake Suite - Glenannan Subsuite - Tatin Lake Subphase	granite, alkali feldspar granite intrusive rocks	intrusive rocks

TABLE 1.2 (CONT'D)

DESCRIPTION OF GEOLOGICAL UNITS

UNIT	AGE	NAME	ROCK TYPE	ROCK CLASS
lJHE	Lower Jurassic	Hazelton Group - Eagle Peak Formation	volcaniclastic rocks	volcanic rocks
lJHNk	Lower Jurassic	Hazelton Group - Nilkitkwa Formation	undivided sedimentary rocks	sedimentary rocks
lJHsv	Early to Middle Jurassic	Hazelton Group	marine sedimentary and volcanic rocks	sedimentary rocks
lJHT	Lower Jurassic	Hazelton Group - Telkwa Formation	calc-alkaline volcanic rocks	volcanic rocks
lJHva	Early to Middle Jurassic	Hazelton Group	andesitic volcanic rocks	volcanic rocks
LKBdr	Late Cretaceous	Bulkley Plutonic Suite	dioritic intrusive rocks	intrusive rocks
LKBfp	Late Cretaceous	Bulkley Plutonic Suite	feldspar porphyritic intrusive rocks	intrusive rocks
LKBg	Late Cretaceous	Bulkley Plutonic Suite	intrusive rocks, undivided	intrusive rocks
LKBqd	Late Cretaceous	Bulkley Plutonic Suite	quartz dioritic intrusive rocks	intrusive rocks
LKBqp	Late Cretaceous	Bulkley Plutonic Suite	high level quartz phyric, felsitic intrusive rocks	intrusive rocks
LKEnFLgd	Late Cretaceous	Endako Batholith - Fraser Lake Suite - Mouse Phase	granodioritic intrusive rocks	intrusive rocks
LKEnFLqm	Early Cretaceous	Endako Batholith - Fraser Lake Suite - Fraser Phase	quartz monzonitic to monzogranitic intrusive rocks	intrusive rocks
LKEnP	Late Cretaceous	Endako Batholith - Pinkut Phase	tonalite intrusive rocks	intrusive rocks
LKgd	Late Cretaceous	Unnamed	granodioritic intrusive rocks	intrusive rocks
LKKP	Late Cretaceous	Kasalka Plutonic Suite	granodioritic intrusive rocks	intrusive rocks
LKPeqd	Late Cretaceous to Paleocene	Unnamed	quartz dioritic intrusive rocks	intrusive rocks
LKPeQqd	Late Cretaceous to Paleocene	Quottoon Plutonic Suite	quartz dioritic intrusive rocks	intrusive rocks
lKS	Lower Cretaceous	Skeena Group	undivided sedimentary rocks	sedimentary rocks
lKSKC	Lower Cretaceous	Skeena Group - Kitsuns Creek Formation	coarse clastic sedimentary rocks	sedimentary rocks
lKSN	Lower Cretaceous	Skeena Group - Mt. Ney Volcanics	undivided volcanic rocks	volcanic rocks
lKSRs	Lower Cretaceous	Skeena Group - Red Rose Formation	coarse clastic sedimentary rocks	sedimentary rocks
lKSRvf	Early Cretaceous	Skeena Group - Rocky Ridge Formation - Subvolcanic Rhyolite Domes	rhyolite, felsic volcanic rocks	volcanic rocks
lKSsc	Early Cretaceous	Skeena Group	coarse clastic sedimentary rocks	sedimentary rocks

TABLE 1.2 (CONT'D)

