MINNOVA

MEMORANDUM

822677

DATE: March 10, 1992

A TO: G. S. Wells

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DE FROM: C. Burge

SUJET SUBJECT: 1992 Diamond Drill Proposal - Seneca Option

Introduction

A 5000 meter drill program is proposed to fully evaluate the Fleetwood zone and continue testing the Seneca deposit and Vent areas. The target is a precious metal rich massive sulphide deposit similar to those in the Kuroko district of Japan.

This program is the first phase of 7000 meters that will be drilled on the property this year. A further 2,000 meters is planned for the fall and will be contingent on results of the spring program.

Fleetwood Zone Targets

The Fleetwood zone was discovered last year after following up previous operators' massive sulphide intercepts. The zone consists of four narrow massive sulphide intersections approximately 150 meters below the surface. Each interval is underlain by spectacular stockwork and stringer mineralization up to 30 meters thick. Table 1 summarizes the mineralized zones and Figure 1 shows the zones at the 150 meter level. The Fleetwood measures 750 m by 200 m and remains open to the northwest and southeast. Four holes drilled within the zone encountered dikes at the Fleetwood contact.

The Fleetwood stratigraphy consists of a mafic flow breccia overlain by a quartz phyric dacite dome. The dome is in turn overlain by a sequence of felsic ashes and it is at the base of these ashes, in contact with the dome, that the massive sulphides occur. A thick sequence of andesite bearing mineralized

felsic bombs and lapillistone covers the Fleetwood area. Felsic dikes frequently cut or dilate the stratigraphy and continue to be a major obstacle. The package is flat lying and exposure in the area is sparse. The flat lying stratigraphy combined with a till cover of up to 60 meters has hindered surface exploration techniques.

Seven holes are proposed to continue to test the Fleetwood zone northwest and southeast. P1 and P2 will test a Mag anomaly located east of the Fleetwood near the Vent. P3 and P4 will test the west strike of the Fleetwood - Seneca trend. P5, P6 and P7 are proposed to test the southeast strike of the Fleetwood zone. Figure 2 shows the thickness of ash beds which overly the zone. The isopachs indicate the basin thickens considerable toward the southeast and suggest a second basin may be developing northwest.

A further seven holes will test new targets in the Fleetwood - Vent area. P8 and P13 will test north of S-91-20 where over 100 meters of zinc mineralization was encountered in the Fleetwood dome. In this area the dome is overlain by felsic ash and a mafic flow. The Seneca deposit, 3 km to the west, also lies at a felsic-mafic contact. P12 and P17 will follow up on massive sulphide fragments observed in S-91-06 and explore untested stratigraphy below and northwest of the felsic dikes cutting through the Vent zone.

Figure 3 is an air photo composite of the Seneca area. The Fleetwood, Vent and Seneca deposit are located on a 325° NW trend. Important northeast trending structures are easily seen in the steeper terrain northeast of the trend and are shown in yellow. These cross faults clearly are important in controlling sulphide deposition. Four major NE trending structures occur in the 3 km northwest along the 325° trend. The intersection of these linears represent excellent targets. P14, P15 and P16 will test the next NE lineament located 500 meters east of the Fleetwood zone.

P9, P10 and P11 (750 m, $50K) are infill holes on the Fleetwood zone. These holes will reduce the drill spacing to 150 meters and test for very thick accumulations of massive sulphide.

The Fleetwood proposed drilling totals 4750 m at a cost of $309,000.

