## FOR PUBLIC COMMENT

Background Document supporting Public Participation Opportunity #1

In accordance with the

Canadian Environmental Assessment Act

## **Proposed Project:**

Spanish Mountain Gold Mine
70 Kilometres Northeast of the City of Williams Lake, British Columbia

## Proposed by:

Spanish Mountain Gold Ltd.

## Prepared by:

Canadian Environmental Assessment Agency

Canadian Environmental Assessment Registry Reference Number: 11-03-63917

October 21, 2011 - November 21, 2011

### 1. OVERVIEW OF THE ENVIRONMENTAL ASSESSMENT

In general, environmental assessment is a process to predict, avoid or minimize the effects of a proposed project on the environment before the proposed project is carried out. The environmental assessment will identify potential effects of the proposed project on the environment, propose measures to avoid or mitigate adverse effects of the proposed project on the environment and predict whether there will be significant adverse effects on the environment after mitigation is implemented.

Spanish Mountain Gold Limited's proposal to construct and operate the Spanish Mountain Gold Mine (the Project), requires an environmental assessment to be carried out in accordance with the *Canadian Environmental Assessment Act*. It has also been determined that a comprehensive study type environmental assessment process is required because the proposed production rate of 40,000 tonnes of ore per day exceeds the threshold of 600 tonnes of ore per day for a gold mine as described in the *Comprehensive Study List Regulations*. In addition, the Project also proposes the construction of a metal mill that is anticipated to process 40,000 tonnes of ore per day which exceeds the threshold of 4,000 tonnes of ore per day as described in the *Comprehensive Study List Regulations*.

The Canadian Environmental Assessment Agency has resources to guide the public through the environmental assessment process. For information about the environmental assessment process, please visit the Canadian Environmental Assessment Agency website at <a href="https://www.ceaa-acee.gc.ca">www.ceaa-acee.gc.ca</a>.

### Federal Agencies involved in the Environmental Assessment

Several Federal Agencies are involved in the environmental assessment of the proposed project including:

FEDERAL AGENCIES	INVOLVEMENT	
Canadian Environmental     Assessment Agency	Ensures that an environmental assessment is conducted in accordance with the <i>Canadian Environmental Assessment Act</i> . Acts as the 'one window' into the Government of Canada for the environmental assessment process.	
<ul> <li>Natural Resources Canada</li> <li>Fisheries and Oceans Canada</li> <li>Transport Canada</li> </ul>	May have a decision making responsibility in relation to the issuance of federal permits and/or authorizations for the proposed project. Required to ensure that an environmental assessment of the proposed project is conducted prior to taking any decisions that would enable the proposed project to proceed. Provides expert advice to support the completion of the environmental assessment.	
<ul><li>Environment Canada</li><li>Health Canada</li></ul>	Provides expert advice as requested to support the completion of the environmental assessment.	

### Other Legislative Requirements or Policy Initiatives

In accordance with the Cabinet Directive on Improving the Performance of the Regulatory System for Major Resource Projects, the proposed project has also been identified as a Major Resource Project by the Major Projects Management Office due to its complexity and multijurisdictional nature. The proposed project is therefore also subject to review in accordance with the federal major projects review initiative. Additional information on the Major Resource Project initiative is available at <a href="https://www.mpmo-bggp.gc.ca">www.mpmo-bggp.gc.ca</a>.

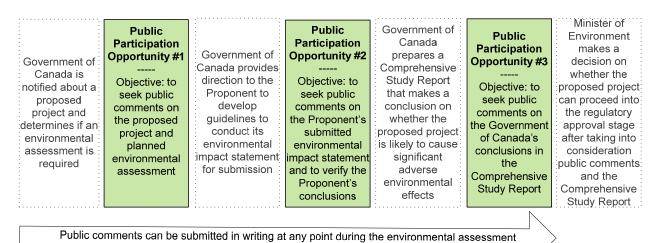
The proposed project is also subject to the *British Columbia Environmental Assessment Act*. A cooperative federal and provincial assessment process will be conducted in accordance with the principles outlined in the *Canada-British Columbia Agreement for Environmental Assessment Cooperation*. Additional information on the provincial environmental assessment is available from the British Columbia Environmental Assessment Office website at: <a href="https://www.eao.gov.bc.ca">www.eao.gov.bc.ca</a>

