



**FIELD OPERATIONS - ADVANCED EXPLORATION: DRILLING  
ENVIRONMENTAL MANAGEMENT SYSTEM  
MELIADINE WEST GOLD PROJECT**

**COMAPLEX MINERALS CORP.  
MAY 2004**

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## 1.0. INTRODUCTION

This EMS focuses on those exploration activities that pose a direct risk to the environment. It is proposed as a generic EMS that bears on the basic operational elements of a mineral exploration program from the earliest stage (background research) through to a production feasibility study,

**Mineral exploration activities for the Comaplex Minerals Corp (CMF) Meliadine West Gold Project will be conducted in a manner that will minimize terrain disturbance and /or changes to water quality in the watersheds where the exploration and related land use activities are conducted.**

The Meliadine West Gold Project is a mineral exploration program whose goal is to find an ore body that can be developed to create value for the CMF shareholder and economic opportunity for the residents of the Kivalliq Region of Nunavut. Exploration practises will restrict terrain disturbance to the immediate area of exploration activities and be contained to as small an area as best exploration practises will allow. Exploration sites will be reclaimed immediately upon removal of equipment and so return the sites to the natural productivity of the surrounding landscape. Camp and storage areas will be kept tidy and periodic progressive reclamation will be practised in high use areas. Fuel and hazardous goods will be handled in ways to prevent spills and storage sites and containers will be monitored daily.

## 2.0 Environmental Objectives

- a) Land use - camp and storage areas  
Objective - to keep the area of active use as small as possible and free of debris and litter.
- b) Land Use - Fuel storage and handling  
Objective - to prevent all fuel spills
- c) Land Use - diamond drilling  
Objective - to keep the area of disturbance to a minimum
- d) Air Quality - Fuel consumption  
Objective - to use hydrocarbon products as efficiently as possible
- e) Water use - diamond drilling  
Objective - to use water for drilling as efficiently as possible and practical.

## 2.1 KEY DEFINITIONS

**Environment** - surroundings in which the exploration program operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation.

**Environmental aspect** - the elements of the exploration program's activities, operations or services that do or can potentially interact with the environment.

**Environmental impact** - any change to the environment, whether adverse or beneficial, fully or partially resulting from the exploration program's activities, operations or services.

**Environmental management system (EMS)** - that part of the overall management system that includes organization structure, planning activities, responsibilities, practises, procedures, processes, and resources for developing, implementing, achieving, reviewing and maintaining the CMF International Ltd. environmental policy.

**Exploration** - all those land use (including water) activities that are required to find and define minerals in their natural state.

**Long term** - is defined as follows in an ecosystem specific context:

tundra ecosystems - 25 years

## 2.2 Summary of Anticipated Impacts and Remedial Measures: Meliadine West Gold Project

Activity	Aspect	Critical Impact	Mitigation/Comments
<b>Function: Site Access</b>			
Winter Road	snow compaction	retards vegetation growth in spring	condition of winter road route should be monitored
Helicopter	disturbance to: wildlife	injuries and loss of young	maintain min. 300 m alt. conditions permitting
Helipads	people vegetation	destroy “peace and quiet” of the land disturbance to small area of pad	avoid overflight of camps and dwellings keep area of disturbance as small as possible
<b>Function: Occupation</b>			
Campsites	garbage litter disturbance sewage grey water	attracts wildlife unsightly stress on vegetation land and water contamination land and water contamination	incinerate all combustibles; remove non-combustibles to land fill collect and incinerate progressive rehab. by periodic application of granular fertilizer use waterless ablution technology and incinerate raw sewage use sumps to settle discharge/prevent contamination of water supply
Fuel Storage	fuel spills	stress on vegetation	use spill prevention procedures for handling and storage progressive rehab. By periodic application of granular fertilizer in high traffic areas
Laydown	disturbance	stress on vegetation	keep laydown area to a minimum/periodic application of granular fertilizer
Recreation	garbage/litter angling hunting	unsightly land use kills fish kills animals	collect and incinerate combustibles/remove non-combustibles to land fill adopt a code of “catch and release” adopt a no hunting code
<b>Function: Exploration</b>			
Prospecting	sampling	minor disturbance	keep disturbance and litter (flagging) to a minimum
Gridding	picketing	minor disturbance and litter	use gps grids and keep # of pickets to a minimum
Geochemistry	sampling	minor disturbance	keep disturbance and litter (flagging) to a minimum
Geophysics	traverses	minor disturbance	conduct only in winter or by air
Survey	disturbance	stress on vegetation	keep disturbance to a minimum
Drilling	disturbance cuttings fuel spills garbage/litter tss in water	destroy vegetation destroy vegetation stress vegetation/contaminate soil unsightly land use muddy runoff	keep size of drill site to a minimum add peat and fertilizer to enhance regeneration spill prevention handling methods thorough site clean-up on ddh completion use sumps to settle solids prior to release
Corefarms	disturbance	stress on vegetation	progressive rehab. by periodic use of granular fertilizer

## 2.3 OBLIGATIONS REGISTER

Note: This obligations register will be updated as the Project progresses from the current phase of advanced exploration through feasibility to production.