DESCRIPTION OF GEOLOGICAL UNITS

UNIT	AGE	NAME	ROCK TYPE	ROCK CLASS
lmJH	Early to Middle Jurassic	Hazelton Group	undivided volcanic rocks	volcanic rocks
lmJHSH	Early to Middle Jurassic	Hazelton Group - Saddle Hill Formation	undivided volcanic rocks	volcanic rocks
lMPSM	Lower Mississippian to Permian	Slide Mountain Complex	basaltic volcanic rocks	volcanic rocks
lOM	Lower Ordovician	Monkman Quartzite	quartzite, quartz arenite sedimentary rocks	sedimentary rocks
LTrBus	Late Triassic	Butterfield Lake Intrusive Complex	serpentinite ultramafic rocks	metamorphic rocks
LTrgd	Late Triassic	Unnamed	granodioritic intrusive rocks	intrusive rocks
LTrSC	Late Triassic	Stern Creek Plutonic Suite - Stern Creek Phase	dioritic intrusive rocks	intrusive rocks
MiCCl	Miocene	Chilcotin Group - Cheslatta Lake Complex	alkaline volcanic rocks	volcanic rocks
MiPlCvb	Miocene to Pleistocene	Chilcotin Group	basaltic volcanic rocks	volcanic rocks
MJKFqp	Middle Jurassic to Early Cretaceou	Endako Batholith - Francois Lake Suite	high level quartz phyric, felsitic intrusive rocks	intrusive rocks
MJqd	Middle Jurassic	Unnamed	quartz dioritic intrusive rocks	intrusive rocks
MJSLB	Early Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Boer Phase	quartz dioritic intrusive rocks	intrusive rocks
MJSLB	Early Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Boer Phase	quartz dioritic intrusive rocks	intrusive rocks
MJSLC	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Caledonia Phase	quartz monzonitic to monzogranitic intrusive rocks	intrusive rocks
MJSLM	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - McKnab Phase - Sutherland Subphase	quartz dioritic intrusive rocks	intrusive rocks
MJSLM	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - McKnab Phase	quartz dioritic intrusive rocks	intrusive rocks
MJSLqd	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite	quartz dioritic intrusive rocks	intrusive rocks
MJSLSh	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Sheraton Phase	quartz monzonitic to monzogranitic intrusive rocks	intrusive rocks
MJSLSqd	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Stellako Phase	quartz dioritic intrusive rocks	intrusive rocks
MJSLSt	Middle to Late Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Stag Lake Phase	gabbroic to dioritic intrusive rocks	intrusive rocks
MJSLSu	Middle to Late Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Sugarloaf Phase	granodioritic intrusive rocks	intrusive rocks
MJSLTi	Middle Jurassic	Endako Batholith - Stag Lake Plutonic Suite - Tintagel Phase	granite, alkali feldspar granite intrusive rocks	intrusive rocks
MJTqd	Middle Jurassic	Trapper Plutonic Suite	quartz dioritic intrusive rocks	intrusive rocks

TABLE 1.2 (CONT'D)

