## **APPLICATION**

## TO CONSTRUCT AN ALL-SEASON ROAD FROM THE CAMP TO THE MINERAL EXPLORATION SITE

AT

**MELIADINE WEST GOLD PROJECT, NUNAVUT** 

SUBMITTED TO:

THE KIVALLIQ INUIT ASSOCIATION and

THE NUNAVUT WATER BOARD

BY:

COMAPLEX MINERALS CORP. CALGARY, AB

December 2004

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#### 1.0 BACKGROUND INFORMATION

## **Location and Ownership**

The Meliadine West Gold Project is located on Inuit Owned Land approximately 35 km north west of Rankin Inlet in the Kivalliq Region of Nunavut. The Project is owned by Comaplex Minerals Corp. (78%) and Cumberland Resources Ltd. (22%).

## **Exploration History**

North Rankin Nickel Mines identified gold mineralization near Meliadine Lake during an exploration program for nickel and copper in the early 1960's. Exploration for gold in the area of the Meliadine West Gold Project has been continuous since 1989. The first mineral claims in the area were staked by Comaplex Minerals in 1988. Successive exploration programs by Asamera, Rio Algom, Comaplex, and WMC International between 1989 and 2003 identified significant gold mineralization with potential for commercial production. Figure 1 is a general location map also showing the configuration of existing and proposed facilities supporting ongoing gold exploration. Exploration to date has identified several significant prospects with the Tiriganiaq Zone showing grades and tonnage that justify underground exploration and potential feasibility level studies for future production. Efficient movement of personnel between camp and the underground exploration site will require a reliable all-season road (see Figure 1).

## **Project Management**

The Meliadine West Gold Project is managed by the following personnel;

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Comaplex Minerals Corp.

Calgary, AB

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Environment: Ben Hubert, M.Sc.<sup>1</sup>

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Comaplex Minerals Corp. December 2004

<sup>&</sup>lt;sup>1</sup> Consultant to Complex

## **Field Operations**

Construction Contractor: Local contractor(s) to be determined in contract tendering process

when permits are in place.

Camp Operations: Comaplex Minerals Corp.

The Meliadine West Gold Project Environmental Management System is provided in Appendix One (all appendices are on the CD included).

## **Project Review, Permits and Regulation**

The overall Project review and regulatory regime for land use proposals in Nunavut was established in the Nunavut Land Claims Agreement (NLCA).

The alignment of the road from camp to the Meliadine West Gold Project underground exploration site is situated entirely on Inuit Owned Land. The exploration to date has been conducted under land use permits issued by the land owner, Kivalliq Inuit Association (KIA), and the Nunavut Water Board for water use. Transportation contractors serving the Project have operated under permits issued by KIA allowing transport across KIA land. The exploration camp is situated on lands described in a commercial lease to Comaplex from KIA. The surface works of the underground exploration program will similarly be situated on a block of land under commercial lease with KIA. Environmental review and permitting requirements for the road construction activities described in this application are enumerated below.

- Kivalliq Inuit Association (KIA) Rankin Inlet, Nunavut; Luis Manzo, Chief Lands Officer. KIA authorizes surface land use and occupancy for the lands occupied by the Project; granular materials on Inuit Owned Land may be requested by way of a Quarry Permit; access over Inuit Owned Land is required for mobilizing construction equipment and required materials like fuel to the site.
- Nunavut Planning Commission (NPC) Taloyoak, Nunavut; Mr. Bob Lyall, Chair.

  NPC reviews land use proposals to assess compliance with approved regional land use plans pursuant to NLCA Article 11. The Keewatin Regional Land Use Plan prepared by NPC was approved in June 2000.
- Nunavut Impact Review Board (NIRB) Cambridge Bay, Nunavut; Albert Ehaloak, Acting Chair. NIRB will screen the proposed land use pursuant to NLCA Article 12 "...to determine whether it has significant impact potential....".
- Nunavut Water Board (NWB) Gjoa Haven, Nunavut; Mr. Thomas Kudloo, Chair.

  The NWB regulates and authorizes the use of water and related depositions of waste in Nunavut pursuant to NLCA Article 13. Water use for camp needs will be subject to a water use licence from the NWB; also, the road alignment will cross a small seasonal stream near the camp please see Figure 1.
- Indian and Northern Affairs Canada Iqaluit; Mr. Carl McLean
  Application for a quarry permit is made to INAC for granular materials from esker

islands in Meliadine Lake near the Project. A Land Use Permit is required for quarrying on Federal Crown Land (Please see copies of Quarry Application and Land Use Application in Appendix 2)

The Project will be completed in compliance with relevant laws of general application including:

- worker health and safety generally;
- mine safety.

## 2.0 PROJECT DESCRIPTION

This section provides more details and schedule for the work planned in this small local construction project. The program is based on proven northern construction methods that have been used successfully for road construction throughout Nunavut. No new technology or designs are proposed or required to complete the work described in this application.

It should be recognized that at the time of filing, Comaplex has not made a commitment to carry out the underground exploration program described here. All the preparatory work for this project is underway at this time in order to meet the permitting and logistics requirements for initiating underground exploration in Q1 December 2006. That schedule requires local road construction be completed during the current winter construction season – 2004-05. The decision by Comaplex to undertake the underground program will be made in the first half of 2005.

## 2.1 Introduction and Background

## **Project Title:**

Meliadine West Gold Project Road Construction

## **Type of Activity:**

- develop a quarry to extract approximately  $30 40,000 \text{ m}^3$  sand and gravel; and
- build a 2.0 km single lane trail (with passing turnouts) between the existing exploration camp and the proposed underground exploration site.

## **Alternatives and Preferred Option(s)**

The alternative to surface access between the camp and underground exploration site would be helicopter in late spring, summer, and fall. This is feasible for the spring and summer but not the fall as weather conditions do not provide the reliability needed for safe and timely transfer of personnel working 12 hour shifts. Alternate winter and early spring transportation could be provided by large over snow personnel transport vehicles like Bombardiers.

## **Project Location**

The project is located on Inuit Owned Land 35 km north of Rankin Inlet (Figure 1). The camp serving the exploration program is located at 63 01 30 N X 92 10 20 W. The exploration site is located approximately 2 km south west of the camp (Figure 1).

### **Project Schedule**

2004

The proposed schedule for this project is shaped by the project review and permitting schedule, and seasonal transportation and construction logistic constraints. The schedule below shows the milestones assumed for the project's schedule.

2004	Submit Project Applications to KIA/NIRB/NWB/INAC	December
2003	Project approvals and permits from KIA/NIRB/NWB/INAC Camp/fuel resupply	31 March 15 – 30 March

## 2.2 Operations Plan - quarry development and road construction

The proposed quarry area is located on an esker island in Meliadine Lake approximately 600 m north of the camp (Figure 1). An area of approximately 1.0 hectare will be affected by quarry development. The 2.0 km road with turn around pads at each end will cover a further 1.75 ha. for a total project land use area of approximately 2.75 ha.- 1.75 ha on Inuit Owned Land and 1.0 ha on Federal land.