<b>Instrument</b>	<b>Relevant Mandate</b>	<b>Agency</b>
<b>Federal Obligations</b>		
Fisheries Act	protect fish habitat angling	Fisheries Canada
Environmental Protection Act	contaminants	Env. Canada
Migratory Birds Act	waterfowl and other migratory birds	Env. Canada
Nunavut Waters Act (see copy attached)	water / water quality management	Nunavut Water Board
Transport of Dangerous Goods Act	fuel resupply hazardous goods resupply	Transport Canada/ GNU
<b>Territorial Obligations</b>		
Public Health Act	camp sanitation	GNU Health and Safety
Mine Safety Act	camp health and safety	GNU Health and Safety
Wildlife Act	nuisance wildlife hunting wildlife habitat	GNU DSD GNU DSD GNU DSD
<b>Other</b>		
Rules and Proc. for Management of Inuit Owned Lands	land use of Inuit Owned Lands	Kivalliq Inuit Assoc.
Land Use Licence (see copies attached)	permit for all operations on IOL	Kivalliq Inuit Assoc.

## 2.5 APPLICATION

It is the responsibility of the Meliadine West Gold Project manager to ensure that all persons responsible for field activities are knowledgeable of the scope and intent of this EMS. Elements of this EMS pertinent to the day to day operations that must be practised by all persons for this EMS to be effective like catch and release angling, garbage, nuisance wildlife, shall be included in the staff induction / orientation briefing that is compulsory on arriving at the Project site. The content and delivery of these briefings are the responsibility of the camp manager in cooperation with the manager for health and safety.

All Project field activities shall be conducted in compliance with this EMS, including the actions of contractors and sub-contractors. A copy of this EMS is to be available at the exploration site along with the Project's safety and emergency procedures manual.

### 3.0 PRELIMINARY PROFILE OF EXPLORATION PROJECT ENVIRONMENT

#### 3.2 PROPERTY / PROJECT NAME

Meliadine West Gold Project

Date: Form completion 1  
Form Update

9 January, 1998  
December , 2004

Author

Ben Hubert, Coordinator, Environment and  
Community Relations (consultant); update  
by Comaplex Minerals Corp.

#### 3.3 PROPERTY LOCATION

Country  
Province / State  
County / Township  
lat/long  
NTS

Canada  
Funafuti  
n/a  
63° 01' 30"N , 92° 10' 20"W  
55N/1 and 55K/16 (1:50,000)

#### 3.4 REGULATORY

##### 3.4.1 Nunavut regulatory regime

##### Nunavut Land Claims Agreement

A new territory of Nunavut was created on April 1, 1999 which effectively divided the Northwest Territories into two separate jurisdictions with Nunavut in the Eastern Arctic and the Northwest Territories in the Western Arctic. Nunavut was created as a result of the Nunavut Land Claims Agreement ("NLCA"). The aims of the NLCA are to bring certainty to ownership and use of land and resources, ensure participation by the Inuit in decisions effecting utilization and conservation of land, water and resources, confirm Inuit wildlife and harvesting rights, provide financial compensation and economic development opportunities for the Inuit, and encourage self reliance and promote cultural and well being of the Inuit. Under the NLCA some of the land within Nunavut is subject to rules and regulations relating to environmental management of such land. Such management is effected through "co-management institutions" established under the NLCA. These institutions are made up of equal numbers of members appointed by the Minister of the Department of Indian and Northern Affairs, upon nomination by Inuit and other members appointed at the government's discretion. Note that federal implementing legislation in respect of these institutions has not yet been enacted.

##### Nunavut Planning Commission

The NPC has broad responsibility for planning policies and objectives for Nunavut, for the establishment of land use plans for the territory, and for determining whether project proposals conform to those plans. To date no land use plans have been fully approved. The NPC also has a monitoring function in respect of the ecosystemic and socioeconomic environment in Nunavut.



## **Nunavut Impact Review Board**

NIRB has responsibility for development impact and screens all project proposals in Nunavut whether they are on crown lands or on Inuit Owned Lands ("IOLs"). NIRB is authorized to recommend a public review by a NIRB review panel or a federal environmental panel of these proposals if it considers that they are likely to have a significant environmental or socioeconomic impact or cause significant public concern in Nunavut. Upon completion of the review process, NIRB will issue a project certificate which may contain terms and conditions. NIRB does not have a mandate for setting requirements for socioeconomic benefits.

## **Nunavut Water Board**

The NWB has responsibility for water management and reviews and approves all water uses and disposal of waste in water in Nunavut. The NWB is required to hold a public hearing before approving an application for water use unless no public concern is expressed in connection with the application.

## **Nunavut Wildlife Management Board**

The NWMB has responsibility for wildlife management. It is responsible for approving Conservation Areas, endangered species, advising NPC about planning for wildlife management zones and advising other agencies regarding mitigation measures and compensation for damage to wildlife habitat. However, it has no direct regulatory role *vis-a-vis* mining development. Under the NLCA, Inuit are entitled to access to leased lands for wildlife harvesting purposes.

## **Surface Rights Tribunal**

SRT has responsibility for granting entry and access onto IOLs and for determining the amount and allocation of compensation to the surface title holder. It also has authority to determine compensation payable for wildlife compensation claims. It may hold hearings in connection with compensation.

