

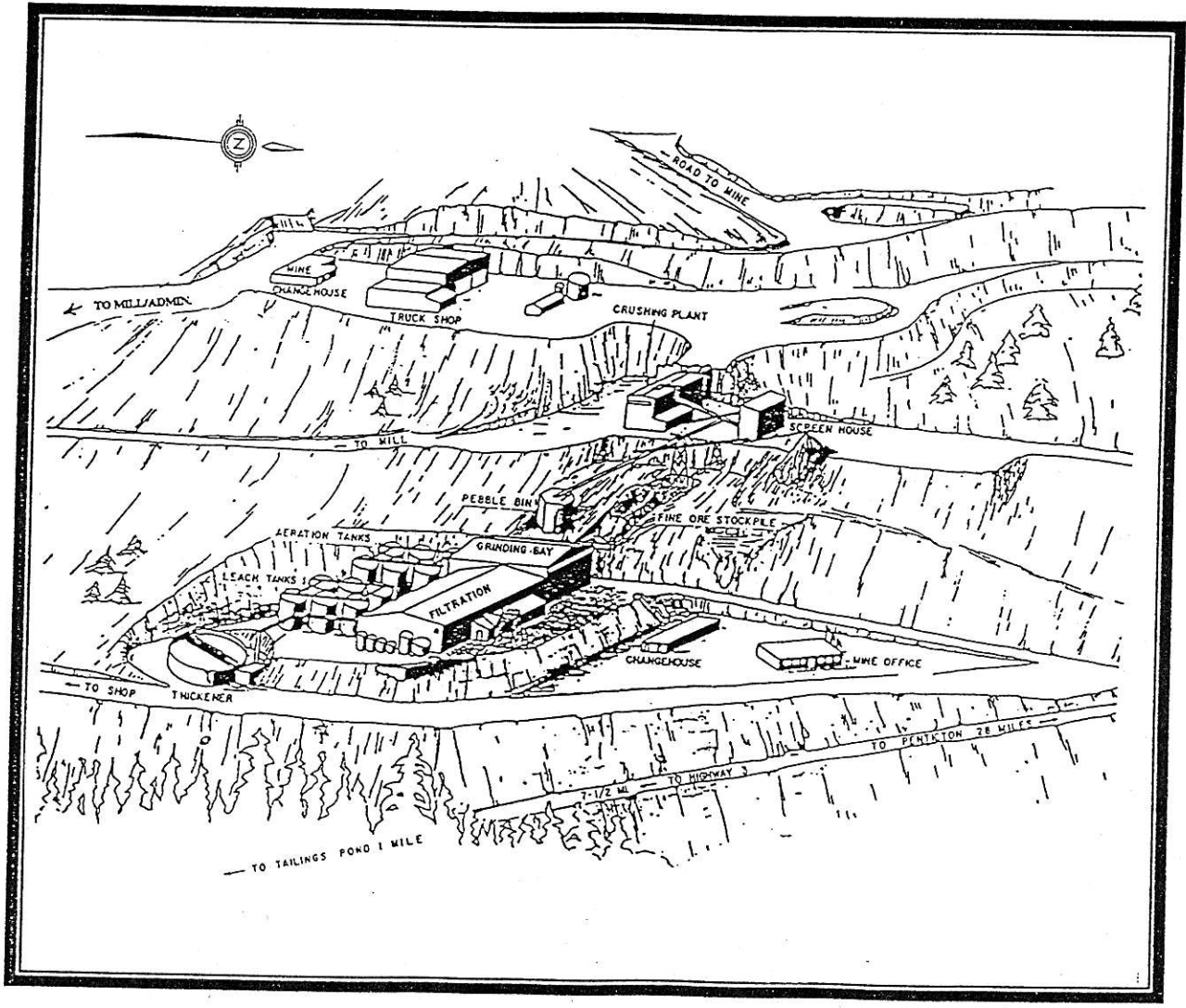
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R Meyers