The quarry material will be extracted by removing dry granular material from a high esker island in Meliadine Lake. A bulldozer with ripper attachment will loosen the materials which will then be loaded into tandem gravel trucks and placed on the road alignment and spread by bulldozer and grader. An estimated 11,000 cubic meters of sand and gravel will be required to build the initial road and terminal turn around pads. More materials are expected to be required in early 2006 in the event that an underground exploration program is initiated.

## **Surface Facilities and Camp**

The current exploration camp will be used to house and feed the construction crew expected to total 22 persons for 30 days in the spring of 2005. Existing fuel storage will be used for the project. Fuel requirements are estimated to be 28,000 litres.

#### **Communications**

The exploration camp and office is equipped with telephone / internet service - both through a microwave link to Rankin Inlet with backup satellite telephones.

#### Water

Waster consumption will be only for domestic needs at the camp. The total water consumption is based on an estimated rate of 100 litres/person/day for 66,000 litres in total.

### **Waste Water and Garbage**

Low domestic water consumption at Meliadine has historically been achieved with low flow shower heads and waterless ablution systems used at the exploration camp since 1995. The result is a low output of grey water that is directed to a buried sump below camp but well above Meliadine Lake. All solid combustible waste is incinerated on site. Non-combustible waste is transferred to the Municipal land fill by permission of the Hamlet of Rankin Inlet.

## **Site Access and Transportation**

Fuel required for the project is in bulk storage in Rankin Inlet and will be transferred to project fuel vaults in March 2005. Local equipment will be used for construction to the maximum possible extent. It will be mobilized to the site in time to complete the project and removed to Rankin Inlet before spring thaw in May 2005.

Please see Figure 2 for the winter resupply transportation routes used to date. Figure 1 shows the project area generally including the proposed road alignment and source of aggregate materials.

Table 1 summarizes the fuel and major bulk materials consumption estimated for the project.

Table 1. Fuel and lubricants required for road construction

Consumable	Storage Capacity	Project Consumption
Diesel Fuel	400,000	28,000 litres
Lubricants/ hydraulic oil	n/a	500 litres

Fuel handling and storage will be in accordance with the Meliadine Environmental Management filed with KIA.

## **Construction Equipment**

The following equipment is expected to be required for the project. The final selection of equipment will rest with the contractor assigned for the project.

Table 2. Construction equipment fleet for road building

DESCRIPTION	FUNCTION	Units	SOURCE
Trucks - Tandem	Haul and place road material	4	local
Dozers	road levelling; material handling	2	local /contractor
Loader	material handling	1	local / contractor
Grader	Road levelling	1	local /contractor
Compactor	Road bed compaction	1	local /contractor
Picker truck	Heavy lifting and deliveries	1	local /contractor
Passenger van	Worker transfer	1	local /contractor

**Table 3.** Construction workforce

Function	Number
Supervision and administration	2
Operations	9
Equipment servicing and maintenance	5
Survey and inspection	1
Camp operations and catering	3
Total	20

## 2.3 Environmental Protection and Contingency Plans

Please see Appendix 4 for details on fuel / lubricant transport and handling (Environmental Management Plan and Fuel Transport Contingency Plan are on file with both KIA and NWB). No other hazardous goods are expected to be used.

### 3.0 PROJECT AREA ENVIRONMENT

## 3.1 Physical Environment

## Geology

The Meliadine area is underlain by a combination of Archean greenstone called the Rankin Inlet Group. A major break, the Pyke Fault, runs through this regional geological platform from Hudson Bay in the east to Peter Lake some 80 km inland to the west. Iron rich rock (iron formation) is proximal to the Pyke Fault and is also associated with the occurrence of gold. Several gold bearing zones have been identified in the general area of this exploration program. The "ore" zone in this underground exploration program - the Tiriganiak Zone - is in a shear zone splay off of the Pyke Fault. This gold deposit includes a series of mineralized sheets of varying thickness dipping north. The minerals in these zones include both carbonate rock (basic) and sulphide (acidic) rock.

Archean greenstone hosts many gold mining camps throughout Canada including Timmins, Rouyn-Noranda, and Yellowknife.

#### Climate

The climate of the area is characterised by short cool summers and long cold winters. Brisk wind is a common feature in all seasons of the year. Precipitation is roughly divided evenly between rain during a short summer and fall (predominantly in late summer), and snow which can fall in any month but is most common between October and April. Surface waters are usually frozen by early October and remain frozen until early June. The land is usually snow free by late June.

Historic climate data sets are available for Chesterfield Inlet, 80 km northeast of the camp and Rankin Inlet, 30 km south. The period of record is 48 years and 16 respectively (AGRA, 1998).

An automatic weather station operated at the Meliadine West Gold Project camp from May 1997 through June 2002. It recorded data on the following climate parameters:

- air temperature;
- ground temperature at -5 cm;
- relative humidity;
- precipitation (summer only);
- wind speed and direction; and
- net radiation.

#### **Terrain**

The terrain in the area of the Meliadine West Gold Project is of glacial and marine origins. Post glacial uplift is ongoing. The landscape is shaped by drumlinoid relief on a till plain (Aylsworth, et al, 1984). Low lying areas are poorly drained due to a low slope in the landscape with numerous shallow ponds and lakes connected by intermittent streams. Soils are generally sandy and silty clay with unsorted aggregate materials. All uplands are underlain by permafrost of an undetermined thickness. The surface active layer of annual freeze / thaw is 1 - 2 metres thick depending on cover type.

A sealed sensor cable was placed into ddh Mel98-195 in June 1998 to determine the annual soil temperature profile from the surface through the zone of permafrost. Permafrost depth in the area extends to -450 m with minimum temperatures of -8 to -9 deg. C at  $\sim$  -10 meters. Permafrost at depths below -10 m did not show seasonal temperature variations.

Aerial photography necessary to prepare a digital terrain model (DTM) was flown in July 1997. Maps of the project area at a 1:5,000 scale with a 1 m contour interval have been prepared.

## Hydrology

The Meliadine Lake watershed covers 586 km<sup>2</sup> (AGRA, 1998). The northeast basin of Meliadine Lake provides water for camp.

The hydrometric study at Meliadine West set up water level and flow monitoring stations to document the annual hydrologic regime in the project area. Results of the four year study (1997 - 2000) include both "dry" and "wet" years and show the expected precipitation and run off patterns known from other tundra watersheds that have been monitored for many years. One unusual feature of the overall Meliadine watershed is that Meliadine Lake has two outlets, the Meliadine River carries about 80% of the flow, and an outlet to Peter Lake on the Diana River takes the balance (AGRA, 1998). The domestic water supply of Rankin Inlet is not situated on either of these two major watersheds.