The NLCA provides a process through which Inuit organizations can be designated to discharge specified duties. Nunavut Tungavik Inc. ("NTI") has authority for managing the subsurface rights on IOLs within Nunavut. Regional associations have authority for managing surface rights and granting land use permits.

### **3.4.2 Permits required for mineral exploration pursuant to the NLCA:**

#### **Land use**

- permit required for all commercial activities on Inuit Owned Land; permit valid for two year period with provision for one year extension with new application required for continued activities.
- apply to Kivalliq Inuit Association.

**Required performance:** to meet the terms and conditions of permit.

## Water

- all water use in Nunavut requires a license from Nunavut Water Board.

**Required performance:** to meet the terms and conditions of the license

Any activity that may damage fish habitat should first obtain an authorization from the Federal Department of Fisheries and Oceans. This relates to land use that requires the drainage of lakes or the disturbance of lake and stream beds.

<b>Air</b>	<u>n/a</u>
<b>Permit required</b>	_____
<b>Source</b>	_____
<b>Required performance</b>	_____

## Mine Development

The necessary permits and licences to construct and operate a mine will not be issued until an Inuit Impact and Benefit Agreement (IIBA) is negotiated and agreed upon with the appropriate Designated Inuit Organization (DIO) as required by Article 26 of the NLCA.

### 3.4.3 Federal Crown Land

- land use application to be submitted to Department of Indian Affairs and Northern Development (DIAND) in Yellowknife pursuant to the Territorial Land Act and Territorial Land Use Regulations.
- all applications for land use in Nunavut are screened for environmental effects by the Nunavut Impact Review Board; allow at least 6 weeks for review and processing applications.

**Required performance:** as per terms and conditions of permit

### 3.5 ENVIRONMENTAL SETTING

#### Climate - Rankin Inlet

Month	Mean Temp (deg. C)	Mean Hourly Wind Speed (km/h)*	Blowing snow (days/mo)	Mean Total Precip. (mm)
January	-32.2	24	16	6.9
February	-30.3	23	12	6.7,
March	-25.6	22	13	14.1
April	-16.6	21	8	15.5
May	-6.7	20	4	17.9
June	3.4	18	-	34.1
July	9.7	21	-	39.9
August	9.0	24	-	59.5
September	3.0	26	-	48.0
October	-5.6	25	6	34.9
November	-18.5	23	12	22.1
December	-27.9	22	13	8.6

\* Wind direction is predominantly from the northwest

Data source: Canadian Climate Data, Environment Canada, Rankin Inlet.

Period of record: 1981 - 1993

#### Prior land use

Has an environmental audit been completed - Y / N  
is one required - Y / N ?

Note: An environmental audit shall be conducted on all lands that have had previous activities that had the potential to place basic environmental elements at risk. An environmental land use audit should include an examination of the exploration lands for compliance to current statutory requirements as well as CMF requirements as reflected by this EMS.

An audit of the camp and all land based drill sites in the exploration area was completed prior to CMF taking responsibility for these lands in June 1995. See report by Hubert and Associates Ltd. in Meliadine West Project file at headquarters.

**Status of surface lands** - unoccupied crown / occupied crown / **patented:**  
**Ownership known** - Y / N.

These are Inuit Owned Lands pursuant to the Nunavut Land Claims Agreement between the Inuit of Nunavut and Her Majesty in right of Canada.

**Current land use:** subsistence hunting, trapping and fishing, and recreation for residents of Rankin Inlet and Chesterfield Inlet

**Land owner:** Name Kivalliq Inuit Association  
 Postal address PO Box 340  
 Rankin Inlet, Nunavut X0C 0G0  
 Ph. 867 645 2810  
 Fax 867 645 2348  
 E-mail

**Maps available**

topographic	<u>Y</u> / <u>N</u>
habitat type	<u>Y</u> / <u>N</u>
forest type	<u>Y</u> / <u>N</u>
land use	<u>Y</u> / <u>N</u>
aerial photography	<u>Y</u> / <u>N</u>
on file in CMF project office	<u>Y</u> / <u>N</u>

**Prior mineral exploration/mining activity**

Type Y / N  
prospecting / exploration / mining;

**Past impact**

exploration	
cut lines and clearings	<u>Y</u> / <u>N</u>
trenching	<u>Y</u> / <u>N</u>
drilling	<u>Y</u> / <u>N</u> ;
camps	<u>Y</u> / <u>N</u>
garbage dumps	<u>Y</u> / <u>N</u>
mining	
pits	<u>Y</u> / <u>N</u>
ramps	<u>Y</u> / <u>N</u>
shafts	<u>Y</u> / <u>N</u>
tailings	<u>Y</u> / <u>N</u>
stable	<u>Y</u> / <u>N</u>
vegetative cover _____%	
waste rock dumps	<u>Y</u> / <u>N</u>
placer operations	<u>Y</u> / <u>N</u>

**Comment:** The condition of Inuit Owned Land is in compliance with all applicable laws, regulations and related permits

**Other land use activity**

Forestry	NA
cutting rights in place	NA
Quarrying	<u>current</u> / <u>past</u>
Hunting	<u>resident</u> / <u>tourism</u>
Fishing	<u>resident recreational</u> / <u>resident commercial</u> / <u>tourism</u>
Trapping	<u>current</u> / <u>past</u>
Cottages	<u>seasonal</u> / <u>year round</u>

