



To: Participants
Mine Development Review Process

Date: February 8, 1988

886017

New Afton

Re: **Afton Gold/Copper Project Expansion - Ajax Project - Letter of Intent**
(January, 1988)

921NE023

Afton Operating Corp., an affiliate of Teck Corp., has filed a letter of intent on its proposals for extending the life of the Afton Mine for 7 years by developing the Ajax property. The project is located 10 kilometres southeast of the present Afton minesite, and about six kilometres southwest of the built-up portion of the Kamloops municipality. The proponent envisages two open pits, developed on land which has still to be purchased from ranchers, and feeding the existing Afton mill at a rate of 11,000 tons per day. The workforce will be transferred from existing operations and resides largely in Kamloops.

The schedule is tight, with construction start-up envisaged for 88-07-01....possibly too tight if a Stage I submission is required. Given that the pits will service an existing mill/tailings complex, it is worthwhile to give serious consideration to the waiving of Stage I when your agency reviews the letter of intent.

You are asked to review the document by no later than 1988-03-25, and to respond to the following general questions:

1. Does your agency require the company to provide information in a Stage I submission? If so, please outline your concerns and the topics to be addressed.
2. If not:
 - (i) Does your agency wish to identify any matters which should be addressed at the permitting stage?
 - (ii) Alternatively, does your agency decline all further involvement in the review of this project? (In accordance with normal practice, failure to respond will be interpreted as indicating no further interest).

Raymond L Crook

Raymond L. Crook
Chairman
Mine Development Steering Committee
c/o Mineral Policy & Evaluation Branch
Mineral Resources Division

LOG NO: FEB 15 1988 VAN 4
ACTION:
<i>JBS</i>
FILE NO: AFTON

Attachments: - letter, Lovering to Crook, 88-02-01
- letter of intent

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AFTON OPERATING CORPORATION

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February 1st, 1988

Mr. R. Crook, Chairman
Mine Development Steering Committee
c/o Mineral Policy and Evaluation Branch
Ministry of Energy, Mines and Petroleum Resources
Room 430A - 617 Government Street
Victoria, B.C.
V8V 1X4

Dear Mr. Crook:

Re: Afton Mine Expansion
Letter of Intent - Ajax Project

The Afton mine-mill complex has been operating for eleven years. Mineable reserves are nearing exhaustion. Although the mineralization continues to depth, it is economically unattractive to proceed with an underground development program at this time. Hence, unless Afton finds an alternate ore source, it will be forced to suspend production in early 1989.

Afton has succeeded in establishing a potentially mineable reserve on the nearby Ajax property. Development of this deposit could extend production at Afton for at least another seven years.

The development concept is relatively simple: Afton would continue to use the existing concentrator, tailings pond and other facilities. Ore would be hauled from Ajax to the Afton plant. Low grade ore would be stockpiled on waste dumps which would be located close to the Ajax pits. The primary environmental issue centers on maintaining water quality in the stream which flows past the mine workings.

The attached brief provides a description of the Ajax project. It also identifies environmental concerns and presents the steps being taken to address these concerns.

R. Crook, Chairman
Mine Development Steering Committee
Re: Afton Expansion - Ajax Project

February 1st, 1988
Page 2

Please do not hesitate to call me if you require any clarification or if you require any additional information. May I take this opportunity to thank you in anticipation of your assistance in placing the Ajax property into production on a timely basis.

Yours truly,

AFTON OPERATING CORPORATION



J. Lovering,
Manager

JL/law

Attachment

cc. V. Dawson, Chief Inspector, MEMPR
J.D. Robertson, Environmental Co-ordinator, Teck
M.P. Lipkewich, General Manager Metal Operations, Teck

AFTON MINE EXPANSION

AJAX PROJECT

LETTER OF INTENT

AFTON OPERATING CORPORATION

JANUARY, 1988

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CORPORATE DATA

Project Name: Afton Mine Expansion
Ajax Project

Company Name and Address: Afton Operating Corporation
P.O. Box 937
Kamloops, B.C., V2C 5N4

Contact/Title: Mr. John Lovering (Mine Manager)
Mr. George Thornton (Chief Engineer)

PROJECT DETAILS

Project Location: Ten kilometers southeast of the
Afton minesite.

Estimated Capital Cost: \$11.0 million

Minerals: Chalcopyrite (copper and gold
values)

Mine System: Open pit

Estimated Production: 11,000 short tons per day/ 4,000,000
tons per year

Process Plant: Existing Afton plant

Proposed Mine Life: 7 years

MINERAL RESERVES

Reserves: 27,000,000 tons

Average Grade: 0.46% copper
0.01 ounces per ton gold

Cut-off Grade: 0.28% copper
0.006 ounces per ton gold

Potential for
Additional Reserves: Potential for six million tons
additional ore

ACCESS/TRANSPORTATION

There are no additional requirements for transportation facilities.

POWER SUPPLY

Requirements:

Will be supplied from Afton substation by overhead 25KV line

WORKFORCE INFORMATION

Total Operational Workforce:

Will maintain present workforce with probable slight increase to two hundred full-time employees

Housing:

City of Kamloops

Construction Workforce:

Minor requirements. Most work will be carried out by production employees

Construction Camp:

No

Workforce Rotation:

Shift work: twelve-hour shifts, two days, two nights and four days off. Steady days: eight hours, Monday through Friday

DEVELOPMENT SCHEDULE

Site Construction Startup:

July 01, 1988

Production Startup:

January 01, 1989

1.1 Preamble

The Afton mine, owned by Afton Mining Company, is operated by Afton Operating Corporation. The mine is located fourteen kilometers west of Kamloops on the Trans-Canada Highway. The facilities at the site include a concentrator, maintenance shops, warehouse, laboratory and administrative offices. Approximately one hundred and eighty people are employed at the mine.

