

# MINNOVA

092H/05  
Seneca

820839

MEMORANDUM

DATE: January 30, 1990  
A TO: A.J. Davidson  
COPIES A COPIES TO: I. Pirie  
DE FROM: C. Burge  
SUJET SUBJECT: **Seneca Property Exam Int. Curator/Chevron 50/50 92H/5**

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## Introduction:

Although the Seneca prospect has long been recognized as a Kuroko type volcanogenic massive sulphide deposit of by numerous workers ( Urabe ,Scott and Hattori in the Kuroko volume, Gannicott and Armbrust; CIM Bulletin June, 1979) it seems that no integrated systematic exploration has ever been mounted on the property as a whole. In fact the ground has suffered a number of ill conceived and apparently random drill programs by a number of outfits (Cominco, Chevron, BP and Noranda). The property's location, familiar geological setting, existing core and storage facility, road access and especially potential all suit Minnova criteria for a top priority project.

## Location:

The property lies an hour and half drive east of the city of Vancouver just west of Harrison Lake, B.C. A network of logging and drill roads criss cross the lower elevations and terrain is steep but numerous benches and bluffs occur. The eastern part of the property has recently been logged.

## Geology:

The Seneca deposit is hosted by an assemblage of intermediate to felsic pyroclastic and massive flows and is locally associated with a sedimentary package consisting of medium grain wacke or sandstone and a sulphide mud. These units have not developed a penetrative cleavage and form an upright, shallow southeast dipping panel that has apparently been subject to later, brittle faulting. The units are remarkably similar to the Britannia stratigraphy where over 50Mt of copper ore was produced over the years. In fact, key marker units such as the GMS (ash flow tuff) are found in close proximity to ore as is the case in Britannia.

The importance of developing thick sedimentary basins for ore concentration is well recognized in Britannia whereas previous workers at Seneca have targeted areas where pyroclastic rocks are coarsest ("vent zones").

The following stratigraphy is based on yesterdays brief examination of core on the property:

DDH 83-10, 75 metres north of the discovery showing:

Intermediate lithic crystal tuff  
-contains numerous vitric fragments  
-occasionally partially welded  
-fragment composition variable  
-sulphide (py) frags noted  
-feldspar crystals in matrix

Mafic flow  
-amygdaloidal  
-massive

Ore Zone  
-fine to medium grain sphalerite/pyrite  
barite and lesser chalcopyrite.  
-ore appears to replace individual  
fragments

Mafic flow breccia  
- amygdule rich as above  
- matrix of carbonate and fine grain  
material (mud?)  
- sulphide fragments (cp/py)

Sulphide Mud  
- laminated sulphide rich mudstone  
- 10-30% ultra fine grain pyrite

Intermediate Lithic Tuff  
- similar to unit 1 not as fsp porphyritic  
- matrix silicification

This sequence was approximately 30 meters thick at this locale.

A quick examination of DDH 83-16 (120 meters north of surface showing) revealed similar stratigraphy however a clast rich wacke with occasional cherty frags and 1-5% pyrite occurred in place of the ore zone. Previous workers had mislogged the footwall unit in this case indicating that the current set of sections belonging to Curator need verification.

### Mineralization:

DDH 85-3 located 240 meters north of the surface showing and furthest north of the current drilling encountered similar stratigraphy except that a coarsely feldspar porphyritic felsic flow forms the footwall unit and laminated argillites and crystal tuffs occur in the hanging wall (Many holes were shut down in the sediment unit). The ore stratigraphy in this hole provided intercept of massive sulphides which included a .64 meter interval grading 10.1% Zn, .64% Cu, 7.2opt Ag and 0.17opt Au. The intersection occurred within a 12 meter heavy pyrite zone. This intersection remains wide open to the north.