NICKEL PLATE MINE

MAY 1996

Please Distribute



INFORMATIONAL OPEN HOUSE - NICKEL PLATE MINE JULY 19 & 20, 1996

PROGRAM OUTLINE:

You will arrive at the Nickel Plate Mine at approximately 1:00 p.m. A representative of the Mine will board the bus and provide a commentary on the various facilities and activities that have taken place at the mine as you are toured through the area by bus. Sites that will be included in this tour are:

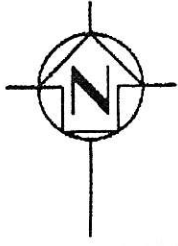
The Lookout Stage IV Pit
The Tailings Pond and South Waste Rock Dump
The Mill Conversion - Bug Palace (Water Treatment Plant)

At the conclusion of the bus tour, passengers will unload at the Administration Building for a 20-30 minute Question and Answer period on the mine's plans for closure and decommissioning of the site. Snacks and beverages will be served at this time. At 2:45 p.m. you will board the bus for return to Penticton.

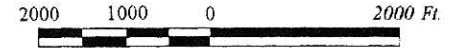
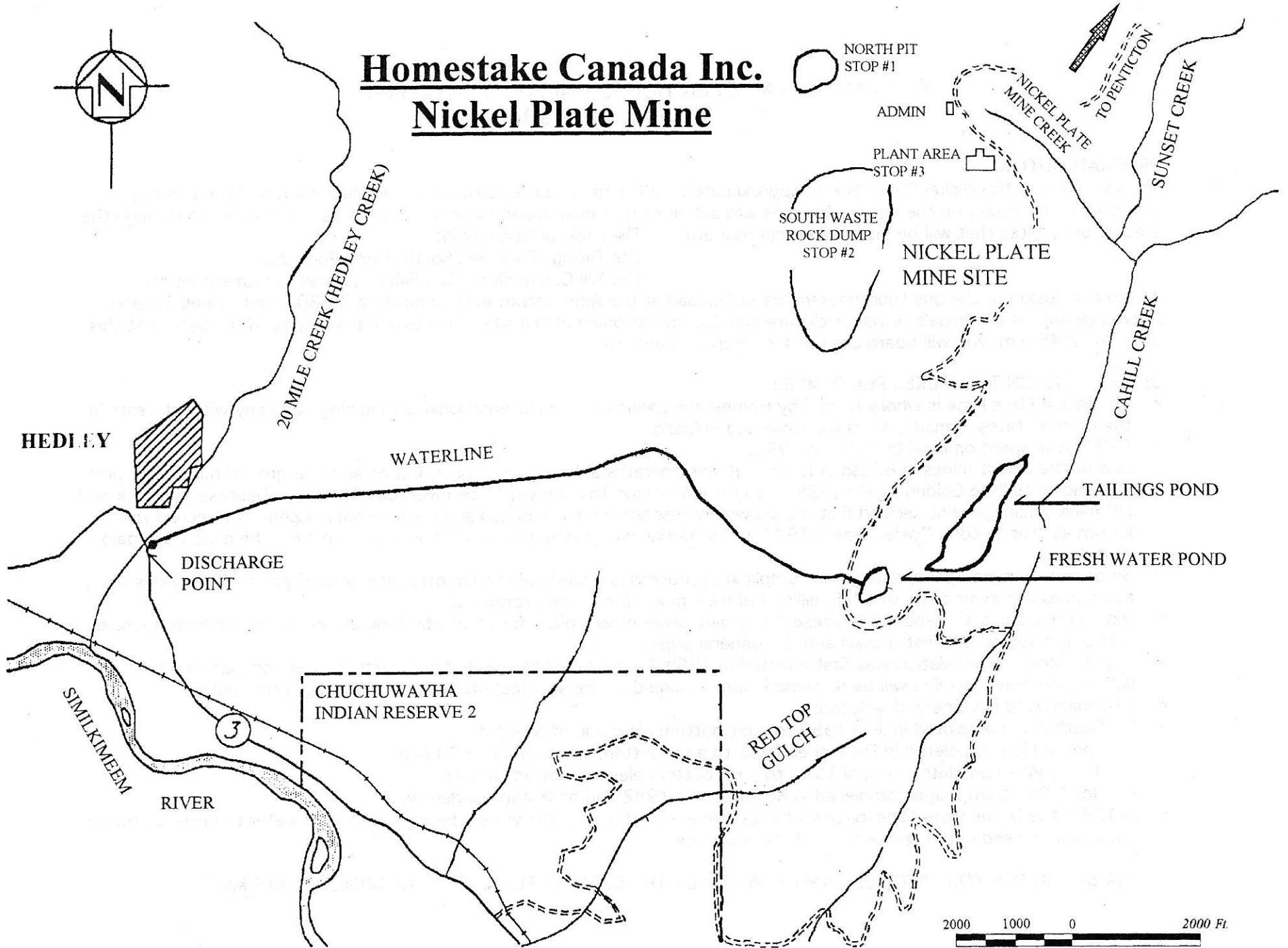
QUICK FACTS ON THE NICKEL PLATE MINE:

- The Nickel Plate Mine is wholly owned by Homestake Canada Inc., an international gold mining company with interests in the United States, Canada, Australia, Chile and Bulgaria.
- \$13 M was spent on local business in 1995.
- One of the oldest mines in British Columbia. It was operational twice in the past, but as an underground mine. The first was known as "the Golden Age" (1898-1931) when Income Tax had yet to be invented. The Great Depression struck and the mine's management decided that the known ore reserves were exhausted and the mine was closed. The second was known as "the Second Golden Age" (1934-1955) during which time World War II was declared and the mine was again shut down.
- Before a new mine opens, a long and complicated process is undertaken which may take several years. During this time, companies can incur costs of \$1-5 million before a new mine is even approved.
- Mining companies are required to present detailed development plans for review by federal, provincial and local agencies, native and special interest groups and the general public.
- Mine reclamation legislation was first enacted in 1969. A mine cannot proceed in BC without the company having first determined how the mine will be reclaimed, and reclaimed to the satisfaction of the provincial government.
- Four main pits have been developed:
 1. South Pit - completed in July 1990 to a pit bottom elevation of 5140 ft.
 2. Central Pit - completed in December 1990 to a pit bottom elevation of 5530 feet.
 3. Canty Pit - completed in April 1992 to a pit bottom elevation of 5420 feet.
 4. North Pit - third stage completed in November of 1992 and final stage underway.
- In 1995, the Nickel Plate Mine initiated the development of a very innovative, biologically based water treatment process which will be used in the reclamation of the mine site.

THANK YOU FOR YOUR INTEREST AND SUPPORT OF THE CLOSURE PLANS FOR THE NICKEL PLATE MINE



Homestake Canada Inc. Nickel Plate Mine



NICKEL PLATE MINE

- ▶ An open pit gold mine. Mining operations will cease permanently in July 1996 and milling operations in October 1996.
- ▶ Located on *Nickel Plate Mountain*, hence its name.
- ▶ One of the oldest mines in the province. It was operational twice in the past, but as an underground mine, and now here it is, almost 100 years later, still operating.
- ▶ Construction of today's Nickel Plate Mine began in 1986 with the first gold pour in 1987.
- ▶ It is wholly owned by Homestake Canada Inc., an international gold mining company with interests in the United States, Canada, Australia, Chile and Bulgaria.
- ▶ \$60 M was originally invested in the mine. Money was raised through a bank loan with the CIBC.
- ▶ The top of the pit is located at 6150'; When the mine closes (end of 1996), the pit bottom will be at 5200'. The pit bottom of the North Pit is presently at 5260'.
- ▶ The offices are at approximately 5000'.
- ▶ The property covers 7,400 acres.
- ▶ We presently have 126 employees from Penticton and surrounding communities. An idea of hourly salaries follows:

Labourers	\$15.33
Truck Driver/Mill Operator III	\$18.34
Journeymen (Mechanics/Millwrights/Electricians)	\$21.22
Foremen	\$26.00