DESCRIPTION OF GEOLOGICAL UNITS

UNIT	AGE	NAME	ROCK TYPE	ROCK CLASS
muJHNa	Middle Jurassic to Upper Jurassic	Hazelton Group - Nanika Volcanics	rhyolite, felsic volcanic rocks	volcanic rocks
muTrTsf	Middle Triassic to Upper Triassic	Takla Group	mudstone, siltstone, shale fine clastic sedimentary rocks	sedimentary rocks
OlPicg	Oligocene to Pliocene	Unnamed	conglomerate, coarse clastic sedimentary rocks	sedimentary rocks
PCSvb	Mid-Permian	Cache Creek Complex - Sowchea Succession	basaltic volcanic rocks	volcanic rocks
PeEs	Paleocene to Eocene	Unnamed	undivided sedimentary rocks	sedimentary rocks
PJCS	Early Permian to Late Jurassic	Cache Creek Complex - Sowchea Succession	mudstone, siltstone, shale fine clastic sedimentary rocks	sedimentary rocks
PJSgs	Early Permian to Early Triassic	Sitlika Assemblage - Volcanic Unit	greenstone, greenschist metamorphic rocks	metamorphic rocks
PnTrCbs	Early Permian to Late Triassic	Cache Creek Complex	blueschist metamorphic rocks	metamorphic rocks
PnTrClm	Pennsylvanian to Triassic	Cache Creek Complex	limestone, marble, calcareous sedimentary rocks	sedimentary rocks
PnTrCmd	Pennsylvanian to Triassic	Cache Creek Complex	mudstone/laminite fine clastic sedimentary rocks	sedimentary rocks
PnTrCP	Early Pennsylvanian to Middle Tria	Cache Creek Complex - Pope Succession	limestone, marble, calcareous sedimentary rocks	sedimentary rocks
PnTrCPvb	Early Pennsylvanian to Middle Tria	Cache Creek Complex - Pope Succession	basaltic volcanic rocks	volcanic rocks
PnTrCvb	Pennsylvanian to Triassic	Cache Creek Complex	basaltic volcanic rocks	volcanic rocks
PTrCch	Early Permian to Early Triassic	Cache Creek Complex	chert, siliceous argillite, siliciclastic rocks	sedimentary rocks
PTrCRgb	Early Permian to Late Triassic	Cache Creek Complex - Rubyrock Igneous Complex	gabbroic to dioritic intrusive rocks	intrusive rocks
PTrCSgs	Early Permian to Late Triassic	Cache Creek Complex - Sowchea Succession	greenstone, greenschist metamorphic rocks	metamorphic rocks
PTrCTum	Early Permian to Late Triassic	Cache Creek Complex - Trembleur Ultramafite Unit	ultramafic rocks	ultramafic rocks
PTrCTus	Early Permian to Late Triassic	Cache Creek Complex - Trembleur Ultramafite Unit	serpentinite ultramafic rocks	metamorphic rocks
PzDSqd	Paleozoic	Delta River/Swede Point Plutonic Suite	quartz dioritic intrusive rocks	intrusive rocks
PzTCog	Paleozoic to Tertiary	Central Gneiss Complex	orthogneiss metamorphic rocks	metamorphic rocks
Tgd	Tertiary	Unnamed	granodioritic intrusive rocks	intrusive rocks
TrCSva	Late Triassic	Cache Creek Complex - Sowchea Succession	andesitic volcanic rocks	volcanic rocks
TrCW	Middle to Late Triassic	Cache Creek Complex - Whitefish Succession	limestone, marble, calcareous sedimentary rocks	sedimentary rocks

TABLE 1.2 (CONT'D)

DESCRIPTION OF GEOLOGICAL UNITS

UNIT	AGE	NAME	ROCK TYPE	ROCK CLASS
TrJTvb	Triassic to Jurassic	Takla Group	basaltic volcanic rocks	volcanic rocks
uJBAm	Upper Jurassic	Bowser Lake Group - Ashman Formation	mudstone, siltstone, shale fine clastic sedimentary rocks	sedimentary rocks
uKESu	Upper Cretaceous to Eocene	Sustut Group	argillite, greywacke, wacke, conglomerate turbidites	sedimentary rocks
uKEWmc	Upper Cretaceous to Eocene	Wolverine Metamorphic Complex	calcsilicate metamorphic rocks	metamorphic rocks
uKEWpg	Upper Cretaceous to Eocene	Wolverine Metamorphic Complex	paragneiss metamorphic rocks	metamorphic rocks
uKK	Cretaceous	Kasalka Group	andesitic volcanic rocks	volcanic rocks
uKK	Late Cretaceous	Kasalka Group	andesitic volcanic rocks	volcanic rocks
uKKsc	Late Cretaceous	Kasalka Group	coarse clastic sedimentary rocks	sedimentary rocks
uKs	Late Cretaceous	Unnamed	undivided sedimentary rocks	sedimentary rocks
uKva	Late Cretaceous	Unnamed	andesitic volcanic rocks	volcanic rocks
uKvf	Late Cretaceous	Unnamed	dacitic volcanic rocks	volcanic rocks
uPrCmMqz	Upper Proterozoic to Cambrian	Misinchinka Group	quartzite, quartz arenite sedimentary rocks	sedimentary rocks
uTrJSs	Late Triassic to Early Jurassic	Sitlika Assemblage - Clastic Unit	undivided sedimentary rocks	sedimentary rocks
uTrJss	Late Triassic to Early Jurassic	Unnamed	undivided sedimentary rocks	sedimentary rocks
uTrJTz	Late Triassic to Early Jurassic	Tezzeron Sequence	argillite, greywacke, wacke, conglomerate turbidites	sedimentary rocks
uTrTca	Upper Triassic	Takla Group	calc-alkaline volcanic rocks	volcanic rocks
uTrTv	Late Triassic	Takla Group	undivided volcanic rocks	volcanic rocks
uTrv	Late Triassic to Early Jurassic	Unnamed	undivided volcanic rocks	volcanic rocks

