C. O. BRAWNER ENGINEERING LTD.
Consulting Geotechnical Engineers

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WEST VANCOUVER, B.C., CANADA V7V 3N6

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REPORT

TO

KERR ADDISON MINES LTD.

RE

SURFACE GEOTECHNICAL CONSIDERATIONS

ABO PROPERTY

October 1986

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October 14, 1986

Kerr Addison Mines Ltd.
1112 - West Pender Street
Vancouver, B.C.
V6E 3S4

Attn: Art Clendenan, Project Geologist

Dear Mr. Clendenan:

Re: Geotechnical Considerations -
Abo property test adit

Further to your request I inspected the proposed test adit site on your Abo property near Harrison Lake with you October 10, 1986. My comments on various geotechnical matters are as follows -

Test Adit Waste Disposal

Figure 1 shows the site location and Figure 2 the proposed adit location. I understand the adit, cross cut and raises are intended to provide a 600 ton bulk sample of ore for testing.

About 2,000 tons of waste rock will be produced during the mining. I was requested to advise on dump locations that would be stable.

Two sites near the adit are available.
(a) Directly in front of the adit. A small gully exists above a flatter lower area which would act as a toe.

The vegetation should be removed under the dump area and the organic topsoil should be removed from the lower toe area.

The adit muck will be hard, competent and free draining. Negligible clay size fines are expected. Any minor seepage will freely flow through the dump. Figure 3 is a photo looking down the slope.

Advantages of locating the dump at this location are-
- short haul distance
- enlargement of the work area in front of the adit
- adequate stability.

There are many local talus slopes on the mountain side below outcrops. I saw no evidence of instability. At this elevation the overburden will be glacial till or talus. No clays would be expected.

(b) About 300 feet north of the adit portal. A gently sloping area about 100 by 200 feet in area is located north of the adit portal. Waste can be placed and leveled to provide site for an office and dry. The waste can be placed in lifts. Each lift should be moved back from the lower lift to develop a slope flatter than the angle of repose. All vegetation should be removed from the dump site and the organic topsoil should be removed from the outer 30 feet under the toe area. Figure 4 shows the proposed adit site and the potential dump site in the distance.

Sedimentation pond

A small sedimentation pond will be required to clarify tunnel seepage. It is recommended that the pond basin be shaped, covered with 15 cm of sandy gravel and an impervious 10 mil thick plastic liner be placed. All overlaps should be at least 0.5 meters and glued. The plastic should be covered with 15 cm of sandy gravel to protect it from the sun.

Adit Seepage

The adit will extend under Jenner Creek about 60 meters in from the portal, Figure 5. This creek gully may be the surface indicator of a fault zone. If a fault does exist extra support and heavy seepage could occur. When the adit is being developed it is recommended that a percussion exploration drill hole be drilled ahead of the adit when it is about 10 meters from the vertical projection of the creek bed.

Road surfacing

The road surfacing has been obtained by using local overburden. In many areas this comprises local talus or weathered bedrock. This provides a very coarse road surface which is hard on tires and provides poor traction on steep grades. The problem is the coarse size and lack of fines.

The local till where available does not provide sufficient angular particles to provide high friction.

It is considered the best surfacing material will be rock crushed with a portable crusher to a maximum size of about 15 cm. The tunnel muck or local talus would be a good source for crushing.

Surface Erosion Control

Kerr Addison has seeded many of the exploration roads and slopes. Generally a good catch has developed. The program is recommended to be continued.