In 1995:

- ▶ Annual Payroll was in excess of \$9.7 M.
- ▶ Spent \$13 M on local business.
- ▶ Combined provincial sales taxes, payroll taxes and property taxes were approximately \$5 M.
- ▶ Monthly power bill is in excess of \$200,000/month. (West Kootenay Power)

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► **WHY IS MINING IMPORTANT?**

- Growth of this province is linked historically to the discovery and development of mineral deposits. Mining exploration, often the lure of gold, brought people to settle in new regions (Cariboo, Barkerville, Williams Lake, Big Bend), resulting in further resource based development. Mining helped build our infrastructure, including:
 - Transportation system and communications network
 - Power lines
 - Hospitals
 - Schools
- Products derived from mining form a part of everything we use:

Lead	Car Batteries
Zinc	Galvanizing agent in automobiles (rust protection) Baby creams to prevent diaper rash Medicines
Indium & Germanium	Complex satellite and space travel equipment (recovered during refining of zinc)
Aluminum	Pots and Pans
Iron	Nails and steel
Copper	Electrical and communication purposes
Gold	Money (gold standard), Dentistry, Jewelry & Medicine
Silver	Jewelry, Silverware, Photography, Water treatment, Electronics and silver-treated efficient glass for homes, offices and automobiles.
Coal	Electrical energy (coal-fired generating plants)
Building Stone Gravel Cement	Construction industry

**FOR INSTANCE,
IMAGINE WHAT YOUR HOUSE WOULD LOOK LIKE
IF SOMEONE PASSED A HUGE MAGNET OVER IT AND PULLED OUT ALL OF THE NAILS.**

- Minerals that are mined and used in products are not lost - most are recycled.
- Mining directly sustains some 150 Canadian communities and their one million residents.
- Mining provides about 100,000 high-paying skilled mining jobs and 300,000 indirect jobs.
- The mining community is one of the most technologically advanced in the world.

LITTLE HISTORY OF THE NICKEL PLATE

Placer gold was first discovered in the vicinity of 10 Mile Creek in the 1860's by adventurers drifting north after the California Gold Rush.

1. FIRST GOLDEN AGE (1898-1931)

- . Discovered by Wollaston and Arundell, prospectors.
- . Road from Penticton to Nickel Plate Mine built.

Today, motorists and skiers make the 20 mile journey to Apex Mountain in approximately 1/2 hour. Freight wagons spent two and a half days to reach the "Green Mountain Stopping House" (now the Apex Mountain turnoff) and another half day to reach the mine. The trip down, loaded with ore, took two days.

- . Hedley population was 400.
- . Five course meal cost \$0.75.
- . Income Tax had yet to be invented.
- . Great Depression struck and mine's management decided that the known ore reserves were exhausted. Mine was closed.

2. SECOND GOLDEN AGE (1934-1955)

- . Mine put into production.
- . New townsite was laid out near the mine.
(Actually two towns at one time: Nickel Plate & Bogus Town)

Located at the 6000 foot level, Nickel Plate Mine and the townsite operated in a climate now usually reserved for ski resorts. Regardless of the snow, most families lived in tent houses constructed of a base of logs or lumber, with a tent roof. This housing arrangement was in keeping with a mining regulation at that time.

- . World War II declared.
- . Mine shut down. Remaining machinery was removed; portal and surface opening were fenced; and all buildings and surface equipment sold to the highest bidder.

DURING THIS PERIOD:

- ▶ 4 million tons of ore was removed
- ▶ @ \$35 per ounce it was valued at \$50.3 million
 - . Contained 1-1/2 million ounces of gold.
 - . Almost 190,000 ounces of silver
 - . More than 4 million pounds of copper
- ▶ Today, @ say \$380./oz, it would be valued at \$570 MILLION

OPENING A NEW MINE

- ▶ The decision to open a new mine has an almost immediate ripple effect on the economy.
 - Creates employment for consultants and contractors; for local suppliers of construction materials, mining equipment, utilities and transportation; and for other suppliers of goods and services.
- ▶ Before that happens, however, there's a long and complicated process involved, which may take several years, without any assurance that the mine will, in fact, open. Companies can incur costs of \$1-5 million before a new mine is even approved.
- ▶ The process to start up a new mine in BC is one the strictest, most comprehensive, and costly, in the world. Mining companies are required to present a detailed development plan for review by federal, provincial and local agencies, native and special interest groups and the general public.
- ▶ Five primary phases:
 1. Exploration
 2. Evaluation
 3. Development
 4. Operations and wind-up
 5. On-site restoration

There are strict government regulations for each of the phases.