Snowmobile trails	<u>Y</u> / N
Other	_____
Comment	_____

**Regional land / water use plan in place** Y / N / NA

**Land use plan classification of exploration lands** no special classification assigned

**Land management agency name** Kivalliq Inuit Association, Rankin Inlet, Nunavut

Contact name **Luis Manzo # 867 645 2810**

Title **Chief Lands Officer**

**Public interest groups active locally**

**Conservation-naturalist**

- 1 **World Wildlife Fund** at the territorial level - no known local activities
- 2 **Canadian Arctic Resources Committee** - no known local activities
- 3 **Community Land and Resources Committee** - established by the Kivalliq Inuit Association to work with land manager to review land use applications for use of KIA lands; contact through KIA Land Office 867 645 2810.

**Fish and game**

- 1 **Hunters and Trappers Organization** - a designated Inuit Organization under the NLCA concerned with renewable resources and land use; contact executive secretary 867 645 2350.
- 2 **Keewatin Wildlife Federation** active at regional level; contact executive director 867 857 2695.
- 3 **Nunavut Wildlife Management Board** created under land claim active at territorial level on wildlife management and habitat concerns; contact executive director 867 979 5007.
- 4 **Qaminirjuaq and Beverly Caribou Management Board** active over the range of these two caribou herds including NWT, Manitoba and Saskatchewan provincial governments; contact executive secretary 613 733 2007.

**Other Organizations**

Snowmobile club	<u>NA</u>
Outfitters	<u>NA</u>
Prospectors	<u>NA</u>

**Chamber of Mines** active at the territorial level; contact general manager 867 873 5891.

**Chamber of Commerce** NA

Is property within the range of, or in the habitat of an endangered species Y / N

Species \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

National historic sites on or near property NA  
distance \_\_\_\_\_ km

Local heritage sites on or near property name: Meliadine Territorial Park  
distance 10 km

Meliadine Territorial Park, managed by the Municipality of Rankin Inlet contains numerous prehistoric Inuit dwellings; several archaeological sites are documented in the records of the Archaeological Survey of Canada near Meliadine Lake NW of camp; others (Inukshuit) are known near Noble Lake.

### 3.6 WATERSHED ISSUES

Water Management Agency Name Nunavut Water Board

Contact name Phillippe diPizzo, Executive Director; # 867 360 6369

River basin name Meliadine River with an outflow into  
Peter Lake of the Diana River basin

Part of a Heritage River system Y / N

Is property within the basin of a municipal water source Y / N

Is water monitoring network in place Y / N  
for - quantity / quality

Sampling for water quality done by Comaplex in 1994 with baseline studies initiated by CMF in 1997; water balance studies for water flow initiated by CMF in 1997, Diana River has been monitored for annual flow since early 1980's.

Other active industries on watershed - specify indicating where in relation to property

upstream and downstream

Mineral exploration by Comaplex and Cumberland, including diamond drilling is underway on lands east of Meliadine West Gold Project, some of which may occur within the Meliadine Basin.

### 3.7 LOCAL INFRASTRUCTURE

Surface access to property  
all season road Y / N - winter only / summer only  
aircraft access

float plane potential on property Y / N

helicopter clearing on property Y / N

comment helicopters and float planes are based in Rankin Inlet

Distance to rail NA km

Port **30** km

Airport **25** km

comment: **port can accommodate deep draft vessels up to 20,000 T**  
**airport can accommodate commercial jets**

#### Utilities

power available	Y / <b><u>N</u></b>
distance from property to line	<b><u>25 km</u></b>
telephone available	<b><u>Y</u></b> / N

### 3.8 ABORIGINAL PEOPLES

This land area is covered by the **Nunavut Land Claims Agreement (NLCA)**

Is the land on an Indian Reserve? Y / **N**

Is this area under aboriginal treaty? Name /number **NA**

Is this area under an aboriginal claim	Y / <b><u>N</u></b>
Active negotiations underway	Y / <b><u>N</u></b>

#### Aboriginal communities with land use interests:

Name: <b><u>Rankin Inlet</u></b>	Pop: <b><u>2,135 in 1996</u></b>
Contact: Lorne Kusugak	Title: <b><u>Mayor - # 867 645 2895</u></b>

Name: <b><u>Chesterfield Inlet</u></b>	Pop: <b><u>350 in 1996</u></b>
Contact: Tony Amauyak	Title: <b><u>Mayor - # 867 898 9969</u></b>

Known sacred or archaeological sites on / near property Y / **N**

Archaeological sites know to be along Meliadine Lake; remnants of numerous prehistoric dwellings within Meliadine Territorial Park along Meliadine River near its outflow to Hudson Bay; Inukshuit known to occur at height of land near Noble Lake, SE of Meliadine camp. A traditional knowledge study has been completed as part of the Meliadine West Project environmental baseline studies.

## **4.0 FIELD OPERATIONS**

### **4.1 PROSPECTING AND STAKING**

Prospecting expeditions should be undertaken only on the basis that no long term sign of prospecting activities would remain in the event that a land position were not taken.

#### **4.1.1 Fuel caches**

For prospecting expeditions requiring fuel to be placed in the prospecting area, cache sites shall be selected that are at least 10 m lateral and at least 1 m vertical from the nearest water body or water course.