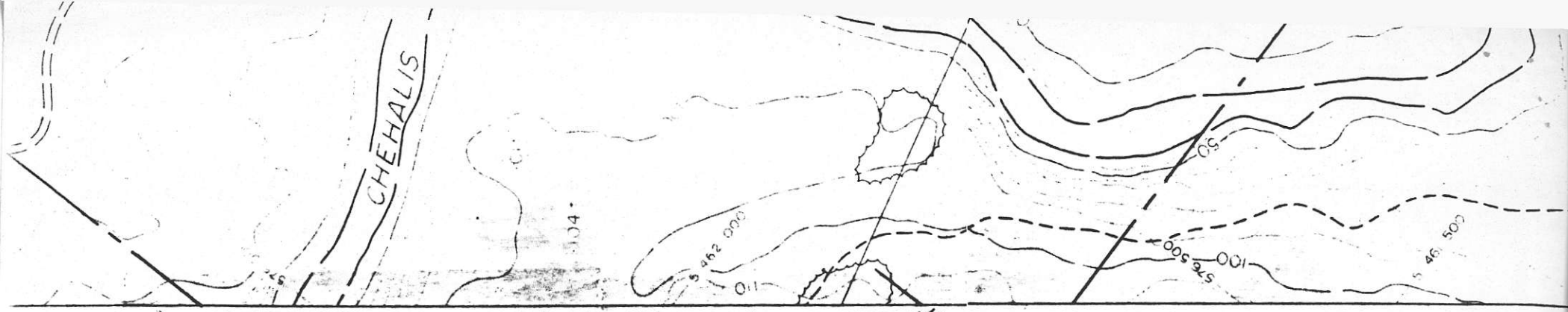
### Conclusions:

Enormous potential exists on this property. Although over 10,000 meters have been drilled at Seneca it is evident that much of the work was inadequate. Many of the holes were drilled 20 meters or less apart (!) and a number holes were shut down too early. The bulk of this drilling has been done in three small areas on the property by three different companies. Alteration appears weak where observed and no litho geochemistry has been done. Geophysics has been used sparingly.

### Recommendations:

If a satisfactory agreement can be negotiated with Curator:

1. Quick log all available drillholes and enter in PRGLOG in order to generate a decent set of sections.
2. Litho sample all drillcore.
3. Compile all available surveys at 1:5000
4. Send Litho samples already collected by BP to the Lab.
5. Map creeks and roads to compile a 1:5000 regional geology map.
6. Attempt to locate the Seneca horizon where it would emerge from the hillside east and south of the pit.
7. Drill Seneca horizon at 200 meter spacings where cost efficient.



**MINERAL RESERVES BY AREAS**  
(Wright Engineers Limited, 1984)

	Tonnes	Tons	Au oz/ton	Ag oz/ton	Cu %/ton	Pb %/ton	Zn %/ton
<b>Area A</b> Blocks 1-14	507,100	557,800	0.037	1.23	0.76	0.10	3.85
<b>Area B</b> Blocks 15-29	551,000	606,100	0.018	1.16	0.62	0.12	2.80
<b>Area C</b> Blocks 30-36 & 39	439,700	483,700	0.016	1.23	0.51	0.26	4.28
<b>Area D</b> Blocks 37 & 38	11,800	13,000	0.012	0.95	0.25	0.11	1.46