TABLE 1.3

DISCUSSION OF MINFILE AND ARIS REPORTS WITHIN REGION 1 (KP 0 TO KP 42)

KP 0 – KP 20	The first showing, just past KP 05 and just outside the corridor of interest, is a skarn called Joan (MINEFILE 103I 172) that has been explored for tungsten (W), iron (Fe), copper (Cu) and nickel (Ni) in an andesite host rock of the Hazelton Group. Between ~KP 10 and KP 13 on the west side of the proposed pipeline and marginally outside the corridor of interest is a grouping of ARIS and MINFILE locations that tend to cluster along a fault within the Lower Jurassic Telkwa Formation metavolcanics of the Hazelton Group. The fault runs roughly parallel to and west of the pipeline in this section. The Billy Claim showing (MINFILE 103I 218) is within this cluster and is described as an epigenetic stockwork breccia of gold (Au)-pyrrhotite and polymetallic (Ag-Pb-Zn+/-Au) veins with associated pyrite over a strike length up to 4 km defined by surface exploration. Gold targets are within quartz-sericite zones described as containing up to 10-20% pyrite in a sericite schistose rock. Further north (parallel to ~ KP 17), and also within the Lower Jurassic Telkwa Formation is the prospect named Jeanette (MINFILE 103I 169). This prospect is again slightly more distal to the pipeline than the study-defined corridor, but due to its classification as a prospect it has been included in the evaluation. It is defined as a copper, silver, gold prospect with significant pyrite, pyrrhotite and chalcopyrite with associated quartz. Mineralization occurs as disseminations and fracture fillings within an altered andesite porphyry and quartz-sericite-chlorite phyllite that has been sheared and brecciated in places. The dimensions of the surface expression are roughly 1.3 km by 150 m. Roughly within the same section along the pipeline as Jeanette, but closer to it, is another group of occurrences. These occurrences are also hosted within the Hazelton Group within relatively close contact to the Coast Plutonic Complex, and are the Wedeene (MINFILE 103I 014) and J (MINFILE 103I 221, ARIS 16860) occurrences. Wedeene is a developed prospect described as massive and disseminated magnetite[1] skarn, with minor pyrite and chalcopyrite hosted in metavolcanics of the Middle Jurassic Hazelton Group intruded by a granodiorite stock. The granodiorite stock forms the core of Iron Mountain east of the pipeline corridor. The mineralized area is exposed over approximately 1.4 km, varying in width from 100 to 150m. The nearby J showing (MINFILE 103I 221, ARIS 16860) has been explored along the projected strike of the Wedeene magnetite skarn and is within the Lower Jurassic Hazelton Group. It has been explored for iron as well as for copper, and gold. It is defined as a massive sulphide (Noranda/Kuroko (Cu-Pb-Zn) and/or Besshi (Cu-Zn) types) and skarn (Cu and Au) systems. Exposure of this mineralization is reported along the CNR railway cut on the south side of the Wedeene River. It has had some degree of oxidation noted, with stratiform pyrite and pyrite-chalcopyrite and/or malachite mineralization is not extensive with a reported maximum width of about 0.5 m. Bands of pyrite ranging up to a few cm in thickness are reportedly common in the tuffs exposed along the river.
KP 20 – KP 42	The subsequent section of the pipeline corridor in Region 1 is underlain by Coast Plutonic Intrusions in which no MINFILE or ARIS reports are located.