## 3.2 Aquatic Environments

## **Water Quality**

The Meliadine River watershed has to date not hosted ongoing commercial or industrial activity. The water quality should therefore be close to its pristine condition. Aquatic environment studies for the Meliadine West Gold Project have established a comprehensive baseline on water quality conditions in the Project area. Parameters for analyses included metals, simple hydrocarbons, and levels of exotic airborne pollutants deposited by long range atmospheric transport. Analytical data includes water samples from winter, spring, and summer collections. The sampling network established includes a "control" area outside the basins under active exploration.

#### **Fish**

Fish populations were studied in Meliadine Lake, Meliadine River and many ponds and lakes above Meliadine Lake. Nine fish species were identified: lake trout, Arctic charr, round whitefish, Arctic grayling, cisco, three- and ninespine stickleback, burbot and sculpin. Seasonal distribution of fish was studied by deploying fyke nets which allowed live capture and release of tagged fish. Radio telemetry was also used to monitor the distribution of lake trout and charr. Arctic charr and lake trout are very important resources for the local domestic fishery. A significant stratification of species was noted between Meliadine Lake and the water bodies above it. The distribution of lake trout (all cohorts) was generally restricted to Meliadine Lake with occasional individuals captured in the first water body above Meliadine Lake. Round whitefish, like trout, were generally restricted to Meliadine Lake. The remaining species with the exception of Arctic charr were generally found throughout the basins above Meliadine Lake.

All fish population data were reported in yearly data reports by R.L. & L. Ltd in 1998, 1999, 2000 and 2001. No "species at risk" was found in the fish studies in the Project area.

### Fish Habitat

Fish habitat studies focussed on physical and biological parameters of the lakes and streams in the Project area. Physical parameter studies documented the shorelines and stream habitats that may be at risk of alteration during the construction and operations of a gold mine including the water crossings that would be required by an all-weather road from Rankin Inlet to a conceptual mine site near Bud Lake. The bathymetric profiles mapped numerous lakes and ponds including parts of Meliadine Lake. Biological parameter studies documented winter oxygen levels in several ponds and lakes as well as the relative abundance of primary and secondary producers in the aquatic ecosystem of the Project area. Although winter oxygen levels in the lakes above Meliadine were very low, several species of fish were found to overwinter there, including Arctic Grayling. The diversity of primary and secondary producers found was typical for sub-arctic aquatic systems. As a cost saving measure, not all the samples of benthic invertebrates collected were analysed and reported; 136 preserved benthos samples remain in secure storage with R.L. & L. Ltd. in Edmonton (now a division of Golder Associates Ltd.).

One stream crosses the proposed road alignment. A fish habitat investigation on this stream was completed in July 2004 to assess the status of fish populations here. Ninespine stickleback were noted but no other evidence of fish or fish spawning was found (Golder 2004. See Appendix 5 for a copy of this report).

#### 3.3 Terrestrial Environments

## Vegetation and wildlife habitat

Vegetation studies were conducted in 1998 by Page Burt of Outcrop Ltd. in Rankin Inlet (now in Yellowknife). A comprehensive list of plant species and a description of their habitats was prepared. A description of habitat types throughout the Project area was developed and a map of habitats over the exploration area prepared (Burt, 1999). The dominant factor shaping the distribution of habitat types seemed to be the amount of moisture available, with the wetter areas having much more vegetation and the ridge tops the least. The greatest species diversity seems to be in the transition zone between the wet meadows and well drained communities on drumlin slopes.

No plant species at risk of extinction were found in the Project area. No critical habitat for any local wildlife species has been identified in the course of completed baseline studies in the project area. No critical wildlife habitat was identified by the Nunavut Planning Commission in its preparation of the Keewatin Regional Land Use Plan (NPC 1991, revised and submitted for approval by the federal and territorial ministers in June 2000). Also, there are no known caribou calving grounds in the general area that will be affected by the proposed project.

All of these areas except the waste rock dumps can be revegetated with local plants by the careful application of peat and fertilizer to disturbed sites with a suitable soil base.

#### Wildlife

The area of the project is within the ranges of 40 bird species (Godfrey, 1966) and 17 mammal species (Banfield, 1977). The wildlife species inventory of the region was developed from published compendia of birds and mammals and from the field observations of the staff of the project as recorded in the camp wildlife log.

Wildlife studies on the caribou herds using the Project area were initiated in the fall of 1997 when the Project collaborated with the Wildlife Service of the then Government of the Northwest Territories in the deployment of satellite telemetry collars on female caribou. Systematic studies of wildlife generally in the Project area started in the spring of 1998 when Arc Wildlife Services Ltd. of Calgary began systematic studies of bird and mammal studies in the area. These studies continued through the summer of 2000. Annual data reports were submitted for 1998, 1999 and 2000 (Jalkotzy 1999, 2000a, 2000b).

The normal assemblage of bird and mammal species expected for sub-arctic tundra ecosystems was found. The most common of the large birds like sand hill cranes, loons, and tundra swans were studied in more detail than other water fowl and passerines. Swans exhibit traditional nest site selection habits. Raptors (rough-legged hawks and peregrine falcons) were noted but no nests were located within the active exploration area of the Project. Mammals present include lemming, ground squirrel, red fox, and caribou. Aerial surveys showed the Project area is marginal to the overall range of two herds. Portions of the Qaminirjuaq herd may pass through the Project area in summer and overwinter in some years from late October through March. It is at this time of year that most caribou harvesting by Rankin Inlet hunters is done. Telemetry data also showed that the caribou present in the fall of 1997 included females that travelled north of Chesterfield Inlet for calving in the spring of 1998 and so may belong to the herd(s) calving in the Lorillard River / Wager Bay area .

The Nunavut Wildlife Act (promulgation pending development and approval of regulations) will implement the Species at Risk Act (Canada) in Nunavut.

### 3.4 Social, Cultural and Economic Environments

### Regional Demography

Inuit make up 90% of the Kivalliq Region population (Statistics Canada, 2001 census). The population of the region grew by 10% between 1996 and 2001. The labour force of the region is growing faster than the number of jobs and so unemployment in the region is chronic. Another factor compounding the unemployment problem is the relatively low level of education and training for many Inuit wishing to participate in the wage based economy. At current trends, in the year 2001 only 172 persons (7.8% of overall labour force) would meet a basic hypothetical mine training program recruiting criteria of being unemployed, education of at least grade 10 level, and willing to work on a rotation schedule (Nexus, 1997).