Production commenced in 1977 at 7,000 short tons per day and has increased over the years to the present 8,500 ton level. The ore contains copper, primarily as native copper, chalcocite and chalcopyrite, together with gold and silver values. The ore is processed to produce a concentrate and the concentrate is trucked to Ashcroft and then transported by rail to North Vancouver for shipping to Japan.

Reserves in the Afton pits were depleted in July 1987. Production from the much smaller and adjacent Pothook deposit will assure operational continuity until May 1988. Processing ore from low grade stockpiles may extend the life of the operation until early 1989. Continuation beyond early 1989 will require developing the Ajax ore deposit.

The Ajax property is located ten kilometers east of the Afton plant - Figure 1 page 5. The property contains 27,000,000 tons of mineable reserve which averages 0.46 percent copper and 0.01 ounces of gold per ton. Development of this deposit could extend the Afton plant operation for at least another seven years.

The development concept is relatively simple; Afton would continue to use the existing concentrator, tailings pond and other plant facilities. Ore would be hauled from Ajax to the Afton plant. Low grade would be stockpiled on waste dumps which would be located close to the Ajax pits.

1.2 Location of the Ajax Property

The Ajax property is situated south of the city of Kamloops. It is located in the Kamloops Mining Division at Latitude 50° 35'N and longitude 120° 25'W. on NTS Map 92I/9. There are eight crown grants, fifty-two located claims with seventy-four units and the base metal rights on thirty-one parcels. The total surface area of the mineral claims amounts to some 1,600 hectares.

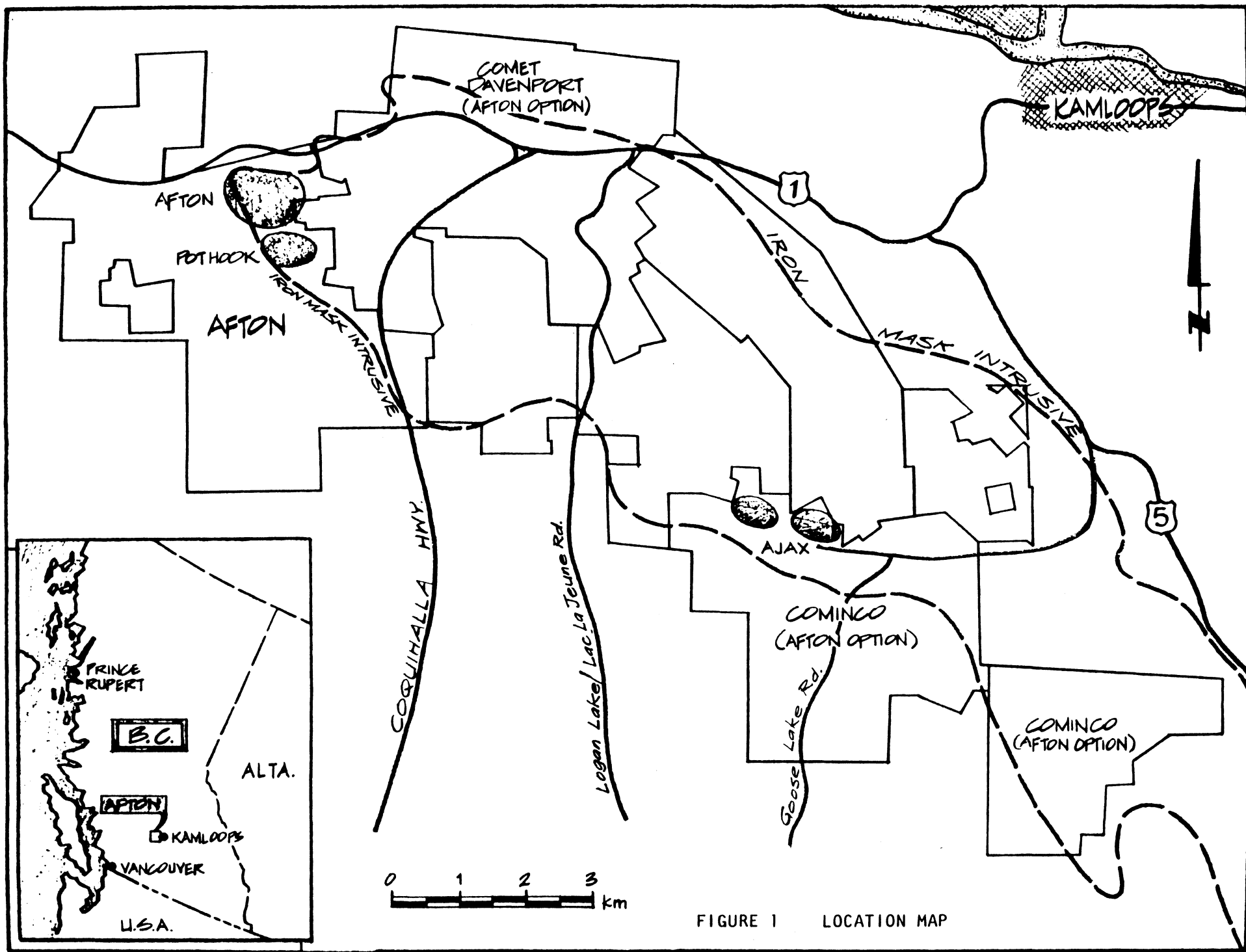


FIGURE 1 LOCATION MAP

1.3 Property History

Exploration activity in the area is first noted in government reports in 1896, when over two hundred claims were recorded. By 1900, underground work had been done on several properties in the area including the Wheal Tamar claim. Trenching was carried out on the Ajax claim between 1904 and 1910 and additional underground development and sampling was done in the nineteen-twenties.