All fuel and other materials cached shall be clearly labelled as to contents and the CMF person (including name, address and phone number) responsible.

#### **4.1.2 Sampling and staking**

Flagging will be used to identify locations of collected samples.

### **4.2 ACCESS**

- a. Access to the lands under exploration shall be achieved with as little disturbance to the natural environment as possible. The time frames for rehabilitation for specific ecosystems should be used as a guide when planning access and logistics generally, for the exploration program. Surface access through water courses and riparian habitats is to be avoided.
- b. The use of helicopters in servicing exploration camps and activities shall avoid passing over sites and areas occupied by a domestic or recreational domicile, or any worksite, if possible.
- c. Aircraft serving an exploration program shall maintain altitudes of 300 m when transiting over areas occupied by breeding/nesting waterfowl or concentrations of game animals.

### **4.3 WATER QUALITY BASELINE**

Samples to establish pre program water quality in the area of the exploration program shall be collected from water bodies and water courses on and/or downstream of the exploration activities **before** drilling activities are undertaken.

Record repository: Project's water quality baseline file.

### **4.4 FIELD CAMPS**

#### **4.4.1 Siting**

- a. All potential sites for camps and fuel caches shall be examined for the presence of cultural and/or archaeological remains of significance and where such are noted these should be examined by a professional before the site is disturbed or occupied by CMF.



Record depository: camp and HQ project land use file

- b Camps should be sited on elevated and well drained ground.

#### **4.4.2 Water supply**

- a. For camp locations where water quality is unknown, analyses for metals, organics, bacteria, and water borne parasites (where applicable) shall be completed and reviewed with local health officials or other competent professional, prior to deployment of field staff.

Record depository: original in camp "Environmental Health" file; one copy in HQ Project Environmental Health file.

- b During camp operations and following temporary closure of the camp, potable water storage vessels and raw water sources should be checked regularly for harmful bacteria and water borne parasites.

Water samples for similar analyses shall be taken immediately upon gastro-intestinal complaints of camp residents.

Record depository: camp Environmental Health file.

##### **4.4.2.1 Potable Water Environmental Management Plan**

- Samples for monitoring potable water and receiving waters shall be taken as required, from the following locations:
  - kitchen faucet
  - Meliadine Lake near the water intake
  - Meliadine Lake below the camp grey water outfall.
- Samples shall be submitted to Nunavut Public Health for analyses or to a lab recommended by Nunavut Public Health.
- Results with their interpretation shall be posted on the camp Safety Board.

#### **4.4.3 Sewage**

- a. Structures for ablution shall be either pit privies in suitable soils and where ground water conditions are such that there is no risk of contamination to the potable water source, or facilities that allow for approved disposal or incineration of accumulated excrement in combustible containment (i.e. Pacto).
- b. Grey water should be disposed into a primary treatment mechanism or sump suitably located to avoid risk of contamination of potable water source.

#### **4.4.4 Garbage**

- a. All camps should install incinerators for disposal of combustible garbage. Small camps (up to 15 persons) can use passive incinerators where fuel oil is added to the garbage and suspended (in a fuel drum) above an air source in a metal basket or grill work. All non combustibles should preferably be removed to a community or other approved disposal site, or alternatively where terrain conditions permit, buried below grade near the camp and covered with a minimum of 1 meter of local soil and/or granular material or as specified in permit terms and conditions of the local land use authority where these are more stringent.
- b. Kitchen refuse and other putrescible waste will be stored in scavenger proof containers, and at camps located within the ranges of bears, incinerated daily.
- c. Every effort will be taken to prevent scavengers from obtaining food at exploration camps and the deliberate feeding of wild carnivores (bears, foxes, wolves, weasels and other mustelids) is strictly prohibited.
- d. Every building, shelter and work station in the camp will be equipped with suitably sized metal garbage receptacles and ash trays where appropriate.
- e. There will be regular litter collection in the general area of the camp and equipment marshalling areas to gather and dispose accumulated and wind blown litter including cigarette butts.

#### **4.4.5 Hunting and fishing**

- a. All recreational fishing shall be conducted within the requirements of the law respecting licences and possession limits; it is strongly recommended that fishing be strictly recreational, that only barbless hooks be used, that all fish that could survive be released and a “catch and release” policy be adhered to by all camp occupants.
- b. Firearms in camp shall be stored in secure space under the control of the camp manager and be used only for controlling nuisance wildlife. Hunting by exploration camp personnel while on a tour of duty while exploration activities are in progress shall be prohibited with no exceptions.

#### **4.4.6 Power generation**

- a. Genset(s) should be in a shelter and set on a base that includes a structure or drip pan to contain drips, leaks and spills of fuel and lubricants.
- b. All day tanks and temporary fuel storage vessels for the gensets will be equipped with fluid level indicators and be set in or over drip pans that have the capacity to contain drips and leaks from the lines and pumps serving the genset.

## **4.5 FUEL AND LUBRICANTS**

### **4.5.1 Spill Reporting**

- a. All fuel spills including those of contractors will be reported to appropriate land use authorities. A written report of the fuel spill will be made and reported to the spills hotline if necessary.