Table 4: Current and Projected Labour Force, Kivalliq Region (2001)

COMMUNITY	2001
Arviat	1899

Baker Lake	1507
Chesterfield Inlet	345
Coral Harbour	712
Rankin Inlet	2177
Repulse Bay	612
Whale Cove	305
TOTAL	7557

(data source: Statistics Canada, 2001 census

## 3.5 Regional Land Use

## **Traditional Knowledge**

The Meliadine West Gold Project initiated a study of traditional knowledge for the project area in September 1997 (Nanuk Enterprises, 1999). The study was governed by a steering committee of Rankin Inlet and Chesterfield Inlet elders. Work of the committee included reviewing the interview guide used to gather local knowledge of the area, especially from elders who have lived in the area in the early days or prior to the establishment of Rankin Inlet in the 1950's.

One of the issues raised during the course of the traditional knowledge study is the naming of local sites. While several sites have been named by the Meliadine West Gold Project for operational purposes, these were reviewed with the elders. It was decided that a map of local place names should be prepared and a process developed for new names required to describe land marks and locations associated with the Meliadine West Gold Project.

### **Heritage Sites**

The prospect of conducting advanced exploration required that a survey of heritage sites in the area at risk be undertaken. Elisa Hart of Cochrane, a professional archaeologist undertook this examination with help from a local Inuit field assistant, and advice from an elders' committee and Moses Aliyak, a noted local elder recognized for his intimate knowledge of heritage resources. Numerous sites were found in the area of the advanced exploration site that could be affected. On examination and review by the elders' committee, it was determined that these sites represented recent land use and were not significant. The elders' committee advised KIA, the land lord, of their assessment. Also examined were sites closer to Meliadine Lake, well beyond the area at risk of alteration by exploration or a quarry. These sites were found to be of considerable age and determined to be "off limits" by the elders' committee. Findings of the study were reported by Hart (1998). A summary report of findings was also prepared for review by the elders' committee.

## 4.0 DESCRIPTION OF PUBLIC CONSULTATION PROCESS

The Meliadine West Gold Project has conducted an active consultation program throughout the exploration program which beginning in 1995. The consultation program included the community of Chesterfield Inlet as the lands affected fall within the area of influence (as determined by the Keewatin Regional Land Use Plan) for that community. The chronology of consultation activities is enumerated below.

Table 5. Chronology of community consultation events by the Meliadine West Gold Project

DATE 1995	PLACE	PARTIES PRESENT AND SUBJECTS OF MEETING
1 May	Rankin Inlet	KIA, WMC, Cumberland, Comaplex; history of exploration and prospect of WMC entering the Project on western lands.
1996		
10 January	Rankin Inlet	KIA, WMC, Cumberland, Comaplex; Project status report and notice of manpower needs
29-31 Mar.	Rankin Inlet	Nunavut Mining Forum; Project status report; Project booth at trade fair
1 April	Chesterfield Inlet	public, KIA, Hamlet, HTO, CLARC; Project status report and notice of manpower needs
2 April	Rankin Inlet	public, KIA, CLARC, HTO's, Fed. & Ter. govt, WMC; day long review of environmental studies
2 December	Chesterfield Inlet	public, KIA, CLARC, Hamlet, HTO; Project status report and notice of manpower needs
3 December	Rankin Inlet	public, KIA, CLARC, HTO; Project status report and notice of manpower needs
1997		-
21-23 Mar.	Rankin Inlet	Kivalliq Mining Round Table; Project status and emphasis on mine readiness training
25 March	Rankin Inlet	public, CLARC, KIA Board
19-20 April	Iqaluit	Nunavut Mining Conference; Project status report
13 May	Rankin Inlet	public, KIA, CLARC, HTO; current year exploration program and manpower needs
14 May	Chesterfield Inlet	public, KIA, Hamlet, HTO, CLARC; current year exploration program and manpower needs
11 June	Coral Harbour	briefing KIA Board of Directors on regional demography research and how it relates to mine work force needs
28 June	Rankin Inlet	public reception for Sir Arvi Parbo, Chair to WMC Limited Board.
28 August	Rankin Inlet	public reception with WMC senior management visiting from Australia.
23 October	Rankin Inlet	inaugural dinner meeting with Elder's Steering Committee for Traditional Knowledge.

6 November	Rankin Inlet	Project briefing to Keewatin Wildlife Fed. executive committee.
9 December	Rankin Inlet	meeting #2 of the Elder's Steering Committee for Traditional Knowledge.
1998		
7 January	Rankin Inlet	public, Hamlet, KIA, HTO, CLARC; Project status report
8 January	Chesterfield Inlet	public, KIA, Hamlet, CLARC; Project status report
28 March	Cambridge Bay	Nunavut Mining Symposium; Project status report
2 April	Rankin Inlet	HTO's for Rankin and Chesterfield, KIA, CLARC, DFO, DRWED; review environmental baseline studies.
23 June	Rankin Inlet	joint meeting of the Rankin Inlet and Chesterfield Inlet CLARCs to review underground exploration application (since withdrawn); public meeting in afternoon and evening to brief Rankin Inlet businesses and residents of underground exploration application
25 June	Chesterfield Inlet	project briefing to Chesterfield Inlet Hamlet Council; evening meeting to brief Chesterfield resident on underground exploration application (since withdrawn).
6 July	Rankin Inlet	brief Rankin Inlet Hamlet Council on underground
Ĭ		exploration program and need to store fuel in barge
		overwintering in Melvin Bay (plans since cancelled).
8 July	Meliadine Camp	overall project briefing to DIAND Minister, the Hon. Stewart and Nunavut leadership- Josie Karetak-Lindell MP for Nunavut; NWT Finance Minister and MLA for Rankin
		Inlet, the Hon. John Todd.
5 August	Rankin Inlet	dinner meeting #3 of the Elder's Steering Committee for Traditional Knowledge; review Project and proposed archaeological survey of proposed test pit area.
2 October	Rankin Inlet	dinner meeting #4 of the Elder's Steering Committee for
2 000000		Traditional Knowledge; review Project and results of
		archaeological survey of proposed test pit area.
21 October	Rankin Inlet	meeting with Hamlet Coordinating Committee (reps. of all
		the service agencies in Rankin Inlet) to review Project and
		its current effects on the social fabric of the community.
1999		100 VOLTO VILLO VI
13 January	Rankin Inlet	KIA, CLARC, public; review Project results for 1998 and
		plans for 1999.
14 January	Chesterfield Inlet	KIA, CLARC, public; review Project results for 1998 and
		plans for 1999.
14 April	Rankin Inlet	workshop with stakeholders from Rankin Inlet, Chesterfield 1997. Inlet and Kivalliq region plus relevant government agencies to review environmental study results of 1998 studies and plans for 1999.
11 April	Arviat	review regional gold exploration program for 1999 with
		Hamlet Council and HTO.
14 September	Rankin Inlet	meeting #5 of the Elder's Steering Committee for