In 1929, the Consolidated Mining and Smelting Company trenched and sampled the area and drilled ten holes from surface. Berens River Mines Limited (Newmont) optioned the property in 1952 and drilled on a narrow high grade shear zone on the Monte Carlo claim.

In 1954, Cominco again optioned the four original crown grants together with adjacent crown grants and staked additional ground. Exploration work proceeded on an intermittent basis until 1980.

In 1980, under a joint venture agreement with E & B Explorations Limited, a major exploration program was initiated and continued through 1981. With these expenditures, E & B Explorations Limited acquired a thirty percent interest in the property. Results of the program indicated a large low grade deposit with open pit potential.

In 1986, an agreement was reached between Cominco, E & B Explorations, and Afton Operating Corporation under which Afton acquired controlling interest in the Ajax property in respect of certain expenditures and ultimately placing the property into production. During 1987, Afton carried out an extensive drilling and evaluation program.

Total drilling on the Ajax property is summarized as follows:

Year	Operator	<u>Percussion</u>		<u>Diamond Drilling</u>	
		feet	meters	feet	meters
1928	Cominco			5,319	1,621
1952	Newmont			1,380	421
1955-57	Cominco			15,200	4,633
1961	Cominco			1,004	306
1967	Cominco			4,171	1,271
1972-73	Afton Mines	14,500	4,420		
1980	Cominco - E&B	52,700	16,063		
1981	Cominco - E&B			8,086	2,465
1987	Afton			37,595	11,459
	Totals	<u>67,200</u>	<u>20,483</u>	<u>72,755</u>	<u>22,176</u>

Much of the area is occupied by rolling grassland with timber only on the higher slopes. Relief is generally moderate with elevations between 800 and 1,100 meters above sea level. Extensive glacial action has created a topography of low rolling hills with local deep accumulations of glacial till on the southeast flanks of larger rock outcroppings.

The low annual precipitation level is reflected in the flora of the area. Bunchgrass, sagebrush, and cacti are abundant on the lower grassy slopes being joined by stands of ponderosa pine at higher elevations. Water is scarce. Spring run-off intermittently collects in numerous small saline ponds and sloughs. However, year-round fresh water is restricted to the Jacko Lake and Edith Lake drainage systems and these sources are heavily committed to irrigation use.

Ranching is currently the predominant land use. Most of the surface rights are privately owned with grazing leases granted on much of the outstanding crown land. The area is served by a network of roads including the all-weather gravel Goose Lake Road, which borders the property. An independent road from the Logan Lake Road provides access to Jacko Lake.

Recreational use of the area by the public is limited to fishing in Jacko Lake. The proposed mining operation is immediately adjacent to Jacko Lake but will not directly impact it. It is recognized that mine activity will result in an increased noise level. This should not, however, deter the public from continuing to fish in the lake. Uninhibited access to the lake will be maintained. This will require minor modifications to the existing access road.

3.1 Regional and Property Geology

The Ajax property straddles the southern contact of the Iron Mask Batholith, a northwest trending sub-volcanic intrusive complex. The pluton is roughly elliptical in outline, being some twenty kilometers long and up to four kilometers wide - Figure 1 page 5.

Previous geological work in the area includes examinations by Cockfield (1949), Carr (1956), Preto (1968), and Northcote (1977). Investigations and reports by numerous industry geologists have contributed to the understanding of the area. Northcote did an extensive investigation of Iron Mask rock types in the mid-seventies and collated the various rock units into categories generally in use to this day.

The Iron Mask Batholith is a multi-unit intrusive body composed of Iron Mask Hybrid, Pothook, Sugarloaf, and Cherry Creek units, each of which has several varieties. The rocks are fine-grained and porphyritic to coarse-grained and are silica poor, ranging from gabbro to syenite with diorite-monzodiorite-monzonite compositions predominating. Sporadic occurrences of Picrite Basalt are not considered part of the intrusive sequence.

Major systems of north westerly and north easterly trending fractures or faults controlled emplacement of the various units. The pluton was emplaced in a high level volcanic to sub-volcanic environment and is co-magmatic with Nicola Group volcanic rocks.

On the Ajax property itself, intrusive rocks are represented primarily by the Hybrid and Sugarloaf units - Figure 2 page 10. The Hybrid unit can best be described as a melange of intrusive rock varieties ranging from fine to coarse-grained melanocratic to mesocratic diorite, fine to coarse-grained hornblendite and pyroxenite, coarse-grained magnetite-rich gabbro and xenoliths of recrystallized Nicola. The Sugarloaf Diorite is a younger intrusive phase of the batholith and directly associated with the copper mineralization. It is typically a fine-grained to medium-grained porphyritic diorite whose characteristic feature is a sub-parallel alignment of hornblende and augite phenocrysts.