### 2. PURPOSE OF PUBLIC PARTICIPATION

The primary objectives of the environmental assessment are to minimize or avoid adverse environmental effects from the proposed project before they occur, and to incorporate environmental factors into decision making by the Government of Canada. Public participation is an important element of the environmental assessment process; it strengthens the quality of the environmental assessment. The public is an important source of local and traditional knowledge about a proposed project's site and likely effects on the environment.

The Government of Canada plans to conduct three public participation opportunities within the environmental assessment of the proposed project as detailed in Figure 1 below. At this time, Public Participation Opportunity #1 will run from October 21, 2011 to November 21, 2011, providing the public the opportunity to comment on the proposed project and the planned environmental assessment.

**Figure 1**: Planned Public Participation Opportunities in the Environmental Assessment of the Spanish Mountain Gold Mine Project



### 3. OBJECTIVES OF PUBLIC PARTICIPATION OPPORTUNITY #1

At this early stage in the environmental assessment, the Government of Canada is sharing information about the proposed Project and the planned environmental assessment. The objective for Public Participation Opportunity #1 is to seek public comments on the proposed project and planned environmental assessment.

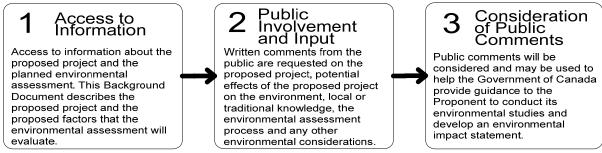
The public is invited to share comments on:

- ☑ the proposed project;
- ☑ the proposed factors to be included in the environmental assessment including the valued ecosystem components, other aspects of the environment, other factors and relevant matters:
- ☑ potential effects of the proposed project on the environment;
- ☑ local or traditional knowledge;
- ☑ the planned environmental assessment process including the planned public participation opportunities; and,
- ☑ any other environmental considerations in relation to the proposed project.

As described in Figure 2, the Government of Canada is proposing environmental factors that may be potentially affected by the proposed Project and should be examined by Spanish Mountain Gold Limited in its Environmental Impact Statement. Comments are sought on which aspects of the proposed Project and its potential effects on the environment may be of concern to the public so that they can be considered for inclusion in the environmental assessment. The proposed factors to include in the environmental assessment are outlined in section 5 of this Background Document.

Figure 2: Process for Public Participation Opportunity #1 – Public Comment Period

# Public Participation Opportunity #1 – Public Comment Period



## **Consultation with Aboriginal Groups**

In addition to providing opportunities for public participation, the Government of Canada is consulting with potentially affected Aboriginal groups. The Government of Canada has a duty to consult and, if appropriate, accommodate, when it contemplates conduct that might adversely impact potential or established Aboriginal and treaty rights. The Government of Canada is consulting with potentially affected Aboriginal groups during the environmental assessment process and will work closely with the Province of British Columbia, Spanish

Mountain Gold Limited and potentially affected Aboriginal groups to achieve a coordinated process.

### 4. SUMMARY OF THE PROPOSED SPANISH MOUNTAIN GOLD MINE PROJECT

Spanish Mountain Gold Ltd. is proposing to construct and operate the Spanish Mountain Gold Mine Project (the Project), approximately 70 kilometres northeast of Williams Lake, British Columbia. The Project is anticipated to process 40,000 tonnes of ore per day and is expected to produce approximately 116 metric tonnes of gold doré over a mine life of 10 years. Doré will be processed in a preparation plant on site, and is expected to be transported from site to a precious metals refiner located in Ontario. Doré transport will be contracted to a firm that will supply armoured vehicles and secure shipment. It is anticipated that mine closure will be completed within two years after the mine life (after Year 10), followed by three years of reclamation and monitoring.