- ▶ After all the conditions are met and the company receives approval for its project, they then must apply for the necessary permits to proceed with development.
- ▶ The company then proceeds to:
 1. Recruit and train a labour force.
 2. Build roadways and power lines.
 3. Construct mine buildings including offices, storage facilities, mills, crushers, conveyors, equipment sheds, service buildings, labs, etc.
 4. Establish waste areas, tailings ponds.

RULE OF THUMB:

LESS THAN ONE CLAIM IN 5,000 BECOMES A MINE.

ADMINISTRATION BUILDINGS

- ▶ Administration, employee relations, and engineering

MILL DRY

- ▶ Showers, lockers.

CONCENTRATOR BUILDING AND MILL AREA

- ▶ Pre-treatment tanks, thickener (settling tank).

ASSAY LAB

- ▶ Very critical aspect of our operation. Works 24 hours a day, seven days a week.
- ▶ Determine ore grades within rock types.
- ▶ Environmental work.

COLD STORAGE WAREHOUSE

LOWER HILL - MILL STORAGE (BONE YARD)

- ▶ Scrap metal is sold

TAILINGS DAM

- ▶ The tailings area is located 4,000 feet away from the plantsite and covers an area of 45 Hectares (111 acres). Gravity flow lines take effluent (tailings) into the tailings pond (end of the line).
- ▶ In the pond the coarser particles sink to the bottom leaving relatively clean water that is pumped back to the mill.
- ▶ Man made dam; discharge of any effluent to the environment is not permitted so what we have is what is called a "closed circuit". We reclaim 85% of our process water.
- ▶ Source of water: Spring run-off
Deep water wells
Water licence (seasonal) - Cahill Creek
- ▶ Environmental considerations require that the Nickel Plate Mine maintain tailings pond water below a maximum 25 ppm CN_{total} at an average 10 ppm CN_{total}. (Presently 5 ppm CN_{total}). Removal of cyanide from tailings slurry to permit levels is accomplished using the INCO SO₂/Air process.
- ▶ Tailings ponds are eventually reclaimed and may be used to grow forage for domestic cattle and wildlife.

SIMILKAMEEN RIVER

Homes in Nickel Plate Town had the benefit of electricity generated from a power dam, flume and turbine system on the Similkameen River. Very few people, however, had electric appliances and heating devices. Moderate comforts were enjoyed until the flume to the turbine froze solid during the course of a winter season, at which time the residents of Nickel Plate townsite were given 24 hours to evacuate. Spring thaw on the Similkameen soon resumed the flow of water through the flume, once more providing electricity to the mine which reopened for another season.

SHOPS/WAREHOUSE

THE PIT (Radio controlled so must get permission from Supervisor to enter)

- ▶ Open pit mining is carried out when the ore body is close to the surface.
- ▶ Overburden (soil) is removed and stockpiled for later use in reclaiming the land.
- ▶ Any waste rock on top of the orebody is drilled, blasted and transported to dumps which are later revegetated using the overburden as a growth medium.
- ▶ NO 'VISIBLE GOLD'. It is very, very fine and difficult to see even under a microscope. Lots of Pyrite (Fool's Gold). Copper and iron create problems in the retrieval of the gold.
- ▶ Basic geology is a SKARN DEPOSIT (Contact Metamorphic: Heat changed sedimentary rock to skarn.)

There are three types of rock:

1. Igneous - Granite/lava flows
2. Sedimentary - Small particles laid by wind/water pressed together.
3. Metamorphic - One of the above changed by heat or pressure.