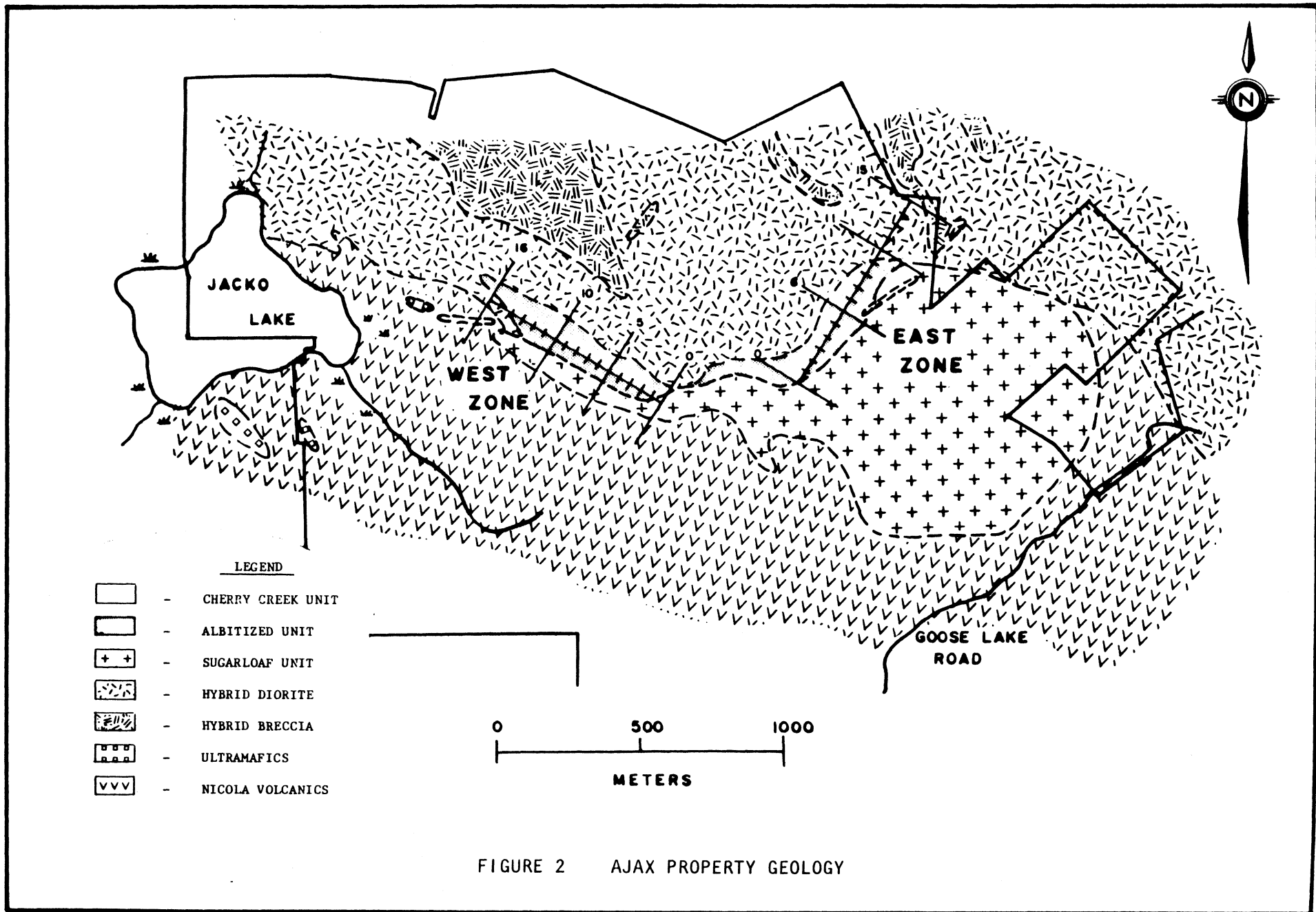


FIGURE 2 AJAX PROPERTY GEOLOGY

3.2 Mineralization

Chalcopyrite is the predominant copper mineral and the only one of economic significance. It occurs as blebs and disseminations, in fractures, veinlets, and microveinlets, and occasionally in breccias and vugs with accompanying calcite. Pyrite is ubiquitous. It occurs with chalcopyrite in similar proportions but also exists separately, notably peripheral to copper mineralization. Overall pyrite content in rock does not exceed one to two percent. Bornite and chalcocite are present in trace amounts only.

Malachite and azurite are noted in outcrop areas with spotty distribution at depth. Leaching and removal of copper have been minimal. Alteration tends to be spotty and incomplete with pyrite and chalcopyrite present as well.

Molybdenite occurrences are wide spread but values are generally quite low. Magnetite is present primarily as disseminations and large scale magnetite veining is absent.

Gold mineralization is closely associated with chalcopyrite mineralization. Except in rare cases, gold values do not occur on the Ajax property except in conjunction with copper mineralization. Gold-copper ratio do vary however, suggesting a means of distinguishing different pulses of gold-copper mineralization. Only one phase is present in the East Zone but in the West Zone several pulses are indicated by the spatial distribution of copper-gold ratios.

Ore reserves are divided into East-Zone and West Zone. A breakdown of drilling used in calculating reserves is as follows:

EAST ZONE

Year	Category	# of Holes	Total Length (feet)
1987	diamond	31	12,635
1981	diamond	7	3,670
1981	percussion	3	1,050
1980	percussion	119	33,980
1972	percussion	23	6,850
1955-67	diamond	9	4,400
Total		<u>192</u>	<u>62,585</u>

WEST ZONE

Year	Category	# of Holes	Total Length (feet)
1987	diamond	46	24,960
1981	diamond	7	4,410
1980	percussion	57	16,200
1955-67	diamond	24	11,360
Total		<u>134</u>	<u>56,930</u>

The results of the ore reserve calculations and pit optimization studies are summarized in Tables 4.1 and 4.2.