		Traditional Knowledge; review Project and receive final report on completed Traditional Knowledge Study of Project area.
2000		J
7 January	Rankin Inlet	KIA,CLARC,public; review Project results for 1999 and plans for 2000.
22 May	Arviat	review regional gold exploration program for 1999 with Hamlet Council and HTO.
23 May	Rankin Inlet	workshop with stakeholders from Rankin Inlet, Chesterfield Inlet and Kivalliq region plus relevant government agencies to review environmental study results of 1998 studies and plans for 1999.
23 May	Chesterfield Inlet	KIA,CLARC,public; review Project results for 1999 and plans for 2000.
13 November	Rankin Inlet	Nunavut Mining Symposium public talk on the need for mine related training; Project update to symposium delegates.
2001		
10 April	Rankin Inlet	workshop with stakeholders from Rankin Inlet, Chesterfield Inlet and Kivalliq region plus relevant government agencies to review environmental study results of 2000 studies and plans for 2001; public meeting to review Project results for 2000 and plans for 2001.
2002		Teview Troject results for 2000 and plans for 2001.
7 January	Rankin Inlet	KIA, CLARC, public meeting to review 2001 work and project status;
8 January	Chesterfield Inlet	KIA, CLARC, public meeting to review 2001 work and project status
27 June	Rankin Inlet	KIA commercial lease signing
26 November	Chesterfield Inlet	KIA, CLARC, public meeting to review 2002 work and project status
28 November	Rankin Inlet	KIA, CLARC, public meeting to review 2001 work and project status including camp closure.
2003		
12 May	Rankin Inlet	KIA, CLARC, public meeting to review project status focusing on impending sale of project.
13 May	Chesterfield Inlet	KIA, CLARC, public meeting to review project status focusing on impending sale of project.
16 July	Rankin Inlet	teleconference from KIA between Rankin Inlet, Chesterfield Inlet, Denver (WMC), and Calgary (Comaplex) to announce and discuss Comaplex/WMC agreement on sale of WMC Canadian interests to Comaplex.
3 November	Rankin Inlet	KIA, CLARC, public review new directions of project under Comaplex control.
2004		

21-22 October Rankin Inlet

KIA Board of Directors and staff, and public on project activities of 2004 and overall status.

### **Public Issues and Concerns**

The public meetings hosted by the Project have focused on the exploration program and a hypothetical mine that may be developed in due course. The issues below are a capsule of those that emerged in discussions during the community consultations from 1995 – the present regarding the overall Meliadine West Gold Project.

## Helicopter overflights

Effects of helicopter over flights on both people and wildlife were raised at the first meeting. Project managers responded with a guideline to be followed (weather conditions permitting) that advises pilots to avoid passing over cabins and tents and also to maintain specified altitude over areas occupied by wildlife. This has not been a perfect solution and ongoing reminders to pilots have been necessary. The subject continues to be raised informally indicating it to be an issue of ongoing public concern.

## Water quality

The peculiar drainage configuration for Meliadine Lake was reviewed with the HTO and Elders' Committee who recognised that both major drainages in the Rankin could be at risk of contamination in the event of disaster or bad practice. The Project's environmental baseline studies established the base for a comprehensive water quality monitoring program; standard industry diamond drilling practice has been modified to remove all solids from drilling fluids before discharging these when drilling from lake ice platforms. In summer, sumps are developed to prevent drill cuttings from entering water bodies or water courses. These practises are a standard routine as prescribed in the Project Environmental Management System filed with KIA.

## **Business and Employment opportunities**

A recurring theme in discussion with leaders and elders was the need for employment for "our young people". The Project has hired all unskilled help from the region and provided on the job training as required. Long term labour force development will require a major upgrading and training effort in partnership with government.

## **Fuel spills**

Fuel management and threat of contamination to the environment is an ongoing public concern. The Project EMS implements a rigorous inspection routine of all fuel storage vessels including ULC approved double walled fuel vaults for bulk diesel and turbo fuel storage.

### Underground blasting effects on lakes and fish

This issue was raised in Chesterfield Inlet as a concern if mining were to go ahead. The physical effects of blasting on the surrounding rock and water at surface is controlled by the placement, sequence, and volume of explosive. This is planned to ensure that the maximum energy from the blast is released into the immediate area of the explosive and not into non-target areas as provided in usage guidelines for explosives. Also, DFO has developed guidelines for use of explosives near water bodies in northern Canada.

## Are there opportunities for women?

Both communities have a tremendous interest in the opportunities for employment in all aspects of Project work. The Project is an equal opportunity employer.

## Is there exploration in the area of peoples' camps?

To date there has been very little drilling in the immediate vicinity of existing cabins or camps. Efforts are made to review the work with the persons at the campsite to learn if the exploration schedule can be adjusted so that disturbance and inconvenience can be avoided.

#### Work rotation

Time spent away from families is a concern for persons living at the camp for extended periods. While no rigid work rotation has been in place to date, rotations for local workers are flexible to meet both the work load and the individual needs of the employee. The preferred rotation for local employees is 20 days in and 10 days out. The hours accumulated in the 20 days includes considerable overtime and so provides more income than a regular hours per month in most jobs elsewhere.

### Effects on caribou

Public concerns for wildlife are focused on caribou. Caribou are not abundant in the area of the exploration program in any season. The Project initiated a program of satellite telemetry in which five collars were put on female caribou to learn the calving ground affinity of the caribou in the area during winter. Are they of the Qamanirjuaq herd or a herd north of Chesterfield Inlet? Telemetry data showed that the caribou over wintering in the area of the exploration program in 1997 / 98 were from at least two different calving areas - the Qamanirjuaq Lake calving ground to the southwest of Meliadine Lake, and a calving area north of Chesterfield Inlet. This cooperative program was officially suspended as of December 31, 2001.

In general, the Project has received support and encouragement for its work at Meliadine West from both Rankin Inlet and Chesterfield Inlet and has enjoyed a cooperative working relationship with the landlord, KIA.

In addition to the consultation meetings, annual Project Status Reports (in Inuktitut and English) have been prepared and provided at public meeting.

#### 5.0 POTENTIAL INTERACTIONS OF PROJECT WITH THE ENVIRONMENT

This project is small road construction job that will keep physical disturbance effects to as small an area as possible. Potential interactions between the project proposed and the environment in the project area will be reviewed in the sequence and issues developed in Section 3 above. Mitigation measures for potential impacts are discussed in Section 7 below.

#### 5.1 **Physical Environment**

The sequence and schedule of the project is season dependant in that the project site does not have all season overland access. Mobilizing heavy equipment and bulk materials can be done only under winter conditions when terrain conditions allow overland transport.