### **4.5.2 Fuel resupply and transport**

- a. All drummed fuel received will be inspected for shipping damages prior to placing in cache, with all dented drums set aside for immediate use. Bungs on all refilled drums (unsealed) will be checked for tightness prior to or immediately on placement in the fuel cache.
- b. All conveyances transporting fuel in drums shall carry basic fuel spill clean-up equipment at all times; all conveyances transporting bulk fuel will be operated only by appropriately trained operators and carry basic fuel spill clean-up equipment at all times.
- c. All fuel haul contractors and their operators will receive and be briefed as to the requirements of the transportation and spill contingency plan.

### **4.5.3 Fuel Storage**

- a. All fuel storage sites shall be at least 30 meters from any natural water body or water course and be located in or above a natural depression or otherwise prepared site to contain accidental spills and leaks.
- b. No vessels larger than 205 L (1 barrel) may be used for long term fuel / lubricant storage without secondary containment provided.
- c. Fuel caches for drummed fuel will be laid down in rows of two drums. Drums will be set so that bungs are in the horizontal (quarter to 3) position with enough space between rows for walking and handling leaking drums. Fuel in severely dented barrels should be transferred to undamaged barrels or tanks with care taken when opening to reduce risk of fuel loss due to pressure. (Note: Secondary containment like a berm around the fuel cache for drummed fuel is not recommended on the tundra as it causes unnecessary and very long term terrain and vegetation disturbance.)
- d. Storage vessels larger than 205 L will be double walled (CSA or ULC approved) or will be placed on or in a containment structure with a volume equal to the volume of the vessel; or in the case of multiple vessels 150% of the largest vessel in the fuel dump. All transfer sites shall be equipped with vessels into which fuel from pump hoses and lines can be drained. Accumulated fuels from draining pumps and lines shall be used for the incinerator.

- e. All fuel storage vessels will be clearly marked as to contents and checked periodically.
- f. All fuel types will be stored by type in separate locations.
- g. All fuel storage sites will have a basic fuel spill and clean-up kit.
- h. All fuel transfer sites will have designated vessels to receive fuel remaining in pumps and hoses as well as remnants from “empty” barrels and larger storage vessels. Fuels accumulated in these designated vessels will be used for incinerating camp garbage.
- i. All tanks for stationary engines and heating devices will be equipped with shut off valves.
- j. All storage tanks for stationary engines or heating appliances will be equipped with fluid level indicators and be set into or over drip pans that have the capacity to contain leaks and spills from pumps and/or lines servicing the tank.
- k. All mobile equipment will be maintained and refuelled by procedures that prevent fuel and lubricant spills and leakage.
- l. All lubricants will be clearly marked with individual lubricant type stored together and clearly separate from other lubricant types. Lubricant storage to be in locations that will contain leakage from lubricant containers or be lined with absorbent matting for the same purpose.
- m. All used lubricants including those from contractors' equipment will be collected and disposed of by approved means where facilities are available and by dilution with incineration fuels where approved facilities are not available.
- n. Prior to seasonal shutdown of exploration camps all main valves on fuel tanks will be closed. Valves on tanks larger than 205 L will be locked. Each barrel in the fuel cache will be checked for loose bungs. Partial barrels will be set up on a slant so melt water cannot seep through bung seals.
- o. All fuel storage sites shall have a fuel clean-up kit on location (see Appendix 5)

## **4.6 CAMP REMOVAL AND RECLAMATION**

### **4.6.1 Salvage**

- a. All equipment, structures and material that can be salvaged in a cost effective manner for subsequent use in company activities in the region or elsewhere shall be salvaged and placed into storage, with accurate inventory recorded, at a location approved for such use by the appropriate local land use authority.
- b. All structures and material not cost effective for salvage for future company needs shall be offered “as is where is” to local contractors and suppliers who worked with the company in

the course of the exploration program. All transfers of structures requiring removal or continued land tenure at the original site must have the prior formal approval of the appropriate land use authority.

- c. All site “final” clean-up shall be undertaken only under “summer” conditions. All combustible scrap shall be burned and the ashes raked for removal of metal fasteners and other non-combustibles; all non-combustibles shall be removed to an approved disposal site or buried and covered with at least 1 meter of local soil or granular material on site on the formal approval of appropriate land use authorities.
- d. On the completion of site clean-up all sites with terrain disturbance shall be contoured with local material as appropriate to prevent surface erosion or unnatural ponding; mulch and slow release fertilizer (as appropriate) shall be placed over the area of disturbance and adjacent vegetated areas.

## **4.7 MINERAL EXPLORATION FIELD WORK**

### **4.7.1 Stakeholder / community relations**

- a. Prior to beginning field exploration programs and on the completion of field programs, Comaplex will endeavour to hold community meetings to inform the local citizens of the scope, goals and status of the Meliadine West project.

### **4.7.2 Cultural and / or archaeological issues**

- a. Comaplex will continually endeavour to identify sites of cultural or historical significance and report such sites to the appropriate local authorities in a timely manner.

### **4.7.3 Sampling**

- a. Sampling and mapping shall be completed with minimal disturbance to the natural environment.

### **4.7.4 Gridding**

- a. To the extent possible, grids shall be established with a minimum use of stakes and pickets. Where these materials are necessary their location shall be recorded for subsequent clean-up as agreed upon with the land management agency and/or other parties with a direct interest in the exploration lands.