[1] Note that magnetite skarn is an iron oxide mineral that does not produce acidity when weathered.

TABLE 1.4

DISCUSSION OF MINFILE AND ARIS REPORTS WITHIN REGION 2 (KP 42 TO KP 100)

KP 42 – KP 80	The first showing, at KP 43, is called R & F (MINFILE 103I 138), which was explored for Cu values. Very little is reported on this showing other than it is hosted in the package of granodiorite, quartz diorite and diorite units of the Coast Plutonic Complex. To the south of the corridor within the same lithological package (between KP 45 and KP 50) is a cluster of showings of molybdenum, copper and silver mineralization in quartz veins (MINFILE 103I 212 and 103I 170). Veins in this area are also hosted within granodiorite and quartz monzonite intrusions, which may be related to north trending faults. The second area of interest in this region is at KP 75 to 76 in which the Hoult and Hoult 3 Claims exist (MINFILE 103I 164, ARIS 11378, 8205). Mineralization in this area consists of molybdenite and chalcopyrite with associated pyrite and pyrrhotite. The dominant host rock is the Jurassic age Hazelton Group meta-volcanics, which have been intruded by the granites and granodiorites of the Coast Plutonic Complex. Mineralization is confined to the hornfelsed and propyllitically altered tuffs, flows and breccias, largely in fault or fissure-type quartz veins and disseminations within the granite near the contact metamorphic aureole. The area of mineralization is roughly 1 km by 600m by 350m, but economic grades are reported to be low (MINFILE 103I 164).
KP 80 – KP 100	There are no MINFILE or ARIS locations within the pipeline corridor in this section of Region 2; however there are a number of showings and assessment reports for work conducted on gossanous material south of the pipeline within the Lower Jurassic Telkwa Formation (Hazelton Group) near contacts with Eocene intrusions (MINFILE 093L 054, 093L 055, 093L 173, 093L 174).

TABLE 1.5

DISCUSSION OF MINFILE AND ARIS REPORTS WITHIN REGION 3 (KP 100 TO KP 468.5)

KP 100 – KP 155	Bedrock of the first ~55 km of Region 3 is mainly comprised of calc-alkaline volcanic rocks of the Lower Jurassic Hazelton Group, Telkwa Formation with no intensive alteration. Occasional intersections of undivided sedimentary rocks (Lower Cretaceous Skeena Group and a Paleocene to Eocene Unnamed Group) are seen. Only 1 assessment report is located within the corridor in the section from KP 100 to ~KP 150. A stream sediment sampling program reported anomalous levels of Cu, Zn, Ag and As, but soil samples collected in the late 1980's showed only slightly elevated concentrations (ARIS 16060). The same program did however report up to 2% pyrite in a forestry road excavation. Just north of the corridor of interest within the sedimentary rocks at ~ KP 145 are some showings for coal. The showings are called Chisholm Lake (MINFILE 093L 159) and Goldstream, or South Chisholm Lake (MINFILE 093L 160). The coal seams were up to ~ 1.7 m thick and thought to be part of the Telkwa coal measures contained within strata of a basin referred to as the Skeena Basin. Neither MINFILE report mentions the presence of pyrite or other suphides in the coal.
KP 155 – KP 285	The majority of the next section of the proposed pipeline corridor is underlain by a variety of volcanic rocks (andesitic, alkaline, basaltic and rhyolite felsics) of the Cretaceous Kasalka Group (mainly between KP 175 and KP 185 and between KP 251 and KP 275), and the Eocene Endako Group, Nechako Plateau Group and Ootsa Lake Group (between KP 185 and KP 250). These volcanic rocks are intersected by the Jurassic Endako Batholith quartz diorites and granites between KP 248 and KP 251 (Figure 6). The bedrock geology map also shows the presence of Late Cretaceous sedimentary units at the southern part of the corridor between KP 273 and KP 285. On the southern side of the corridor, from ~ KP 155 to KP 200 there are a number of small Eocene intrusions within volcanic packages (primarily Hazelton andesites). Alteration of the volcanics that occurred in association with the intrusions resulted in locally strong epidotization with associated chlorite, calcite and quartz, similar to that in which the Equity Silver Mines property is located. This has instigated a substantial amount of exploration activity in the area located between KP ~ 155 and 170. Work has included geochemical and geophysical surveys and diamond drilling programs (ARIS 24892, 25584). Recommendations generally include further exploration to look for at mineralization at depth, as a number of surface exposures (fractures and veins) are highly oxidized with elevated Fe and Mn oxides (ARIS 26761). Drilling conducted in the area intersected predominantly volcanic tuffs, rhyolite and andesite with some massive sulphides including pyrite, tetrahedrite, chalcopyrite, argentite and native copper (MINFILE 093L 221). The mineralization has been classified as epigenetic, epithermal. Some reports on drilling suggested that the geophysical anomalies are a result of thick overburden (ARIS 7014) or swamp sediment (ARIS 11286) rather than mineralization; however there are also a number of reports where drilling intersected disseminations and veinlets of galena, sphalerite and pyrite with quartz and calcite in a zones of intense sericite/clay alteration and weak to moderate pyritization (MINFILE 093L 004, ARIS 14029). The Fry Claim is on the northern side of the corridor in this same reach of the region that was drilled to evaluate a deep seated conductor at depths of ~ 100 to 120 metres. No significant mineralization was found, however stringers of pyrite and iron managanese oxides were seen in the drill core (ARIS 7646), Close to this claim, exploration in the early 1970's on a showing, reported malachite in association with epidote within the Telkwa Formation, but no significant information was provided (MINFILE 093L 182).