### **Location of the Proposed Project**

The proposed Project is located in the Cariboo Region of central British Columbia, approximately 70 kilometres northeast of Williams Lake. The Project is centred at latitude 52°35´21", longitude 121°26´28" (Universal Transverse Mercator geographic coordinates zone 10, 605027 East, 5827713 North). The closest population centre is the village of Likely, located approximately 6 kilometres northwest of the Project.

Please refer to Figure 3 for a map of the proposed project location and components.

### **How to Obtain Additional Information**

To facilitate Public Participation Opportunity #1, Spanish Mountain Gold Limited was requested to prepare a summary of the key components they are proposing to construct, operate and decommission as part of the Spanish Mountain Gold Mine Project. This summary is provided in the following section titled "Key Components of the Proposed Project," and is intended to provide a brief description of the Project but not replace the full project description. The full project description for the Spanish Mountain Gold Mine Project as submitted by Spanish Mountain Gold Limited can be viewed on Canada's Major Projects Management Office website at: <a href="https://www.mpmo-bggp.gc.ca">www.mpmo-bggp.gc.ca</a>

Additional information about the Spanish Mountain Gold Mine Project and Spanish Mountain Gold Limited can be found on Spanish Mountain Gold Limited's website at: <a href="https://www.spanishmountaingold.com">www.spanishmountaingold.com</a>. Questions may be directed to Spanish Mountain Gold Limited via email at: <a href="mailto:community@spanishmountaingold.com">community@spanishmountaingold.com</a>

## **Key Components of the Proposed Project**

The construction, operation and decommissioning of the following key components are proposed by Spanish Mountain Gold Limited and described here (see Figure 3):

Component	Description
Open Pit	The Open Pit will be developed using conventional rotary drilling, blasting, and loading with hydraulic shovels and 180-tonne trucks. The final Open Pit footprint will cover a total surface area of 124 hectares and will be mined in four phases with waste material placed adjacent to the pit:  • Phase 1: the first area of high-grade material in the Main Zone • Phase 2: the North Zone pit. A haul road will provide access between the Main Zone and the North Zone. • Phase 3: the second area of higher-grade ore of the Main Zone. • Phase 4: the final phase within the Main Zone.
Plant site	The plant site will be constructed to the west of the open pit and will consist of a primary crusher, crushed ore stockpile, process plant, truck shop, and office, covering a total surface area of 10 hectares. The process plant is designed to process 40,000 tonnes per day of ore and will operate 24 hours per day, 365 days per year.  The process plant will produce gold doré via crushing and grinding, froth flotation, carbon-in-leaching cyanidation, carbon elution, gold electrowinning, sludge filtering, mercury retort and a melt furnace. Various chemical reagents will be added to the process slurry stream to facilitate the gold flotation process. Reagents will be stored, mixed, and distributed from a central reagents area. To ensure spill containment, the reagent preparation and storage facility will be located within a containment area designed to accommodate 110% of the content of the
	largest tank.  Some process plant ore will be mined during the pre-stripping of the mine. This ore will be stored adjacent to the primary crusher location prior to commencing plant production, though it is anticipated that the stockpiles will be drawn down by the end of Year 2. It is anticipated that the plant will process 40,000 tonnes per day of ore until Year 7 when production will start to taper off. Mining will be completed in Year 10.