### **4.7.5 Drilling**

**The details of this EMS pertaining to drilling shall be obligatory for drilling contractors as appropriate.**

- a. Prior to release of the drilling contractor’s obligations, all litter and garbage is to be removed

from the drill site with only a collar at ground level, collar ID and cuttings being the acceptable surface sign of a completed drill site.

### **Drilling - from land**

- b. All drill sites shall be confined to an area as small as possible within the limits dictated by safety and efficiency. All set up configuration in relation to water bodies and water courses shall be reviewed in advance, especially with respect to placement of fuel tanks and draining of drilling fluids.
- c. All drilling operations will have on hand the basic fuel / lubricant clean-up kit.
- d. No fuel storage or handling vessels greater than 25 L capacity at a drill site shall be within 10 m of a natural water body or water course.
- e. Water pumps shall be placed in trays or on platforms lined with absorbent matting placed under the motor and pump assembly to capture all fuel and lubricant spills and leaks. (This applies equally to both summer and winter setups including setups on ice platforms.)
- f. Exploration activities that require terrain alteration like diamond drilling will contain the area of disturbance to a minimum and on removal of rigs will apply granular, slow release fertilizer and where necessary mulch to enhance revegetation of the area and the cuttings. Reseeding is not recommended.
- g. The drainage from a drill site will be trained or dyked to prevent suspended solids and sediments from entering directly any nearby water body or natural water course.

### **Drilling over water**

- h. When drilling from a floating platform (including ice), the platform will be covered with absorbent matting where ever required to catch fuel and lubricant drips and leaks; all drilling fluids will be recirculated and solids collected for on land disposal at a location approved by local land use authorities.

### **Post-drilling clean-up**

- i. DDH collars shall be identified and capped at or below ground level. All garbage and litter shall be removed from drill sites prior to releasing contractor from DDH site obligations.

### **DDH Rehabilitation**

- j. Allow time for water to drain from mud cake. Collect garbage and litter that have been exposed by settling in mud and complete drainage of site. Take a photograph of the site before applying peat to mudcake. Open bale of peat and incorporate peat into mud cake by raking and stomping.

#### 4.7.6 Core storage

- a. All core will be set up on a firm and level base that can serve as long term storage as required. Wherever possible core storage should be arranged in a north / south orientation to allow sunshine into the alleys and so promote melting, drying and overall plant growth.
- b. On camp shut down and permanent abandonment the core racks will be secured for long term stability and boarded up with plywood or prepared for long term storage as required by the land use permit if more stringent conditions apply.

#### 4.7.7 Rock chemistry

- a. Where an exploration project shows high potential for production and progresses to a prefeasibility study, rock samples of every major rock type in the mineral deposit shall analyzed for acid / base generation and neutralization potential.

#### 4.7.8 Underground Exploration

- a. Land surfaces in and around an underground exploration program subject to permanent disturbance shall be examined for the presence of artifacts of heritage and archaeological significance prior to any site work.
- b. Soil and overburden stripped to expose bedrock for pits and portal sites shall be stockpiled for future reclamation needs. Where significant organic soils are present these shall be stockpiled separately from mineral soils.
- c. Water for underground exploration work shall be used as sparingly as practical with recirculation used when ever and where ever possible. Water discharged from underground workings shall be contained in a sump designated to hold discharges for analyses prior to release to the environment.
- d. Spilled explosive shall be cleaned up prior to blasting and disposed of in an approved manner **and not as debris for the waste rock dump or wastewater sump.**
- e. Waste rock with acid generation potential (NP/AP ratio less than 3.0) shall be stored separately from other waste rock and remain accessible for future disposition.
- f. Ore with acid generating potential (NP/AP ratio less than 3.0) shall be stored separately and remain accessible for future disposition.
- g. A QA/QC (quality assurance / quality control) program shall be developed to test for water quality in the run off from waste rock and ore piles and disposal sites. The suite of analyses on QA/QC water samples shall be developed in consultation with the regulator (Nunavut Water Board).

## **4.8 CLOSURE AND ABANDONMENT**

### **Preliminary Demobilization and Reclamation Plan Meliadine West Gold Project Camp**

#### **Introduction and Background**

CMF and its partners have been conducting mineral exploration in the Meliadine West area since 1990. The lands in the exploration area are Inuit Owned Lands (IOL) pursuant to the Nunavut Land Claims Agreement (NLCA). Land use for the exploration activities has been authorized by the Kivalliq Inuit Association (KIA), the regional Inuit Association who holds title to IOL in the Kivalliq Region of Nunavut. Rules and procedures for the management of IOL have been established by Nunavut Tungavik Inc. - the agency that negotiated the NLCA. These require that the intensively used lands in the exploration area like the camp and fuel storage areas be held be a surface lease. The lease requires that a “Reclamation Plan” for the lease area be developed.

A condition of the lease is that, on lease termination, CMF will return the area of the camp and fuel storage areas to a condition as near to its original natural state as practical and possible. This preliminary demobilisation and reclamation plan will be filed with KIA as required by the lease (Schedule C). A “Final Reclamation Plan” will be developed and filed with KIA prior to lease termination; in the meantime progressive reclamation practises will be undertaken to keep the environmental effects of local land use in the lease area to a practical minimum.