TABLE 1.5 (CONT'D)

DISCUSSION OF MINFILE AND ARIS REPORTS WITHIN REGION 3 (KP 100 TO KP 468.5)

KP 155 – KP 285 (cont'd)	The Silver Streak prospect (~KP 176) is located right on the pipeline. Exploration work conducted here has included trench sampling and drilling, reporting relatively good grades and geological and geophysical mapping on adjacent claims (ARIS 20651), which all target mineralization in a porous tuff unit of the Kasalka Formation. The prospect is a hydrothermal, volcanogenic vein and disseminated system hosted in Kasalka volcanics. Disseminated pyrite (1-2%), possible tetrahedrite (1-2%), galena (0-5%), sphalerite (trace) and chalcopyrite (trace) occur in a 9m thick tuff unit that has been subjected to carbonate alteration and silicification (MINFILE 093L 327, ARIS 20651). On the northern boundary of the corridor at ~ KP 185 is another cluster of reports. All appear to have been exploring the same target consisting of hydrothermal veins hosted in an andesitic tuff of the Francois Lake Group Tip Top Hill Formation that has been carbonate altered and silicified with mineralization consisting of low grade galena, sphalerite as well as chalcopyrite, pyrite and quartz veinlets (MINFILE 093L 265, ARIS 10449, 10949, 12753). Between roughly KP 190 and KP 205, some assessment reports were filed at locations very close to the proposed pipeline. In general it would appear that exploration in this area was conducted largely due to the resemblance of conditions to the nearby Equity Silver mine. Work included geochemical soil surveys (ARIS 2726), geological mapping (ARIS 6151), geophysics (ARIS 12460, 3011, 8189) and trenching and diamond drilling (ARIS 10851). Mapping reported that, with the exception of pyrite, there was no mineralization evident; however some geochemical and geophysical anomalies were identified. Drilling intersected locally abundant pyrite mineralization within and below an altered argillite unit and geochemistry on the drill core showed elevated background levels of certain metals (Ba, Cu, Pb and Zn). The geological setting and drilling results indicated the potential for mineralization in the area. The Equity Silver Mine is a past producer located between KP 205 and KP 220 on the northern boundary of the corridor and beyond. The area has been extensively explored with reports filed under the names Sam, Gaul, Sam Goosly, S.G., Main, Waterline, Southern Tail, Equity and Northern. Many assessment reports and MINFILE reports have been filed on the property (e.g. MINFILE 093L 001, 093L 260, 093L 256, 093L 313, ARIS 14761 and 14603). It was an epigenetic hydrothermal silver, copper, gold, antimony and arsenic mine hosted in the argillically altered Cretaceous Skeena Formation volcanics that were intruded by Eocene Goosly Intrusions. The main sulphides include pyrite, chalcopyrite, pyrrhotite and tetrahedrite with minor amounts of galena, sphalerite, argentite, minor pyrargyite and other silver sulphosalts with associated quartz, sericite, muscovite, pyrophyllite and dumortierite. ARD was discovered at the Equity Silver Mine in 1981 with average pH values of ~2.6 and elevated concentrations of metals. As a result a lime treatment plant was constructed and has been operating on the site to treat the drainage with expenditures in excess of $20 million, roughly $1.1 million annually (Aziz and Ferguson, undated). No ARIS or MINFILE reports have been filed east of the Equity Silver Mine from ~KP 220 to KP 249. At approximately KP 249 the Gamble showing is located, which is underlain by Lower Jurassic volcanics intruded by Upper Jurassic Francois Lake Suite, which are overlain by Upper Cretacious to Lower Tertiary Ootsa Lake Group volcanics. The showing consists of a quartz vein carrying sphalerite and galena with significant copper staining. It appears to be a relatively localized showing within the corridor and potentially related to showings reported south of the corridor.