R. Pegg

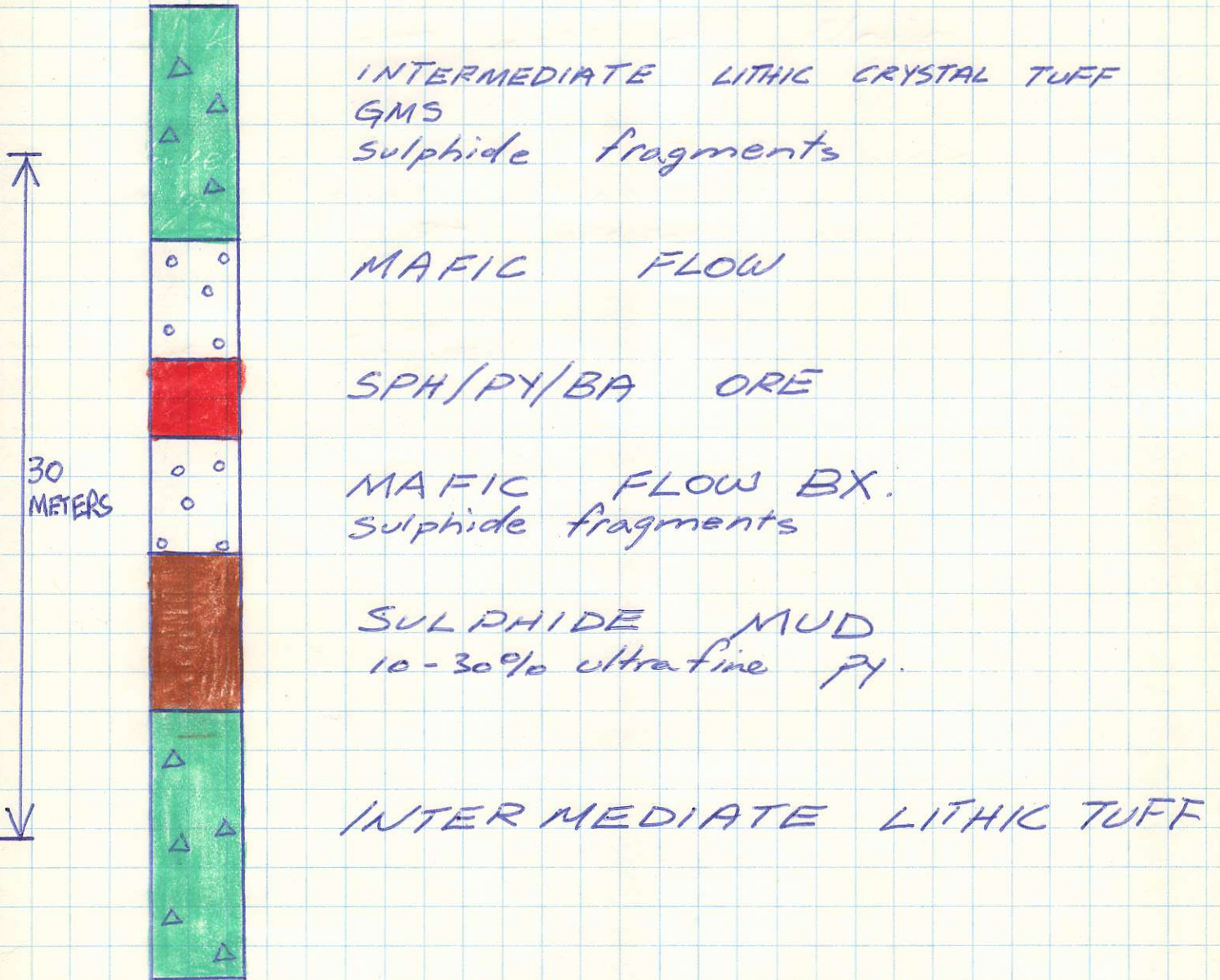
1,509,600	1,660,500	0.024	1.20	0.63	0.15	3.57
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9.6# 5# 12.6# 1.05# 37.84#