Table 4.1 - Ajax East Zone Mineable Reserves

Bench	Ore to Mill			Stockpiled Ore			Waste Tons (000's)	Overburden Tons (000's)	Strip Ratio
	Tons (000's)	Cu (%)	Au (opt)	Tons (000's)	Cu (%)	Au (opt)			
990	0	-	-	0	-	-	13	3	pre-strip
980	0	-	-	0	-	-	221	137	pre-strip
970	15	.34	.008	30	.25	.006	493	385	pre-strip
960	301	.36	.009	84	.24	.006	930	694	5.7
950	883	.38	.009	259	.26	.006	1,171	672	2.4
940	1,221	.44	.009	475	.26	.006	1,167	359	1.6
930	1,359	.48	.010	293	.26	.006	1,013	106	1.0
920	1,348	.44	.009	371	.27	.006	790	0	0.9
910	905	.45	.010	236	.27	.005	366	0	0.7
900	587	.44	.009	164	.27	.005	201	0	0.6
890	310	.45	.009	85	.28	.006	68	0	0.5
880	89	.49	.009	12	.29	.005	42	0	0.6
TOTAL/ AVG.	7,018	.44	.010	2,009	.26	.006	6,475	2,356	1.5

Table 4.2 - Ajax West Zone Total Mineable Reserves

Bench	Ore to Mill			Stockpiled Ore			Waste Tons (000's)	Overburden Tons (000's)	Strip Ratio
	Tons (000's)	Cu (%)	Au (opt)	Tons (000's)	Cu (%)	Au (opt)			
950	0	-	-	0	-	-	47	30	pre-strip
940	0	-	-	5	.25	.005	858	900	pre-strip
930	128	.61	.008	56	.30	.005	1,583	2,476	32.1
920	499	.50	.008	283	.26	.006	3,370	1,684	10.7
910	954	.49	.008	499	.25	.006	3,764	1,280	5.8
900	1,462	.43	.008	523	.26	.006	4,049	1,134	3.9
890	1,882	.43	.009	492	.27	.005	3,914	1,045	2.9
880	1,810	.44	.009	691	.27	.005	4,458	122	2.9
870	1,717	.44	.010	646	.27	.005	3,675	0	2.5
860	1,593	.50	.011	714	.28	.005	3,361	0	2.6
850	1,467	.52	.012	560	.28	.005	2,760	0	2.3
840	1,561	.50	.012	437	.26	.005	2,463	0	1.9
830	1,667	.47	.011	372	.26	.006	1,509	0	1.1
820	1,614	.46	.011	407	.27	.005	1,173	0	1.0
810	1,518	.46	.010	252	.27	.006	556	0	0.5
800	1,282	.48	.010	212	.28	.005	327	0	0.4
790	650	.48	.010	85	.28	.005	138	0	0.3
780	393	.51	.010	88	.26	.006	107	0	0.5
TOTAL/ AVG.	20,199	.47	.010	6,323	.27	.005	38,112	8,671	2.6

The pits will be developed using the equipment currently in use at Afton with replacement as dictated by the efficiency of the operation.

It is planned to mine the West Pit first, in two stages, followed by the East Pit. Waste from the West Pit will be located in such a way as to minimize the impact on Peterson Creek and waste from the East Pit will be placed in the worked out West Pit. Low grade ore will be stockpiled separately and overburden will be kept for use in the reclamation program.

Figure 3 page 16 is a site plan of the open pit operation. The locations of the stockpiles are tentative and the plan will only be finalized following further drilling, to establish the suitability of the proposed sites, and a review of environmental and water management consideration, which are discussed in more detail, in Section 9.



FIG. 3

APTON OPERATING CORP 1955-1956											
AJAX PROJECT											
PROPERTY MINING PLAN											
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6.1 Power

Power will be supplied by an overhead 25KV line from the Afton sub-station with a step-up transformer in the sub-station and a mobile step-down transformer at the Ajax site. The supply will be capable of supporting two shovels and two drills on a continuous basis plus the necessary ancillary installations.

6.2 Buildings

The majority of the workforce will still report for work at the Afton site but approximately seventy-five employees will report for work at the Ajax pit. Hence it will be necessary to construct a facility that will include a changehouse, washroom and lunchroom. Employees at the Ajax pit will work on four crews, working on a continuous schedule, and one crew working day shifts only. The number of employees on site at any time will therefore vary from about 15 to 30.

6.3 Water Supply and Sewage

It will be necessary to drill a well and install a pump and storage tank to provide potable water at the site. Water for dust suppression on haulage roads will be obtained either from the Afton plantsite or from the sedimentation pond at Ajax.

A ground disposal field for domestic sewage will be constructed in accordance with Ministry of Environment and Ministry of Health engineering criteria.

6.4 Fuel, Lubrication, Maintenance

Storage facilities for diesel fuel and lubricants will be installed adjacent to the pits. The area will be enclosed with the necessary berms to contain spillage. Haulage trucks will be serviced at the Afton plantsite with only minor emergency repairs being carried out at the Ajax site. Shovel and drill maintenance will be performed in the pit.

6.5 Oil Pipeline Re-location

Trans Mountain Pipeline Co. owns the oil pipeline which crosses the property. At least 2,000 meters of the line will have to be relocated to make room for the West Pit. Discussions are being initiated with the company.

6.6 Haulage Roads

The proposed route for the haulage road between Ajax and the Afton plant site is shown in Figure 4 page 23. The road will be ten kilometers long and twenty-five meters wide. It will cross the Coquihalla Highway through an existing underpass. It will also cross the Logan Lake Road near Inks Lake. This will require construction of an overpass.

Processing Ajax ore in the Afton concentrator will require only minor circuit changes. The installed power in the grinding circuit is sufficient to mill 11,000 short dry tons per day with a grind of 42% passing 200 mesh. Bulk flotation will be carried out in the existing rougher-scavenger cells.