- ▶ Ribbons in the pit indicate:

Red	.....	Ore
Green	.....	Low Grade
Blue	.....	Waste
Yellow	.....	No Dig
Stripped Blue/White	.....	Test material

- ▶ Four main pits have been developed to-date:
 - South Pit: Completed in July 1990 to a pit bottom elevation of 5140 feet
 - Central Pit Completed in December 1990 to 5530 feet
 - Cauty Pit Completed in April 1992 to 5420 feet.
 - North Pit Third Stage was completed in November 1992 and 4th pushback started

Smaller pits were located between the South and Central Pits:

- Sunnyside Pit Completed in April 1990
- Oxide Pit Completed mid-1992
- Underground Mining 1988 to 1989.
 - The entrances, access roads and dumps exist to the south of the open pits

- ▶ The plan proposes to develop the North Pit to a pit bottom of 5200 feet. (Presently at 5260 feet)

IXL ADIT/PRINCETON PORTAL (UNDERGROUND OPENINGS) AND TOWN OF HEDLEY

- ▶ Located south of South Pit
- ▶ Over 80 miles of tunnels throughout the mountain. We have mined down through less than half of these old tunnels.
- ▶ Some stopes so large our shovels could quite handily work in them.

Hedley boasted of seven hotels at one time and the single men who lived in the bunkhouses in the Nickel Plate townsite commuted to the bright lights and social life by riding a piece of board with cleats attached to form a guide as they slid down the tram rails to town. Gum boots against the rail acted as brakes. The trip home was an unauthorized ride up the skip (in some places 1,000 feet off the ground). The two mile trip on the tram line was much faster than the 47 miles by automobile over the Nickel Plate road.

RECLAMATION

Mine reclamation legislation was first enacted in 1969. A mine cannot proceed in BC without the company having first determined how the mine will be reclaimed, and reclaimed to the satisfaction of the provincial government.

- ▶ Reclamation is ongoing, not left to just when mine closes.
- ▶ Reclaim tailings pond
- ▶ Monitor water quality
- ▶ Reslope dumps
- ▶ Seed and plant waste dumps

We are also concerned with the "QUALITY OF THAT GREEN".

- ▶ Is the vegetation sustainable?
- ▶ Is the mix of grasses right?
- ▶ What balance of trees, partial cover and grassy slopes will make good habitat for animals?
- ▶ What are the various types of native vegetation on the particular types of broken rock?

These questions are dealt with by the site environmental team and consultants who provide their expertise and services to the mining industry.

Upon final closure of a mine:

- ▶ Dismantle and remove buildings and equipment.
- ▶ Reclaim remaining disturbed areas

Within a short time and with help from Mother Nature, the entire minesite will be in an acceptable state either for wildlife habitat, productive pasture, grazing land or some other designated use at least as valuable as the area was before mining began.

PRIMARY CRUSHER

- ▶ Allis Chalmers 42" X 65" gyratory crusher (500 HP)
- ▶ Original cost of \$5 Million
- ▶ Reduces mine ore to a passing 6" - 8" product size.
- ▶ Ore screened on 8" X 20' triple deck vibrating screen
 - * -5/8" passed to fine ore stockpile
 - * +5/8" conveyed to screened ore stockpile
 - * -4" +2" scalped for use in pebble mill (Require 150T/Day - used in grinding)
- As well, we crush our own road material

OF INTEREST: EVERY 3 - 4 MONTHS WE REPLACE:

MANTLE	\$17,000
CONCAVES	\$27,000

MILL

- ▶ Milling capacity - 4,000 SDT/Day (well above initial design tonnage of 2,700 SDT/Day)
- ▶ Feed grade - 0.080 oz per ton gold
- ▶ Yield - 85,000 fine ounces of gold per year

OF INTEREST: Mill must make \$100,000/day to pay operating bills and show any profit..
For every hour the mill is down, we loose \$4,200.