TABLE 1.5 (CONT'D)

DISCUSSION OF MINFILE AND ARIS REPORTS WITHIN REGION 3 (KP 100 TO KP 468.5)

KP 155 – KP 285 (cont'd)	From KP 250 to ~KP 270 there has been no activity reported. The Kathleen Jane showing located at ~KP 270 is described as a zinc target within a hematitic fracture within an amygdaloidal andesite from the Ootsa Lake Formation. No sulphides were reported other than a speculation of sphalerite as the source for zinc. Between this location and ~ KP 289 the area is underlain by an unnamed late Cretaceous sedimentary unit, within which there is no reporting of exploration work.
KP 285 – KP 310	This sedimentary package is intersected by intrusives at ~ KP 289 and a large group of MINFILE occurrences and ARIS locations cluster between here and ~ KP 310 at the eastern edge of the intrusive suite(s). The eastern portion of the intrusives have been explored for gold in quartz stringer zones (ARIS 20,967) and for industrial minerals feldspar, mica and silica hosted in pegmatites (MINFILE 093K 094), however the vast majority of exploration in this section of the corridor has been for molybdenum +/- copper. This intrusive complex hosts a number of molybdenite occurrences, including the Endako Mine and the extension of this deposit known as the Denak Mine (MINFILE 093K 008). Exploration work in this area has been extensive, consisting of soil and stream sediment geochemistry, trenching, geophysics and drilling, generally focused on molybdenum and copper. Many of the assessment reports indicate that overburden (glacial ground moraine and glacio-fluvial deposits) are extensive in the area making rock sampling difficult (ARIS 6463, 867, 787, 555). Stream sediment and water samples in the area show anomalous levels of molybdenum (ARIS 787). Showings of molybdenite, chalcopyrite and pyrite in veins within the Francois Lake Intrusive Suite near fracture zones are reported with potassic alteration and oxidation evident (MINFILE 093K 017, 093K 016). Mineralization in the area is believed to be largely structurally controlled and related to the intersection of regional faults (ARIS 6463). Endako/Denak is Canada's largest molybdenum producer. It is hosted in a quartz monzonite with mineralization occurring in a stockwork hydrothermal, epigenetic porphyry. It is situated within the Late Jurassic Francois Lake batholith, which has at least ten phases within it. The orebody is elongate stockwork of quartz-molybdenite veins developed within the Endako quartz monzonite phase of the batholith. The primary sulphides are molybdenite with associated pyrite. Magnetite is also abundant. Minor chalcopyrite and traces of sphalerite, bornite, specularite and scheelite are also present. Alteration consists of pervasive kaolinization with envelopes of potassium feldspar and sericite (MINFILE 093K 008, 093K 006, ARIS 24627). Although it is a sulphide mineral mine, the balance of potentially acid generating and acid neutralizing minerals are such that the waste is not expected to generate ARD (Mineral Resources Education Program of BC, undated).
KP 310 – KP 350	The following 40 km of the prospected pipeline (between ~KP 310 and KP 350) are mostly underlain by a mixture of andesitic and rhyolite, felsic volcanic rocks of the Eocene to Oligocene Nechako Plateau Group and the Ootsa Lake Group. A wedge of sedimentary rocks defined as late Triassic to early Jurassic Sitlika Assemblage clastic unit is seen at ~ KP 340 to 344. Two showings (Godwin and Tead) are located at approximately marker KP 345 within the Cache Creek complex (MINFILE 093K 044, 093K 045). Both are manganese showings consisting of pyrolusite and psilomelane in deformed cherty quartzite beds. No sulphides or carbonates were reported.