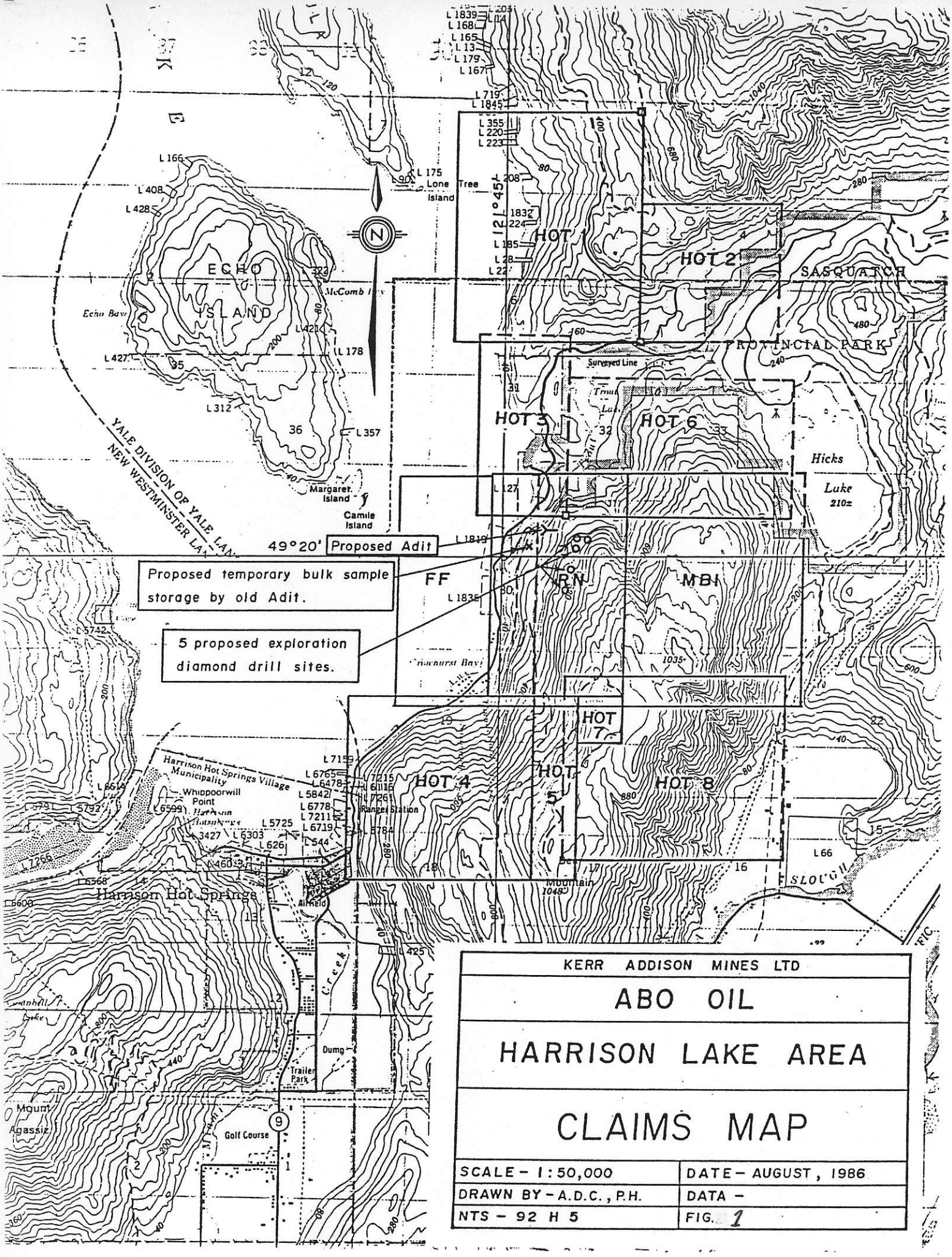
Logging and exploration roads can disrupt the natural drainage. To minimize this it is recommended that no inside ditches be developed and the roads be developed with a 1-2% cross gradient to uniformly shed rainfall and surface water across the grade. Do not carry water for long distances along any road.

If you have any questions please contact me.

Yours truly,

C.O. Brawner, P. Eng.

COB/pm



KERR ADDISON MINES LTD

ABO OIL

HARRISON LAKE AREA

CLAIMS MAP

SCALE – 1:50,000	DATE – AUGUST, 1986
DRAWN BY – A.D.C., P.H.	DATA –
NTS – 92 H 5	FIG. 1

11100 E

11200 E

11300 E

9600 N

9500 N

150 m

200 m

250 m

300 m

350 m

N

Proposed adit dump and protore storage.(2)

dry & office.

Proposed "adit water" settling pond connected by a culvert.

Proposed sample load out hopper.

Ventilation fan.

Safety cut outs

Proposed Adit Dump Site (1)

Proposed cross cuts and raises.

Proposed adit. (Section 9485 N, Elev. 187m)

FRASERVIEW DEV. LTD. LOT CORNER.

Proposed air compressor site.

RI

Proposed secured explosives magazine.

FIG. 52

0 5 10 20 30 40 60 80

METERS

KERR ADDISON MINES LTD

ABO PROPERTY

RN CLAIMS AREA

PROPOSED TEST ADIT

SCALE - 1 : 1000	DATE - AUGUST, 1, 1986
DRAWN BY - P.H., A.D.C.	DATA - T.B.
NTS - 92 H 5	REVISED - AUGUST, 25, 198

Figure 3 - Potential waste dump area below the adit. All vegetation should be removed with organic material removed from the lower slope in the toe area.

Figure 4 - Proposed adit portal site at the right side of the photo. One potential waste dump site is at the end of the road in the distance.

Figure 5 - Small creek channel located above the adit alignment. This channel may reflect a fault. Exploratory drilling ahead of the adit face near the creek is recommended.

Figure 6 - Vegetation which has caught well on many of the exploration roads.