## Geology

It is the geology of the area that is the central focus of the overall exploration program. No covered bedrock is expected to be exposed in the course of quarrying materials for road construction

#### Climate

The project area is located in an area of continuous permafrost and so development logistics sequence and schedules are weather and climate dependant. All overland access to the project area by overland transport to/from Rankin Inlet will be restricted to "winter freeze-up" conditions when terrain disturbance and associated erosion and water quality effects can be prevented.

### **Terrain**

The primary interaction between the project and terrain in the area will be the disturbance required to establish a quarry and lay down sand and gravel for surface access roads connecting the exploration site and camp. Preliminary estimates of the area of habitat alteration as follows:

quarry 1.0 ha road 1.75 ha Total 2.75 ha

### **Hydrology**

Overland transport will be initiated after fall/winter freeze-up and no stream crossings will be altered in the course of mobilizing equipment and materials from Rankin Inlet to the project area. Overland transport in the March to May 2005 period will use the winter resupply route that has served the project for the past 10 years.

One stream crossing is required along the road alignment. A timber bridge will be placed to cross the channel approximately 1 m wide. The bridge will be designed and placed so that it will not encroach on the channel or impede the flow as is shown in Figure 4.

## Air

Project operations will consume 28,000 litres of diesel fuel releasing approximately 1.65 tonnes of NOx and 0.47 tonnes SOx, plus 76.5 tonnes of greenhouse gasses (CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O).<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> Assumes conversion factors of .84 for density with 0.070 and 0.02 for NOx and SOx resp. and 2.73416 kg/l for Comaplex Minerals Corp. - 18 -All-season road construction

## 5.2 Aquatic Environment

## Water quality

Quarry development will require working from the ice of Meliadine Lake to start the quarrying for road materials. Sand and gravel spillage onto the ice will be removed to the quarry on completion of road building.

### Fish Habitat

No direct interactions by any aspect of the project and related support activities with fish habitat are required or expected. The water intake on Meliadine Lake is screened; there will no waste water discharges into fish habitat. DFO guidelines for use of explosives near fish bearing waters in northern Canada will be followed.

## **Fish Populations**

No direct interactions by the project and related support activities with fish populations are required or expected. Recreational fishing by project personnel will comply with existing laws and regulations. "Catch and release" recreational angling will be encouraged as it has been during the exploration program to date.

#### **5.3** Terrestrial Environment

## **Vegetation and Wildlife Habitat**

Quarry development and road construction will alter 2.75 ha of terrestrial habitat. Site development will be completed in winter conditions and so no active nests will be affected. Habitats affected are well drained transition communities midway between dry ridge and wet meadow. No declared plant species are known for the project area.

## **Wildlife Populations**

Potential interactions between the proposed project and wildlife species will occur only in winter at the site or along the resupply routes. Wildlife will always have the "right of way" as the principal mitigation measure to reduce project related interactions with surface traffic.

Specific potential interactions with wildlife that will be the subjects of ongoing mitigation measures relate to scavengers (fox, wolverine, and bear), and caribou.

### Wolverine and bear

Very diligent garbage management will continue to be practised to avoid attracting scavengers (fox, wolverine, and bear) to the camp. This includes incinerating all kitchen garbage and other wastes which may attract scavengers as required in the Meliadine West Environmental Management Plan (Appendix 1).

## Caribou (and all other species)

In all interactions with caribou the most effective mitigation measure will be the strict adherence of a "wildlife has the right of way" policy for all vehicular traffic. Not only will this reduce collisions and related injuries and road kill, it will also reduce the attraction to scavengers that occurs when carrion is available. In the event that road kills occur, they will be reported to the wildlife officer in Rankin Inlet and, regulations permitting, disposed of by incineration.

Project and contractor employees will be prohibited from harvesting wildlife while employed on site.

## **Summary - Environmental Effects**

- 1. The environmental effects of the project on fish and wildlife habitat will not alter the carrying capacity, but will be observable for a long time. Habitat disturbance will be mitigated to the extent practicable in the project's abandonment and reclamation measures that will be developed in consultation with KIA.
- 2. There will be no waste water discharges into fish habitat.
- 2. There will be no direct interactions with fish populations.
- 3. Known mitigation practices that are effective for discouraging scavengers that have been applied by the project to date will continue.
- 4. The most effective mitigation measure for managing environmental effects on wildlife is to ensure that a "wildlife has the right of way" policy is rigorously practised to avoid vehicle collision injuries and road kills.

# 5.4 Interactions with the local/regional social and economic environment Project Labour Needs

Quarry development and road construction will be contracted to a local Inuit firm by way of a contract tendering process. The project will apply the same criteria to this contractor that it has with other contractors to date with respect to employment for local residents and services and supplies by local businesses. The period between awarding the contract (~March 2005) and initiating underground work (~January 2006) may be suitable for additional worker training. The following list outlines the expected labour force requirements for the road construction:

Function	Number
Supervision and administration	2
Operations	9
Equipment servicing and maintenance	5
Survey and inspection	1
Camp operations and catering	3
Total	20

Of this crew, approximately 80% would be recruited from the local workforce.

### Goods and services

The goods and services to be supplied by local suppliers for the camp and project is expected to be similar to that of the project's exploration program to date. All the fuel needs can be met locally as well as camp provisioning. Goods and services that would be required include:

Transportation Services into and out of the site

Fuel and lubricants:

28,000 litres of fuel

500 litres of lubricants

Groceries and supplies for a 20 person camp.

Approximately 75% of the total construction costs will be spent in the local economy.

Table 5 shows the participation by local persons in the Meliadine West Gold Project work force and the Project's dollar value contribution to the regional economy since 1995.

Table 6. Meliadine West Gold Project contribution to the Kivalliq economy since 1995.