#### **Demobilization**

All equipment, structures and fuel containers will be removed from the area of the lease prior to lease termination. Buildings and materials with ongoing value to CMF will be salvaged by CMF; local persons and businesses will be given opportunity to salvage remaining buildings and materials that would otherwise be destroyed prior to CMF undertaking final land reclamation procedures. The only materials and structures remaining will be drill core stored in permanent racks on gravel pads.

#### **Structures**

Structures presently on the site include both soft sided Weatherhaven shelters, rigid “Atco” type trailers, stick built shacks, stick built generator shelters, several fuel pump shelters, and several canvas tent frames. A rigid insulated and heated corridor network connects the main accommodations, kitchen/mess and shower structures. Weatherhaven units consist of four person “sleepers”, sixteen person “sleepers”, a kitchen / mess, a shower / laundry, an office, a TV/rec room, a core logging and sample processing lab, and a geotech office.

It is expected that all Weatherhaven units will be salvaged by CMF. The rigid structures and Weatherhaven bases may be salvaged by local interests. All unsalvaged materials will be burned on site with the non-combustible remainder collected and removed to the municipal land fill at Rankin Inlet.

#### **Drilling materials and fuel**

All fuel will be removed either to Rankin Inlet or to the minesite. Similarly all useful material like salt, drilling compounds, and surplus peat and fertilizer will be relocated to Rankin Inlet for local disposal or to the minesite. All fuel vaults and barrels will likewise be relocated.



### **Non-combustible Waste**

All non-combustible waste will be removed to the Rankin Inlet municipal land fill. Material to be burned will be consolidated to reduce the number of sites and total area of the scorched tundra. All burning sites will be raked and remaining metal removed and placed in the municipal land fill.

### **Reclamation**

The natural revegetation of the site generally will be slow due to the dry conditions that exist atop this ridge. The use of fertilizers is generally most effective in moist sites and while it helps on drier sites, the response by the tundra plant community on the higher ground occupied by the camp will be significantly slower.

There will be four different surface conditions that will require reclamation on termination of activities at the present camp site:

- **Areas of heavy traffic:** In these areas the total amount of vegetation on surface is diminished thereby reducing the insulative layer over the permafrost which has receded allowing surface settlement and so there appear to be more rocks protruding through the surface. These areas remain stable and reclamation will involve applications of fertilizer to accelerate natural revegetation. These sites will also receive applications of fertilizer in the interim to stimulate healthier plants and seed development on the margins of the disturbed areas.
- **Gravel pads and walkways:** Gravel has been placed on the lease area either to establish a level supporting surface under fuel tanks and buildings, or to replace wooden walkways in high foot traffic areas. The natural surface remains stable and is bordered by natural vegetation. The gravel will be mixed with peat and fertilizer and be dispersed; the original ground surface will be fertilized and allowed to revegetate naturally.
- **Building and core rack bases:** The prolonged presence of a building has prevented plant growth by blocking light to the plants on the site. Similar conditions existed at the former camp site which was vacated in late winter 1996. The natural revegetation of those building sites is progressing but slow. The ground surface at building sites remains stable and time alone will allow plants to become established. This will be enhanced by limited scarification to improve the germination of seeds from adjacent plants responding to the application of fertilizer throughout the lease area generally.
- **Burned sites:** Sites that have been used to burn remaining wood and other combustibles on demobilization will be few in number and limited in size. All live plant tissue in the soil will have been destroyed by the heat but the surface will be stable. Like former building sites discussed above, natural revegetation will be slow. The sites will be raked to remove metal, the ash scattered, and the sites fertilized.

### **Drill Core**

There are over 140,000 metres of drill core in storage at the site. More will be added prior to termination. If, at lease termination there is no further activity in the Meliadine West area by CMF, the core will be restacked on more durable and stable gravel pads for long term storage and access.

**APPENDIX ONE**  
**CMF LOSS CONTROL FUEL SPILL REPORTING FORM**

(INTERNAL USE ONLY)

**Non-Compliance Category:**

Location:

Summary of Non-Compliance:

Law/Regulation Breached:

Status:

Progress on Resolving the Issue:

Expenditure:

Anticipated Compliance Date:

Officer(s) Responsible:

## **APPENDIX TWO**

### **Camp Closure Checklist**

#### **Camp Closure Checklist**

1. Incinerate all combustible garbage.
2. Salvage or incinerate all freezable/putrescible kitchen goods.
3. Drain all water lines and pumps.
4. Close and lock all supply valves at fuel storage tanks.
5. Fill all fuel day tanks to 95% capacity.
6. Shut off and lock all fuel lines to heaters, furnaces and generators.
7. Drain fuel lines and dispose accumulated fluids in incinerator.
8. Set all partially used fuel barrels on end and slanted so that melt water can not seep into drum.
9. Check all bungs on drums with fuel.

## **APPENDIX THREE**

### **Drill Site Rehab Procedure**

#### **Drill Site Rehab Procedure**

1. Allow site to drain before initiating rehab efforts.
2. Remove all garbage and debris that may have emerged from cuttings during drainage and settling of mud cake.
3. Open bale of peat and distribute over mud cake and incorporate into mud by raking or stomping.
4. Check drill site completion form (attached).