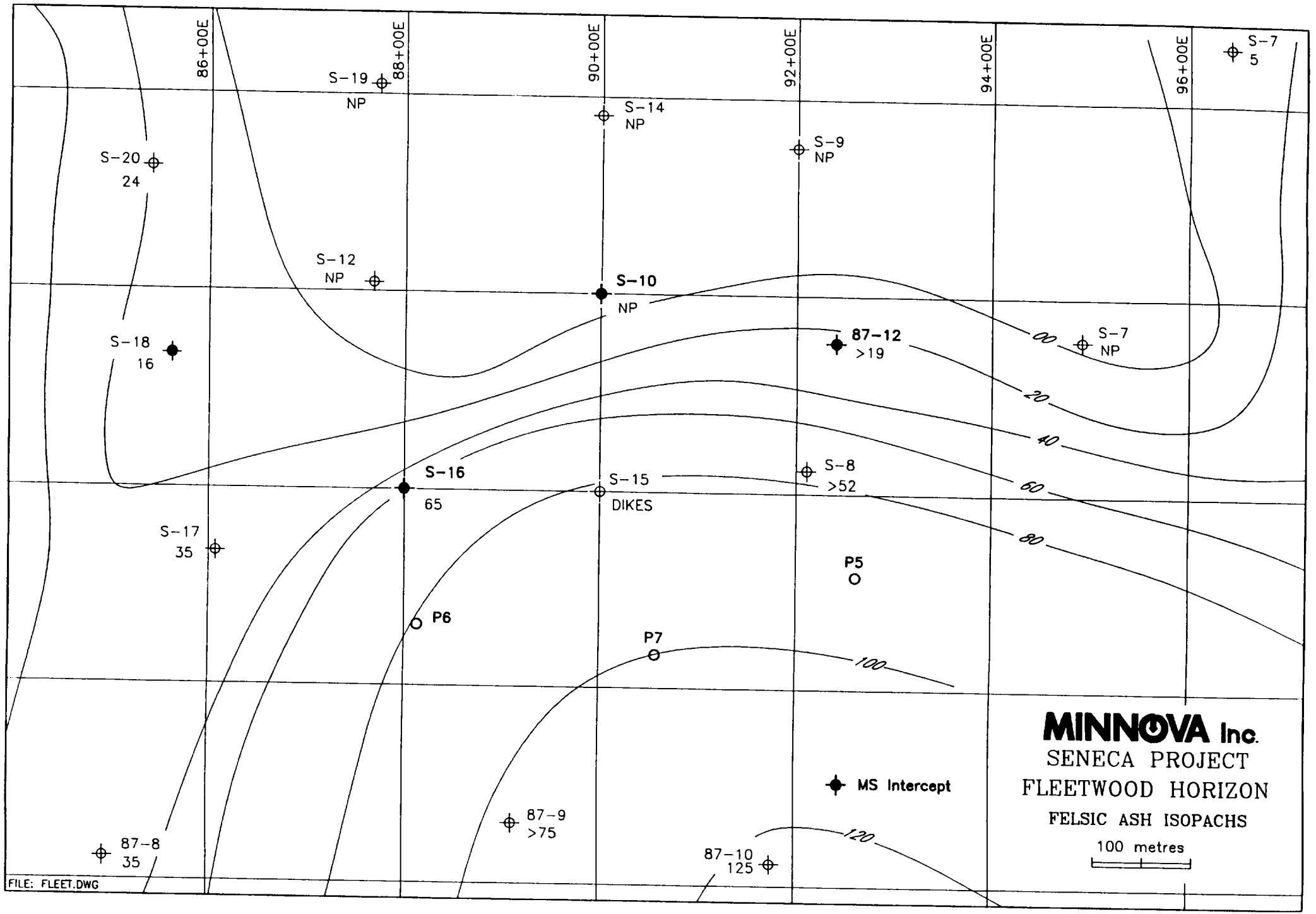
Seneca Pit Area

Several holes were proposed last year and remain to be drilled (April 25, 1991 Drill Proposal - Seneca Option).

Two new holes are proposed to explore horizons in the footwall of the Seneca deposit. The best massive sulphide intercepts on the property are holes 74-37, 71-5, 71-6 and 83-10. These holes each hit massive sulphide intervals of greater than 5 meters (see Table 2). P17 will explore stratigraphy below these intercepts and 100 meters west and adjacent to the postulated Seneca synvolcanic fault. The hole will test the concept that massive sulphide fragments are derived from a horizons below the existing zone and in contact with the Seneca dome complex. P18, located on the Fleetwood road, will test the Trough area sediments 200 meters down dip from the 79-21 zinc exhalite (11 m of .5% Zn). Hole 79-12 intersected a mafic dike in place of the Trough package and therefore the horizon remains open north and west of 79-21.