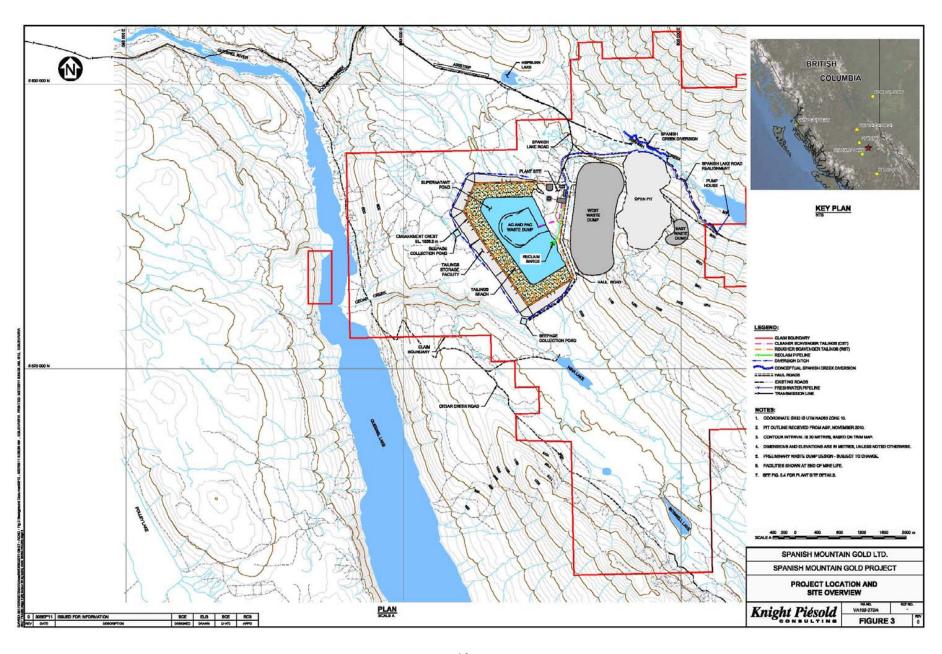
Component	Description	
Waste Rock	Waste rock from the open pit will be deposited in the East and West	
Management	waste rock dumps, tailings storage facility, and backfilled into the North	
_	Zone of the open pit throughout the life of the mine. All acid generating	
	material will be stored submerged in the tailings storage facility to prevent	
	acid generation, and suitable non-acid generating material will be used in	
	dam construction. Some of the potentially acid generating waste rock will	
	also be deposited in the tailings storage facility and progressively	
	inundated by the supernatant pond. The West and East waste dumps on	
	the periphery of the open pit will both contain potentially acid generating	
	and non-acid generating material in volumes that will allow acid	
	consuming rock to prevent acidic runoff. Following completion of Phase 2	
	mining, potentially acid generating and non-acid generating waste	
	material will be backfilled into the North Zone of the open pit. All waste	
	material produced from Year 7 onward will be backfilled to the pit.	
Tailings Storage	The principal objective of the tailings storage facility is to provide secure	
Facility	containment of all tailings solids and prevention of acidic seepage from	
	acid generating and potentially acid generating waste rock. The facility is	
	built to protect regional groundwater and surface waters during	
	operations and post closure. The tailings storage facility is proposed to	
	be sited in the catchments of Grogan Creek, Fisher Creek, Likely Gulch,	
	and two unnamed tributaries of Cedar Creek. Within the footprint of the	
	tailings storage facility, none of these water bodies are fish bearing, and	
	the tailings storage facility does not therefore encroach upon fish habitat.	
	Six alternative locations for the tailings storage facility were explored by	
	Spanish Mountain Gold Limited for the Project. From an economic	
	perspective, one of the options within the Cedar Creek watershed proved	
	to have the best economics and was recommended for inclusion in the	
	"NI 43-101Preliminary Economic Assessment". Following the Preliminary	
	Economic Assessment, Spanish Mountain Gold Limited decided against	
	this lowest-cost option and others because the footprint of these tailings	
	storage facilities would have directly affected fish and fish habitat. The	
	current option is proposed in order to develop the tailings storage facility	
	option Spanish Mountain Gold Limited believed had the least	
	environmental impact, and this is the proposed tailings storage facility	
	arrangement under consideration.	
Explosives	The explosives manufacturing facility is proposed to be located	
Manufacturing	approximately 500 metres from the plant site along the tailings access	
and Storage	• , , , , , , , , , , , , , , , , , , ,	
Areas		
	fenced area. The secured facilities will include an ammonium nitrate silo,	
	an emulsion silo, a blasting accessories magazine and a blasting	
	detonators magazine, which will be designed and operated in compliance	
	with applicable legislation and regulations.	