After cyclone dewatering, the bulk concentrate will be reground to approximately 85% passing 325 mesh and upgraded, in three flotation stages, to produce a finished concentrate.

The tailings from the plant will be disposed of in the existing impoundment area. The original design of the Afton tailings system assumed that the recycle of process water was not feasible. However, operating experience quickly demonstrated that tailings settling was better than expected, thereby allowing a water recycle system (80 - 90%) to be implemented in 1978. The net effect of this strategy is lower elevation tailings dams and a potential increase in overall capacity in the originally designed pond. Consequently, the tailings from the Ajax ore body will be disposed of in the existing impoundment area and the dam construction program will be scheduled to accommodate the annual volume requirements.

Development of the Ajax deposit is predicated on the premise that the Afton concentrator must have an uninterrupted supply of ore so that employment continuity is maintained. A January 1989 production date must be achieved if this objective is to be met. In this regard, the 1987 drilling and evaluation program was accelerated and it is equally important then on going programs are also accelerated.

A further 25,000 feet of drilling remains to be completed by March 1, 1988. This program will include drilling to refine the pit designs, drilling to site the waste dumps and low grade stockpiles and drilling to provide hydrological information for developing a water management program.

The start date for construction of the haulage road, relocation of the pipeline and installation of the power line is July 1, 1988. The start date for the Logan Lake Road crossing is August 1, 1988.

9.1 Acid Mine Drainage Potential

The preliminary test work conducted on composite samples compiled from the fresh drill core obtained during 1987, has indicated the waste rock and the low grade ore to be acid consuming. The acid-base accounting method (EPA method) was used for these tests.

In order to verify these results additional testing is currently in progress on composite samples of waste rock, ore and tailings. This comprehensive program has been planned with the assistance of Rescan Environmental Services, a retained consultant. The program entails preparing approximately 250 composite samples from drill core from the majority of the 1987 drill holes. The waste composite will be assembled to represent the ten meter bench heights within the two pits. This procedure will highlight any problem areas which may have inadequate buffering capacity, and will allow subsequent planning to outline blending strategy. Low grade composites will be analyzed in a similar manner to determine if blending is required. Tailings samples for this program will be obtained from the metallurgical testing program.

Additional testing, including biological confirmation tests, may be required. A report summarizing the results of the entire testing program will be prepared.

The existing tailings pond has historically maintained an alkaline pH throughout the history of the Afton operation. This trend has developed despite the use of Kamloops Lake water which has a lower pH and with the absence of pH adjusting reagents in the mill circuits.

9.2 Water Rights

The water rights on the Jacko Lake and Peterson Creek areas downstream from the Ajax area are well documented with the Water Rights Branch in Kamloops. However, these water rights are complex due to the various ephemeral tributaries which drain the local area, the seasonal, and infrequent nature of the drainage, and the excess demand for this limited resource.

The principal water body is Jacko Lake. This lake serves as an irrigation reservoir and is also utilized by

local sports fisherman.

A small earthfilled dam which is approximately 2 meters high and 20 meters long was constructed in the early 1900's. A pipe is located in the dam and the water flow is controlled with a valve. Historic flow measurements have been recorded by the Water Rights Branch from this system with the use of a small concrete flow measuring weir structure, approximately one meter high, which is installed immediately downstream of the dam.

In order to ensure that the controlled discharge can continue to operate in isolation from the drainage from the mine operations a system will be developed for delivering water from Jacko Lake, through the mine area, to a downstream location on Peterson Creek. The details of this plan will be developed in conjunction with the proposed hydrology study. Various options will be proposed for review by both the Water Rights Branch and the downstream water users.

9.3 Water Quality

A. Control

Run off water, because of the dry climate, will occur primarily during spring snowmelt and major rain storms. A drainage system will be established around the mine workings to direct run-off water into existing natural drainage. These systems include Peterson Creek to the east and Jacko Lake to the west - Figure 4 page 23.

Water which drains from the mine and waste dumps will be diverted into a sedimentation pond. The ultimate strategy for handling this water is dependant on the design volume which will be assessed in a future engineering hydrology study. If the sedimentation pond contains an overflow provision, this provision would be subject to all Provincial and Federal water quality guidelines and objectives. Water discharged from the sedimentation pond, should this occur, would flow into Peterson Creek.

The tailings from milling the Ajax ore will be impounded in the Afton tailings pond. This is a totally contained system with no discharge. The closed system is possible because 80 to 90% of the process water is recycled.