Grinding Circuit - Rod, Ball & Pebble Mills

Two stage crushing is followed by a rod, ball and pebble mill grinding circuit. This further reduces the particle size to that of a flourlike consistency. Lime is added to rod mill feed to maintain alkalinity in grinding and aeration circuits.

Aeration

Following grinding, the overflow is aerated at 30% solids for 18 hours. This is done in one (38' X 42') and four (38' X 40') tanks arranged in series. Air is sparged into tanks to enhance the formation of an oxidative film on iron sulphide surfaces.

Thickener

Aerated slurry is thickened to 60% solids in a 110' diameter thickener prior to leaching. Thickener overflow is recycled as make-up water to the grinding circuit.

Leach Tanks

Thickener underflow is pumped to a 36 hour primary leach circuit consisting of five 38' X 40' tanks arranged in series. The slurry is mechanically agitated at 55% solids; air is sparged into the bottom of the tanks. Cyanide is added in stages. The circuit is monitored every two hours for cyanide levels and solids gold content.

Drum Filters

The primary leach slurry is filtered by eight 13.5' X 17' primary drum filters using barren solution as wash and repulp water. Repulped primary filter cake is pumped to a secondary leach tank. Secondary leach slurry is filtered by seven secondary drum filters. Secondary filter cake is washed with barren solution and repulped with reclaim water prior to decyanidation in an SO₂/Air treatment circuit.

Hopper Clarifier

Filtrate from primary and secondary filters is combined in a hopper clarifier feed tank. The filtrate is then pumped through a sludge bed, producing a clean overflow of pregnant solution. Lead nitrate is added to the hopper clarifier feed tank to enhance precipitation of gold in the subsequent Merrill-Crowe circuit.

Vertical Pressure Clarifiers

Pregnant solution is further clarified in four automated vertical pressure clarifiers.

GOLD RECOVERY

Crowe Tower

- Clarified pregnant solution is deaerated in tower. Zinc dust is added and solution is pumped through three of six 36" X 36" X 30" chamber plate and frame filter presses.
- Zinc precipitate accumulated in plate and frame filter presses is dried and fluxed prior to refining.

Refinery

- Smelting is by two propane gas fired WABI furnaces.
- Dore bullion is poured into 1000 oz , 1200 oz or 1500 oz molds (slag recycled within the process).

*Bars weigh approximately 30 - 40 kg (66 - 88 lbs.)
Contains gold & silver. Average value: \$425,000. (CND)*

- Dore bars are shipped via armoured courier to Johnsen Matthey in Ontario

ENVIRONMENTAL MANAGEMENT AND TECHNOLOGY

Reclamation of a mine is now started well before completion of the mine and is more and more part of the day to day operation's activity. Reclamation technology has improved greatly in the last decade by adapting biological systems to aid in environmental management of a mine site. Reclamation of the land is the most visible part of a mine program but reclamation of the water used in mining is just as important. Eventually, this water must also be returned to its natural state. One way of doing this is to use nature itself.

Rock removed from a mining pit has residual nitrates on it from the blasting activity. Nitrate is a fertilizer that readily dissolves in water. Rain and snow can wash the nitrates into nearby streams. In excess amounts, nitrates can affect drinking water quality or natural aquatic populations of plants and animals.

Wetland

Definition of a Wetland: Land or areas (as tidal flats or swamps) containing much soil moisture.

Like giant sponges, wetlands store and slowly release spring runoff and rainfall, reducing flooding and soil erosion. Like kidneys, wetlands purify water by filtering wastes and toxins, including some pesticides and fertilizers.

At Nickel Plate Mine, a "pilot wetland" was constructed to see how it would control the levels of nitrates in nearby streams. It worked well but, because this wetland cell was continuously clogged with bacterial growth, it is no longer used.

OF INTEREST: An example of how effective plants are at capturing metals comes from early mining experiences in Europe. Some of the oldest mines were for the so called "bog iron". These iron mines were set up on very old peat bogs which over many years had accumulated and concentrated the iron, found in all water, to levels where it could be extracted and used for industrial purposes.