IRAN  
D & D  
NITEL  
IRAN

SENECA

STRATIGRAPHY



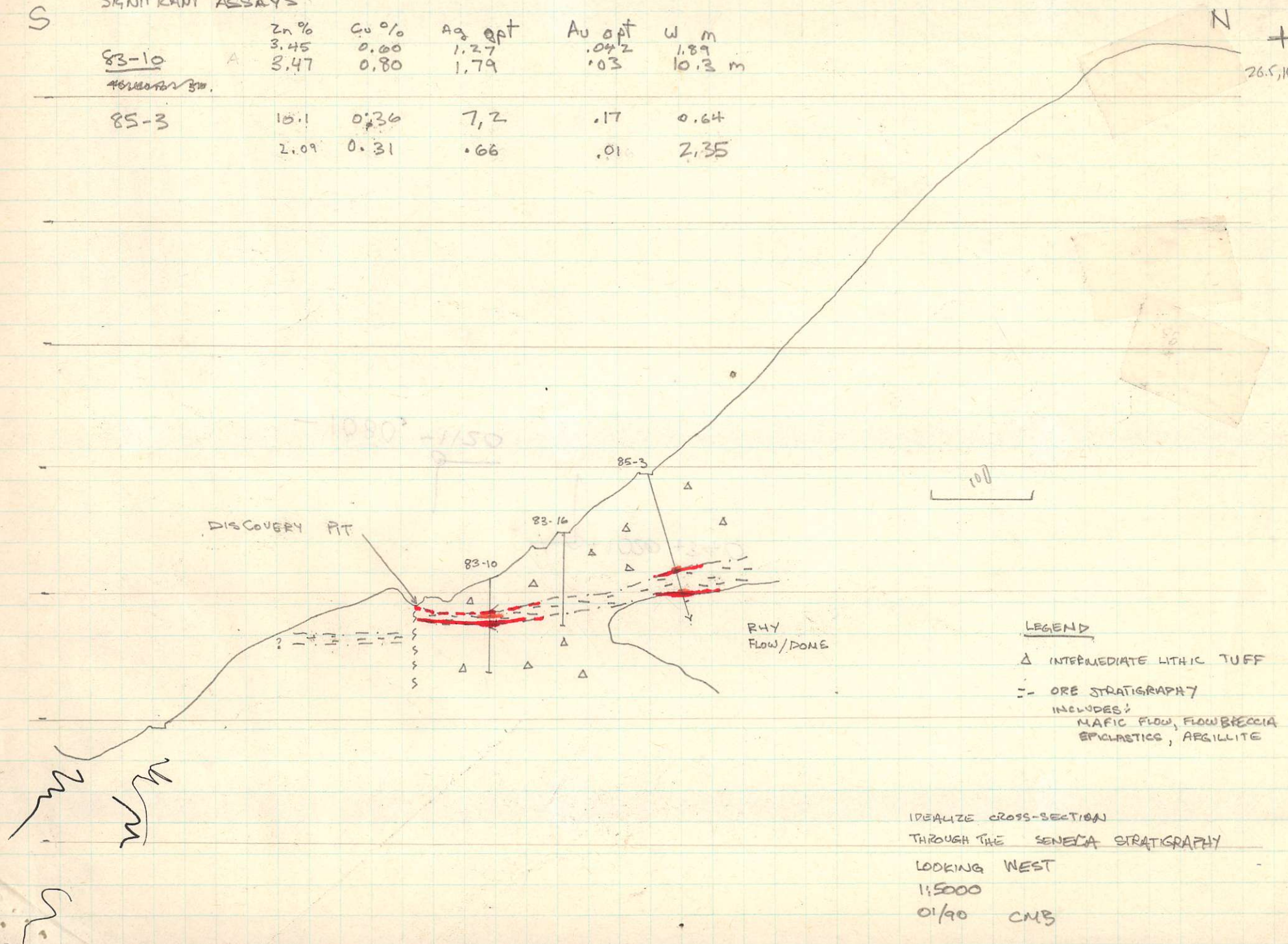
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SIGNIFICANT ASSAYS

	Zn %	Cu %	Ag opt	Au opt	W m
83-10	3.45	0.60	1.27	.042	1.89
85-3	10.1	0.36	7.2	.17	0.64
	2.09	0.31	.66	.01	2.35

N

26.5, 18.5



LEGEND

- △ INTERMEDIATE LITHIC TUFF
- ORE STRATIGRAPHY  
INCLUDES:  
MAFIC FLOW, FLOW BRECCIA  
EPICLASTICS, ARGILLITE

IDEALIZE CROSS-SECTION  
THROUGH THE SENECA STRATIGRAPHY  
LOOKING WEST  
1:5000  
01/90 CMB