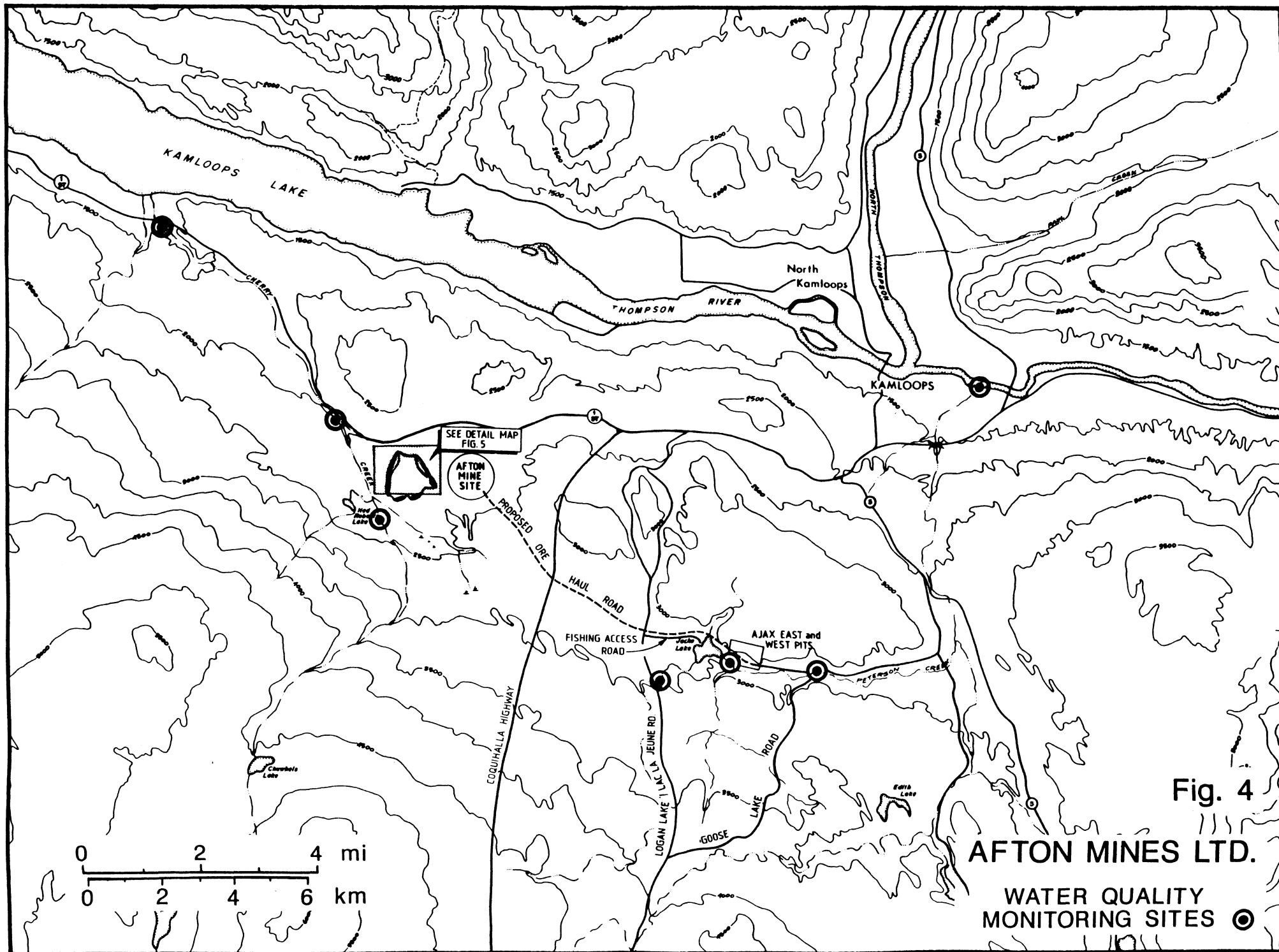


Fig. 4

AFTON MINES LTD.

WATER QUALITY MONITORING SITES

Effluent from the mine dry facilities will be treated in a conventional septic and drainage field installation. This system will be designed, constructed, and operated in accordance with criteria specified by the Ministry of Environment and Ministry of Health.

B. Monitoring

A monthly background water quality monitoring program has been operating for the past two years in the area adjacent to the Ajax ore body. The selected sites, as illustrated in Figure 4 page 23, extend from Jacko Lake through to downtown Kamloops.

A surface water and groundwater monitoring program associated with the Afton tailings system has been operating since 1976 and an extensive database has been developed. The sites are illustrated in Figure 4 page 23 and Figure 5 page 25.

A preproduction water quality report will be prepared and submitted to the Ministry of Environment to document the conditions prior to operation.

9.4 Hydrology

As described in the preceding sections the low annual precipitation and the historic drainage pattern of Jacko Lake indicate that the runoff from the proposed minesite area will be seasonal, and will occur primarily during major spring thaw or rain storms. In order to design the diversion ditches around the development area and to develop the water control strategy for the minesite area, a hydrology engineering study will be performed. The storm event criteria prescribed by the Ministry of Environment and Parks will be incorporated where applicable in designing the control structures.

The hydrology study will also be used to develop a strategy which will allow the water rights on Jacko Lake to interface with the mine water management plan. This involves the assurance of an absolute minimal impact on the downstream water users, while also controlling and containing site drainage from the minesite area.