Activity	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Local persons employed	11	14	8	12	27	26	45	30	21	6
Wages	181,263	130,615	76,941	236,406	268,256	233,303	386,265	205,000	80,000	40,000
Expediting and transport	164,815	150,088	66,839	176,349	270,215	152,533	476,744	385,200	183,000	42,000
Fuel	253,000	62,643	9,391	184,094	31,487	81,080	647,107	27,000	120,000	80,000
Equipment and supplies	11,000	1,203	2,328	15,153	55,740	5,609	77,484	150,000	10,000	10,000
Food and accommodation	23,312	18,781	8,850	77,582	104,302	128,388	280,366	263,000	100,000	43,000
Construction	8,503	57,494	0	45,041	51,088	29,778	82,045	0	57,000	10,000
Drilling	74,182	45,589	0	0	17,913	86,456	150,836	160,000	0	0
Community	63,680	97,719	208,254	90,259	384,597	69,303	229,948	42,000	0	0
Environment	8,500	215	0	0	0	16,806	16,650	0	0	0
Other	24,400	10,116	2,944	13,180	18,573	25,732	30,680	0	0	0
Total (Kivalliq)	812,655	574,462	375,547	838,064	1,202,171	828,988	2,378,125	1,232,200	550,000	225,000
Total (Program)	3,300,027	3,150,493	4,778,824	6,302,757	7,854,865	7,207,958	14,402,262	10,887,000	5,063,000	1,907,000
Cumulative (Kivalliq)	9,019,508	8,204,557	7,630,095	7,254,548	6,416,484	5,214,313	4,385,325	2,007,200	775,000	225,000
Cumulative (Program)	64,854,186	61,554,160	58,403,667	53,624,843	47,322,085	39,467,220	32,259,262	17,857,000	6,970,000	1,907,000
Local expenditure portion of total expenditure	25%	18%	8%	13%	15%	12%	17%	11%	11%	12%

### 6.0 IDENTIFICATION OF CUMULATIVE ENVIRONMENTAL EFFECTS

No sustained industrial or commercial activity has been conducted on the Meliadine River drainage prior to the Meliadine gold exploration program; therefore no environmental effects of past activities are evident. The effects of diamond drilling conducted during the course of this exploration program can be observed on aerial photographs. These drill sites will be revegetated naturally over time and so fade as observable effects of surface mineral exploration over the next 5 - 10 years. The evidence of the quarry and road will be evident for a long time.

A successful underground exploration program confirming continuous and consistent gold mineralization in the Tiriganiaq zone at Meliadine West will be a significant milestone in determining the overall technical and commercial feasibility of a gold mine here. An active gold mine would require related infrastructure and services that will be incremental to existing current facilities including:

- a marine dock at Rankin Inlet;
- a multi-million litre fuel oil tank farm at Rankin Inlet;
- an all season road from Rankin Inlet to Meliadine West:
- an active mine and mill operation at Meliadine West;
- secure and permanent mine waste storage.

If a comprehensive feasibility study shows that a gold mine a Meliadine West can be technically and commercially feasible the potential environmental effects of these facilities and related activities will be reviewed as required by the NLCA.

### 7.0 MITIGATION MEASURES AND RESIDUAL IMPACTS

#### Air

The contractor will be encouraged to operate and maintain engines in accordance with manufacturer's specifications to keep exhaust emission contaminants to a minimum.

#### Water

All camp waste water will be discharged as has been the case to date; no residual impacts on the natural water bodies and water courses in the project area are expected.

#### Fish

No direct interaction with fish and fish habitat is required by the project; no residual impacts are expected.

## **Terrain**

1.75 ha of will be covered with natural aggregate; a further 1.0 ha will be altered by quarrying. All altered surfaces will be contoured and sloped to reduce natural erosion to the maximum extent possible.

#### Waste

All combustible waste will be incinerated with the residue deposited in the municipal landfill at Rankin Inlet. Non-combustible waste will be placed in the municipal landfill at Rankin Inlet.

## Vegetation

No residual impacts on vegetation other than the disturbance in the immediate area of the quarry and road will occur.

## Wildlife

Hunting by staff while at the site will not be allowed. No ongoing interaction with wildlife and wildlife habitat is required by the project and so no residual impacts are expected.

#### Social

The project will adhere to a zero tolerance for alcohol and non-prescription drugs at the work site

An important objective for Comaplex is that the residual social effects of the Meliadine West Gold Project on the community and region are positive.

#### **Economic**

The project will continue its practice of maximum local employment and business opportunities that are cost effective and sustainable for the long term of this exploration project and others in the region. Comaplex' objective is that the residual effects of participating in this project for the local work force and business community will increase local capacity to serve the mineral exploration and mining sector throughout the Kivalliq Region in the future.

### 8.0 ABANDONMENT / DECOMMISSIONING PLANS

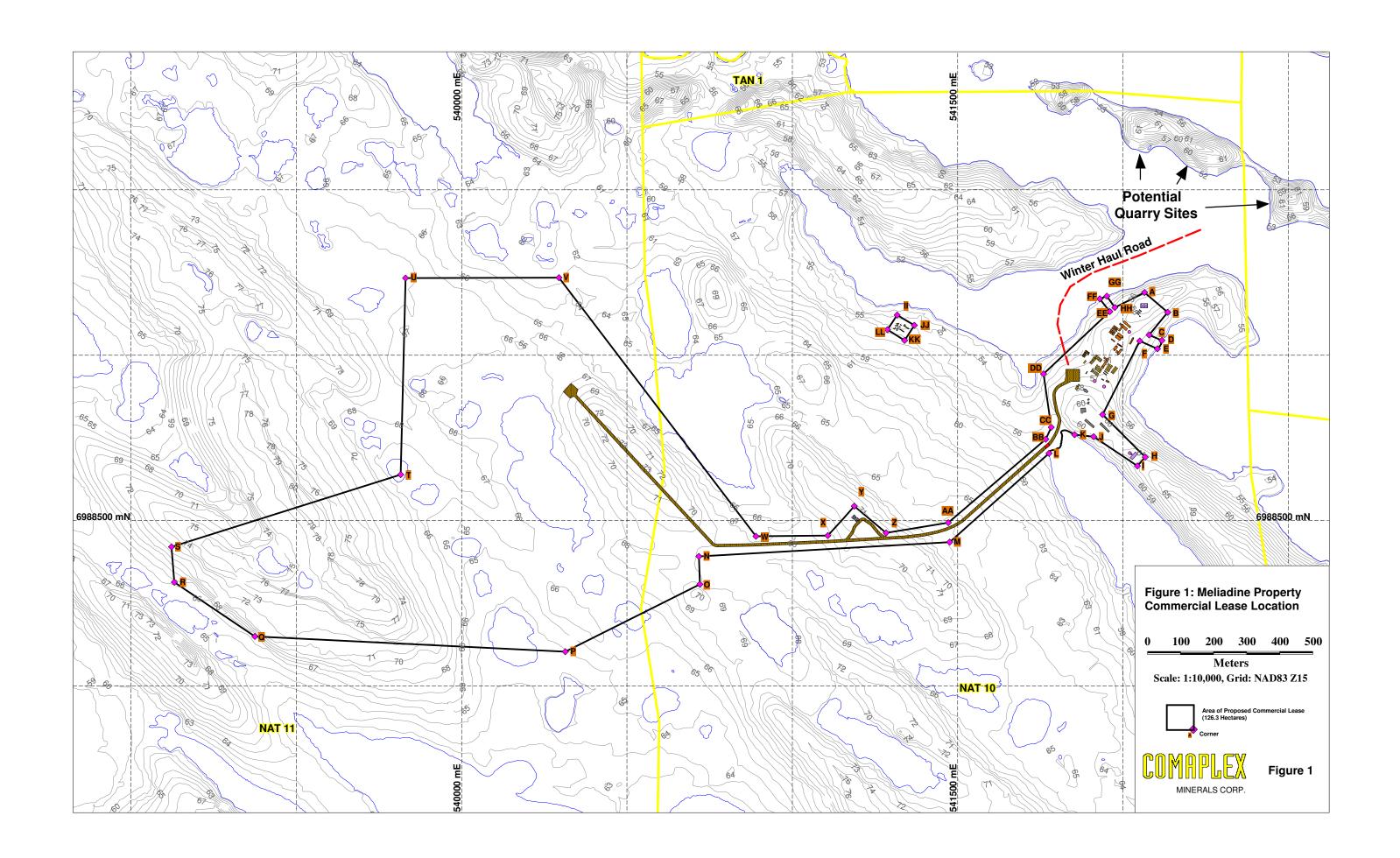
All abandonment and decommissioning activities for works on Inuit Owned Land will depend on the feasibility of commercial gold production at Meliadine West. Final plans will be developed in consultation with the land owner, KIA. In the event that further development and exploration on the Meliadine West grounds are suspended or terminated, site reclamation at Meliadine West will be based on the following conceptual closure plan:

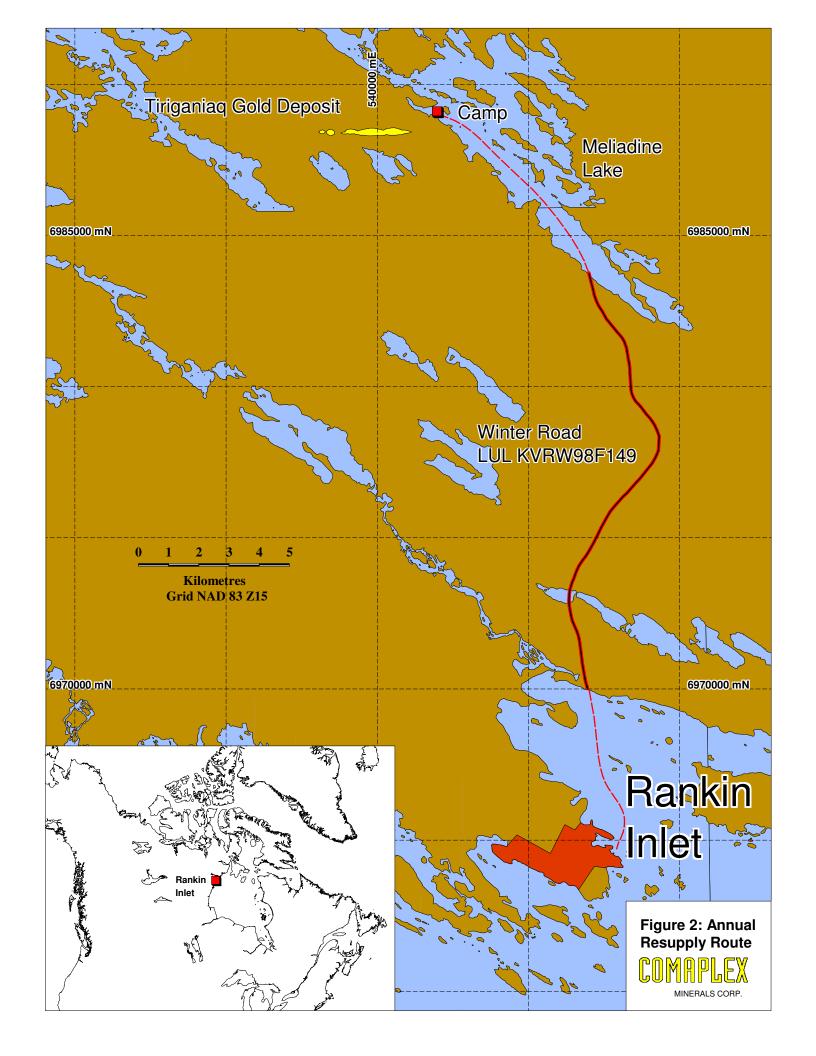
- everything with salvage value will be removed from the site;
- all combustible materials with no salvage value will be burned and the residue removed to the Rankin Inlet landfill:
- all non-combustible waste and scrap will be removed to the Rankin Inlet landfill;
- the timber bridge over the stream below camp will be removed;
- the road will be contoured and scarified to reduce erosion and encourage moisture retention that will enhance natural revegetation.

The quarry on Federal Land will not take materials from below the adjacent lake water level. The quarry face will be contoured to prevent ponding, erosion, and sediment transport into Meliadine Lake.

#### 9.0 MONITORING AND MAINTENANCE PLANS

The overall project's economic contribution by way of local employment and procurement will continue to be monitored and will be reported annually.





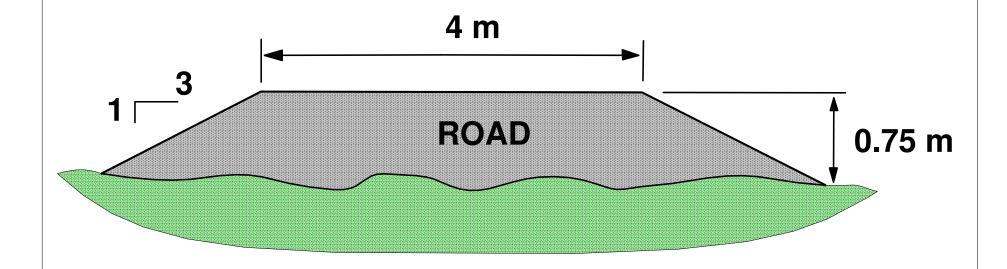
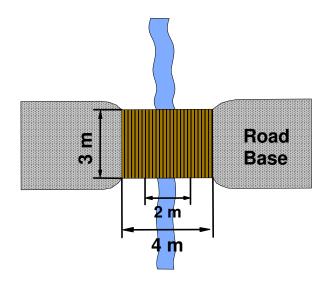


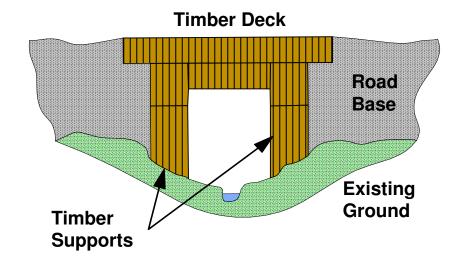
FIGURE 3: Meliadine Project Schematic Road Cross Section



MINERALS CORP.

# **SECTION**





**PLAN** 

FIGURE 4: Meliadine Project Schematic Bridge Crossing



MINERALS CORP.

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