TABLE 1.5 (CONT'D)

DISCUSSION OF MINFILE AND ARIS REPORTS WITHIN REGION 3 (KP 100 TO KP 468.5)

KP 350 – KP 469	The remaining section of the proposed corridor (KP 350 to KP 468.5) is underlain primarily by sedimentary rocks including some clastic units of the Jurassic Sitlika Assemblage as well as mudstones and siltstones of the Cache Creek Complex and the Takla Group. These sediments are intersected by some volcanic rocks of the Takla Group between KP 400 and KP 417 and between KP 447 and KP 468.5. There are no MINFILE or ARIS locations in this section of the proposed corridor.

TABLE 1.6

SUMMARY OF ARD/ML CLASSIFICATIONS BY SUB-SECTION

SUB-SECTION	LENGTH	CLASSIFICATION*	COMMENTS
KP 0 – KP 20	~ 20 km	Moderate	Regional vein type mineralization in the Hazelton Group unit; indications of copper and sulphides locally near the pipeline corridor at the contact with intrusives.
KP 20 – KP 42	~ 22 km	Low	No mineralization reported within the Coast Plutonic Complex; regionally low levels of metals.
KP 42 – KP 100	~ 58 km	Low	Regionally no mineralization reported within the Coast Plutonic Complex.
KP 75 – KP 76	~ 1 km	Moderate	One localized showing explored and reported sulphides at ~ KP 75 within the Hazelton Group Formation; anomalous Mo based on RGS data.
KP 100 – KP 150	~ 50 km	Low	Very little exploration work conducted in this reach, regionally low metals.
KP 150 – KP 185	~ 35 km	Moderate	Substantial exploration within the volcanics in close proximity to Eocene intrusives, sulphides and metals reported on a regional scale.
KP 185 – KP 250	~ 65 km	High	Location of Equity Silver Mine with known ARD/ML and active management, substantial alteration and mineralization within surrounding rocks.
KP 250 – KP 280	~ 30 km	Low	No occurrences within this reach reporting sulphides; regionally low levels of metals.
KP 280 – KP 310	~ 30 km	Moderate	Location of Endako/Denak Mines KP 286 to KP 292, some pyrite reported by generally lower sulphide content than Equity; regionally elevated Mo concentrations therefore ML rather than ARD potential identified.
KP 310 – end	~ 152 km	Low	Very little exploration, no sulphide occurrences reported within the sedimentary packages; regionally low levels of metals.

* High = corridor passes through a rock unit with nearby known mineralization consistent with acid generating sulphides and minerals of high metal leaching and metal mobility potential as indicated by MINFILE and Assessment Reports;

Moderate = corridor intersects a rock unit with indicated regional potential for elevated mineralization (e.g. gold, silver, copper, zinc) or localized levels of mineralization in close proximity to the corridor (e.g. small veining);

Low = corridor will intersect a rock unit with good buffering capacity (limestone) or regionally low mineralization.