Component	Description		
Mine Access and Haul Roads	A new main site access road will be constructed between Spanish Lake Road and the plant site and will be maintained year-round by Spanish Mountain Gold Limited. New mine haul roads will be constructed from within the open pit to the main processing area. All berms will be constructed in accordance with British Columbia Mining Regulations. Secondary roads will be constructed to service the tailings storage facility and plant site. Spanish Lake Road will be realigned north of the open pit to maintain public and commercial access. Two bridges will be required for the road to cross over the proposed Spanish Creek diversion at the location of the northern extent of the pit.		
Power supply and distribution	The anticipated power demand for the mine site is approximately 60 megawatts, which will be delivered through a newly constructed 39 kilometres long, 69 kilovolt transmission line from the Gavin Lake substation to the plant site. The proposed new line from the Gavin Lake Substation (or a tap on the line near the substation) to the mine will follow the existing British Columbia Hydro distribution corridor that parallels Likely Road between the Gavin Lake Substation and Likely. From Likely the transmission line will follow the Keithley Creek Road and Spanish Lake Road to a substation near the plant site. If the interconnection is made as a tap on the line, rather than a tie in directly to the Gavin Lake Substation, then a small switching station would likely be required at the tap location.		
Stream Diversion	The mine site substation will be located adjacent to the plant site and will consist of two main transformers connected to the main 15 kilovolt switchgear. In order to provide back-up power to essential services, 2 megawatt diesel generators will be located in the process plant and office buildings. A short section of aerial 15 kilovolt power line will provide electrical power to mine site infrastructure. A thermal upgrade may be required on the British Columbia Hydro 69 kilovolt transmission line that parallels Beaver Lake Road to Big Lake, to allow for an increase in the maximum allowable operating wire temperatures.  An approximately 250 metres long section of Spanish Creek		
Stream Diversion	downstream of the outlet of Spanish Lake will be realigned to accommodate the north perimeter of the open pit.		
	Preliminary sizing of a channel to divert Spanish Creek around the open pit has been completed. The channel is sized with a similar width to the natural channel to facilitate habitat restoration efforts, but is designed with sufficient depth to pass the 1 in 1000 year peak design flood. It is assumed that the pit would not encroach on the existing Spanish Creek channel, and that the existing channel would remain in place as a contingency measure, with the diversion channel simply providing additional layback from the edge of the pit. Any flows therefore escaping the diversion channel due to overtopping would enter the abandoned natural channel and not the pit.		

Component	Description
Water management	A water management plan is being developed to control all surface water within the mine area. Goals of the plan include preservation of water quantity and quality downstream of the Project, optimization of water use, maximization of water re-use, minimizing mixing of clean and mine-contact water, managing seepage, utilizing water diversion, eliminating uncontrolled releases, and use of sediment and erosion control measures.
	Key aspects of water management include transferring open pit water and water from the waste rock dumps to the tailings storage facility and diverting all unaffected water around the site except as required to make up the water deficit. Seepage collection ponds and pumping systems will be included downstream of each of the tailings storage facility embankments to collect runoff and seepage, which will be pumped back to the tailings storage facility. Surface diversion ditches will capture and divert non-contact water around the tailings storage facility for release to the environment.
	Approximately 6,700 cubic metres per day of fresh water will be required for the process plant. Where available, tailings recycle water will be used, and will be reclaimed from the tailings storage facility supernatant pond using barge-mounted pumps and a dedicated reclaim water pipeline. Where makeup water is required, it will be pumped from Spanish Lake.
	A freshwater intake in Spanish Lake will be designed and constructed in accordance with Federal and Provincial guidelines. The submerged intake will be enclosed in a protective screen, while the pump house will be located a minimum of 30 metres away from the lake shoreline and outside of the riparian area. The fresh water pipeline will be designed to pass a maximum flow of 0.01 cubic metres per second. A single, 356 milimetre diameter, steel pipeline approximately 5 kilometres in length will connect the pump house at Spanish Lake to the freshwater holding tank in the process plant.
Doré shipment	The doré is expected to be transported from the process plant to a precious metals refiner located in Ontario. Doré shipments will be contracted to a firm that will supply armoured vehicles and secure transport. It is anticipated that once per week an armoured vehicle would collect the doré bars from the process plant gold room for delivery to the refiner. It will be at the discretion of the security firm whether to ship the gold by road, rail, or air. No new infrastructure for any of the methods of transportation will be required to support the operation.