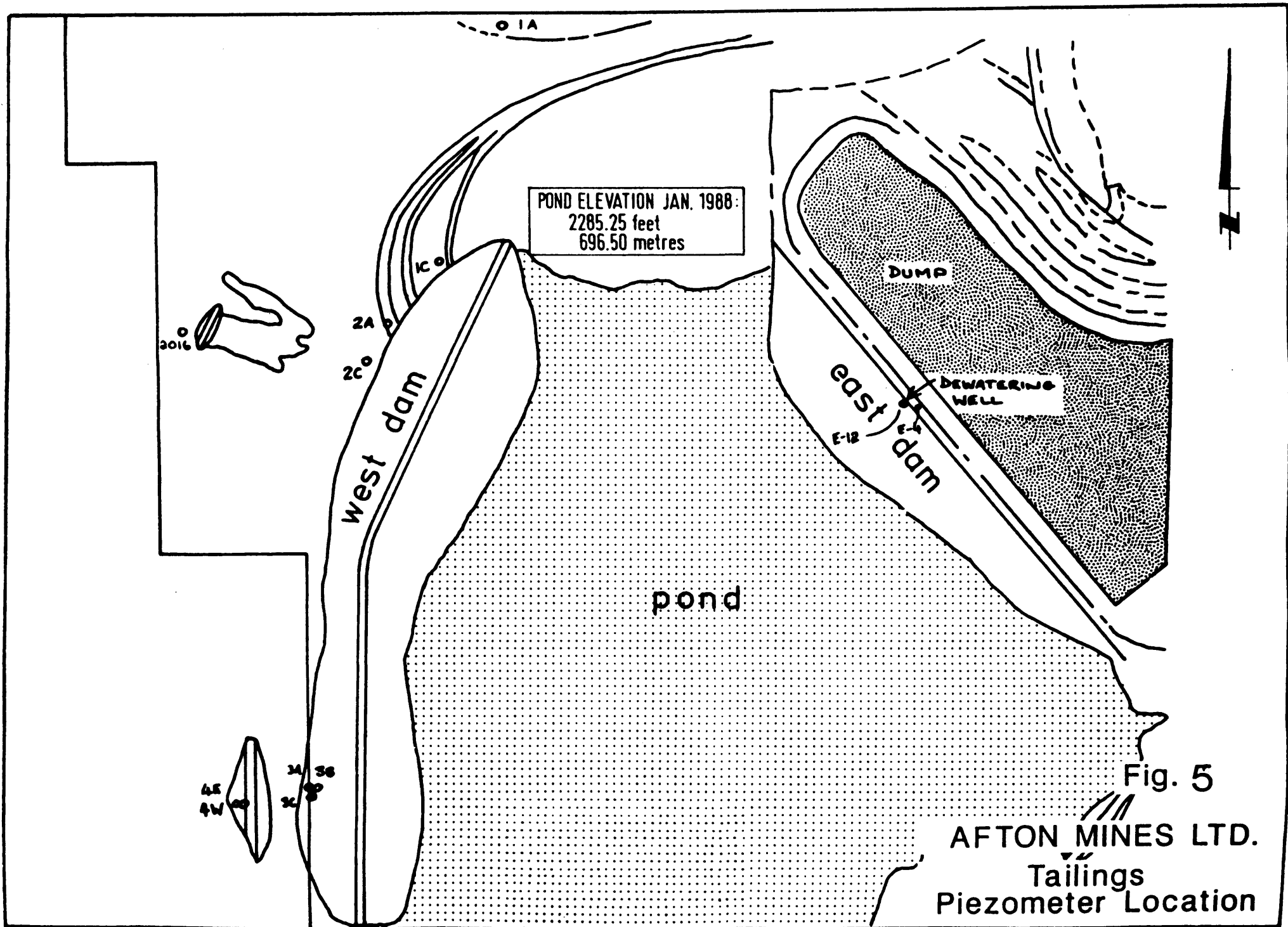


Fig. 5

AFTON MINES LTD.
 Tailings
 Piezometer Location

9.5 Hydrogeology

In order to assess the potential interaction between the open pits and Jacko Lake through groundwater movement, a hydrogeology study will be performed in the near future. The results of this study will be integrated with the surface water management plan to ensure that water rights are not interfered with and water quality is maintained.

9.6 Social and Economic Impact on the Work Force and the Community

The Afton mine has been an important employer in the Kamloops area since 1977. In an area of the province which has suffered from relatively high unemployment, approximately two hundred people make a living directly from Afton with many others benefitting indirectly (the multiplier is usually considered to be from 1.5 to 2).

Over the last two years, with the depletion of the ore bodies, exploration programmes have been carried out in the vicinity of the minesite and the Ajax deposits appear to offer the best chance of continued operation. The development of the Ajax project by Afton Operating Corporation will have a very beneficial impact on its employees and on the city of Kamloops. Security of employment, after experiencing several years of uncertainty, will permit employees to plan ahead and raise their families in the area.

The company payroll will continue at approximately 8.2 million dollars per year and other local expenditures for materials and services will remain at approximately \$4.5 million. Additional expenditures within the province of British Columbia will be 9 to 10 million dollars per year.

In summary, the continued operation of Afton will result in a very positive impact on the economy of the city of Kamloops, the Thompson Nicola Regional District and the Province.

The necessary licences and permits associated with the mine expansion include the following:

- Notification to the Waste Management Branch of change of ore source to the Afton tailings pond.
- Amendment of the existing Waste Management Permit for air.
- Waste Management Permit for waste dump drainage and mine dry effluent.
- Notice of work (Ministry of Energy, Mines and Petroleum Resources).
- Amendment of the existing Reclamation Permit (MEMPR).

A brief discussion of the areas requiring permits and the anticipated mechanism for addressing these needs is compiled as follows:

A. Tailings Disposal

The tailings from the existing operation is permitted under the Waste Management Branch Permit No. PE-3904. The tailings from the Ajax ore body can be accommodated in the existing tailings pond with no changes to the originally designed tailings dam. Thus the terms of the existing permit should remain essentially unchanged. The appropriate engineering documentation will be provided to the Waste Management Branch to demonstrate the suitability of the existing facilities.

B. Air Quality

The air emissions and air quality monitoring associated with the existing operations are permitted under the Waste Management Branch Permit No. PA-4393. The ambient air monitoring program outlined for this permit had been in operation for ten years. It is anticipated that although there will be no additional source emissions, additional ambient monitoring sites will be added adjacent to the Ajax operations. The technical details of these additional sites will be covered under an amendment to the existing permit.

C. Waste Water Management

The Ajax operations will yield two sources of waste water which will require a permit by the Waste Management Branch. These sources are the waste water from the mine dry facilities and the surface drainage from the waste dumps.

D. Reclamation Permit

The terms of the existing reclamation permit must be changed to include reclamation of the Ajax site. The historic practices employed by Afton have resulted in the recontouring of several waste dumps followed by topsoil addition and reseeding. The mine plan includes stockpiling the topsoil during the stripping operations to allow similar programs to be conducted on the Ajax site.