Wetland Reactors

Water comes from Nickel Plate Mine Creek, passes through a heating unit, and continues on into a head tank where reagents are added. It then passes on to a second large tank filled with plastic saddles which act as bacterial support media. From the second tank, the water is pumped to a series of pipe reactors filled with the same support media and then down to discharge into the creek.

Biological Water Treatment Process

In early 1995 Nickel Plate Mine initiated the development of a very innovative, biologically based water treatment process which will be used in the reclamation of the mine site.

The system is based on the principle of providing optimal growing conditions for microorganisms (bacteria) that consume the various chemical components in the tails pond water as food. In the process of growth, these bacteria selectively remove cyanide, ammonia, nitrate and heavy metals from tailings pond water, making it suitable for discharge to the environment.

The development of the physical, chemical and biological conditions needed to promote rapid growth of the desired bacteria, to make them useful on an industrial scale, is a very exacting job, one that did not exist in mining even two years ago.

The development and refinement of the biologically based water treatment system will allow the mine to discharge water of a very high environmental quality, minimizing the potential for environmental impact.

Much of the existing mill machinery and tankage will be converted into a water treatment plant. Conversion will be started in May 1996 and will be operable in October 1996, shortly after closure. Pipelines and pumphouses currently move pond water to the mill for use in the milling circuit. After closure this water will continue to be pumped to the mill where it will be treated.

Treated water will be released. The treated water will be moderately nutrient rich as compared to the nutrient deficient waters normal to head water streams. Existing downstream water quality guidelines for wildlife, domestic animals, aquatic life and potential use as drinking water will continue to be maintained.



MINISTRY OF ENERGY, MINES
AND PETROLEUM RESOURCES
KAMLOOPS B.C.

Rec'd JUL 15 1996

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To <i>Rick Meyers</i>	From <i>B. Dixon</i>	
Co. <i>MEI</i>	Co. <i>HCT</i>	
Dept. <i>Kamloops</i>	Phone #	
Fax #	Fax #	

NICKEL PLATE MINE
HOMESTAKE CANADA INC

FOR IMMEDIATE RELEASE

Penticton, B.C., July 8, 1996. Nickel Plate Mine is an open pit gold mining and milling operation approximately 50 km west of Penticton near the Townsite of Hedley, B.C. The mine, which is owned and operated by Homestake Canada Inc., Vancouver, has been in operation since 1987.

The Mine will be closing during Fall, 1996 because of a depletion of ore reserves and as a result intends to hold an informational open house to present various aspects of the mine closure plan to interested members of the public. This will be held at the mine site on July 19 and 20 and will provide an overview of the mine site and include an outline of the mine's plans for closure and decommissioning and associated environmental management programs.

Reclamation activities have been ongoing for several years, concurrent with active mining operations. As each area of the mine site was completed, it was recontoured to blend into the existing landscape, soil was spread and the area revegetated to achieve the reclamation objectives of grazing, wildlife and forestry use. At present approximately 70% of the total area has been reclaimed. The remainder of the site (30%) is associated with the tailings storage impoundment and related water treatment facilities. These areas will remain active for an estimated 6 years during the final site decommissioning, closure and environmental monitoring activities.

Coach transportation will be provided from Penticton, Hedley & Keremeos to the Nickel Plate Mine site during the July 19-20 open house. Those interested in attending should allow approximately five hours for travel to and from the mine, brief tour of the mine area and on-site review of the plans for final project closure.

The trip and facilities are suitable for those over 12 years of age. The nature of the trip and activities will require sturdy footwear.

For further information, see our newspaper advertisements or contact:

Brenda M. Dixon, Environmental Coordinator, 604-292-8224.

FILE # _____
PLEASE FILE _____
REFER TO _____
DEADLINE _____
ACTION CIRCULATED <i>AC 07/15</i>

Homestake Canada Inc.

NICKEL PLATE MINE P.O. Box 788 • Penticton, B.C. • V2A 6Y7 • Phone: (604) 292-8224 • Fax: (604) 292-8266