Component	Description	
Mine closure and reclamation	All of the buildings and structures will be dismantled and/or demolished and then removed from the mine site. Where possible, salvageable material will be re-used, recycled, or transformed into other useful forms.	
	<ul> <li>Reclamation of the tailings storage facility will include:</li> <li>Removal and restoration of disturbed areas including structure footprints, access roads, conveyance structures, pipelines, etc.</li> <li>Stabilization, shaping, contouring, and re-vegetation of disturbed surfaces, and</li> <li>Monitoring activities to confirm the design assumptions adopted for closure.</li> </ul>	
	The waste rock dumps will be left in place and covered with salvaged topsoil and vegetation.	
	Once mining has ceased, it is anticipated that site drainage will be altered to allow the open pit to be filled with water. Water quality in the open pit will be modelled prior to filling to calculate water quality once the pit has filled to ensure that water released into the receiving environment meets water quality objectives.	
	Reclamation of the haul and access roads that will no longer be used will comprise removal of bridges, culverts, and other watercourse crossing structures, restoration of affected stream banks and riparian areas, and re-vegetation of affected areas.	

Figure 3: Proposed Project Location and Components



#### 5. PROPOSED FACTORS FOR THE ENVIRONMENTAL ASSESSMENT

Taking into consideration Spanish Mountain Gold Limited's project description, the Government of Canada is determining the factors and the scope of the factors to be included in environmental assessment. Spanish Mountain Gold Limited will be required to provide information on the proposed factors listed below, and any other factors identified by Federal Agencies involved in the environmental assessment. Written public comments received during this Public Participation Opportunity #1 and comments from potentially affected Aboriginal groups will be considered by the Government of Canada and used to inform the environmental assessment.

Proposed factors that will be examined in the environmental assessment:

Any change that the proposed project may cause to the following Valued Environmental			Any change that the proposed project may cause to the following <b>Other Factors and</b>	
Components		Relevant Matters		
	Environmental conditions including climate	•	Cumulative environmental effects that ar	
	Surface water quality and quantity		likely to result from the residual impacts	
•	Groundwater quality		from the Project (that remain after the	

- Hydrogeology
- Fish populations and fish habitat
- Vegetation
- Rare and sensitive ecological communities including wetlands
- Terrestrial invertebrates
- **Amphibians**
- Migratory birds, raptors, bats and their habitats
- Mammals and their habitat
- Soils, including terrain and geology
- Species at risk, its critical habitat or residences as defined in the Species at Risk Act
- Air quality (dustfall and particulate matter)

The effect of any change to the environment on:

- Human health (for example from changes to air quality, noise and vibration, water quality, light, country foods)
- Local and regional socio-economic conditions
- Physical and cultural heritage
- Archaeological, historical, paleontological or architectural resources including structures and sites of significance

- at are acts е implementation of mitigation measures) in combination with other projects or activities that have been or will be carried out
- Environmental effects from accidents and malfunctions
- Capacity of renewable resources that are likely to be significantly affected by the proposed project to meet the needs of the present and those of the future
- Current use of lands and resources for traditional purposes by Aboriginal persons
- Change to the proposed project that may be caused by the environment (i.e. natural hazards, seismic events, extreme weather events)
- The need for and purpose of the proposed project
- Alternative means of carrying out the proposed project
- The need for and the requirements of any follow-up program

### 6. HOW TO SUBMIT WRITTEN COMMENTS

The Government of Canada is accepting written comments from **October 21, 2011 to November 21, 2011**. Please note that all comments received are considered public and will become part of the public registry.

Comments can be sent to:

BY EMAIL: SpanishMountainGoldMineEA@ceaa-acee.gc.ca

**BY FACSIMILE**: 604-666-6990

BY MAIL: Spanish Mountain Gold Mine Project

Canadian Environmental Assessment Agency

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