Conclusions

Last year's 20 hole program demonstrated that the Seneca property is underexplored. The 1992 spring program will fully evaluate the Fleetwood zone and generate new targets on the property.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MS Intercept
MINNOVA Inc.
SENECA PROJECT
FLEETWOOD HORIZON
FELSIC ASH ISOPACHS
100 metres
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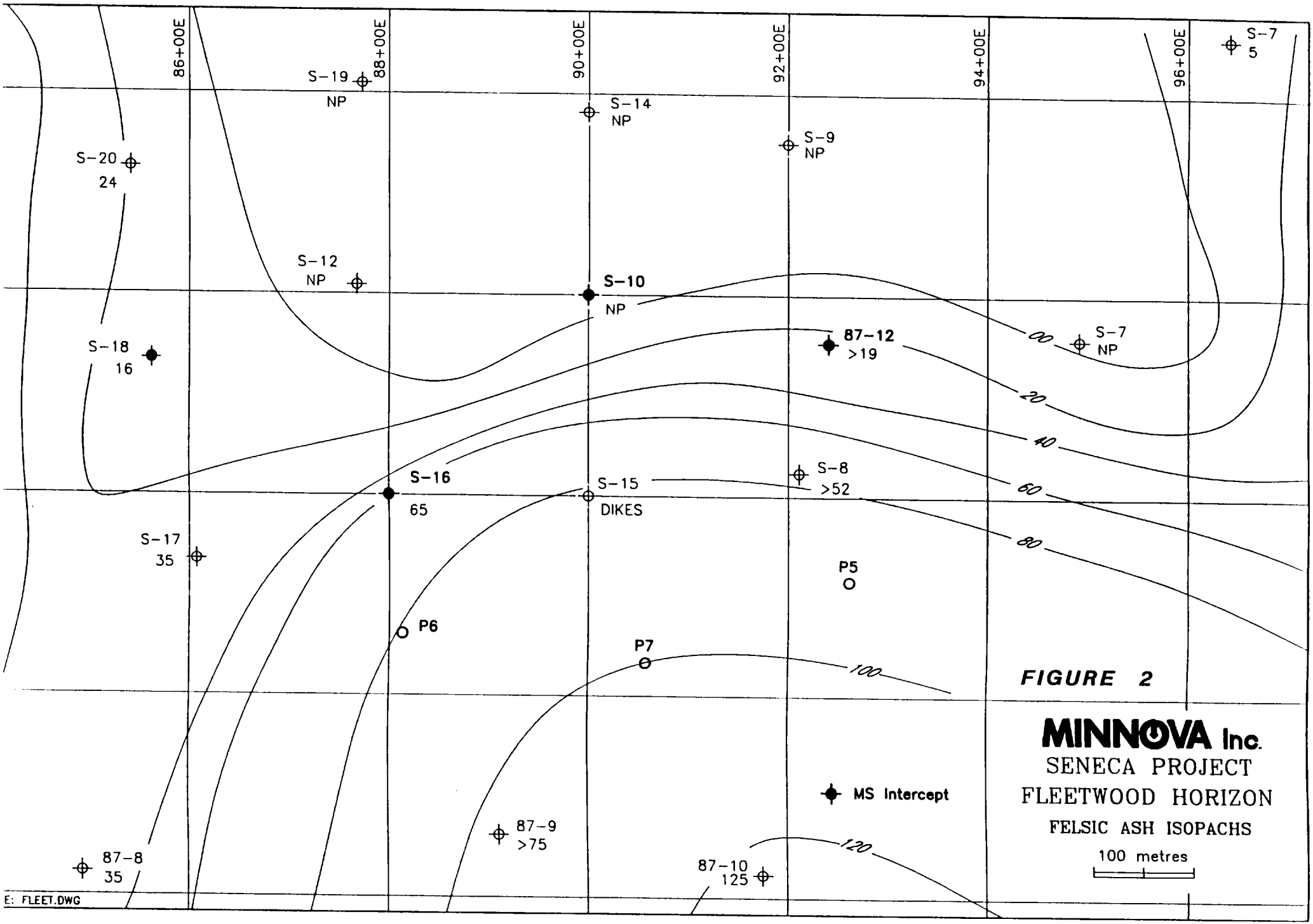

FIGURE 2

MINNOVA Inc.

SENECA PROJECT

FLEETWOOD HORIZON

FELSIC ASH ISOPACHS

100 metres

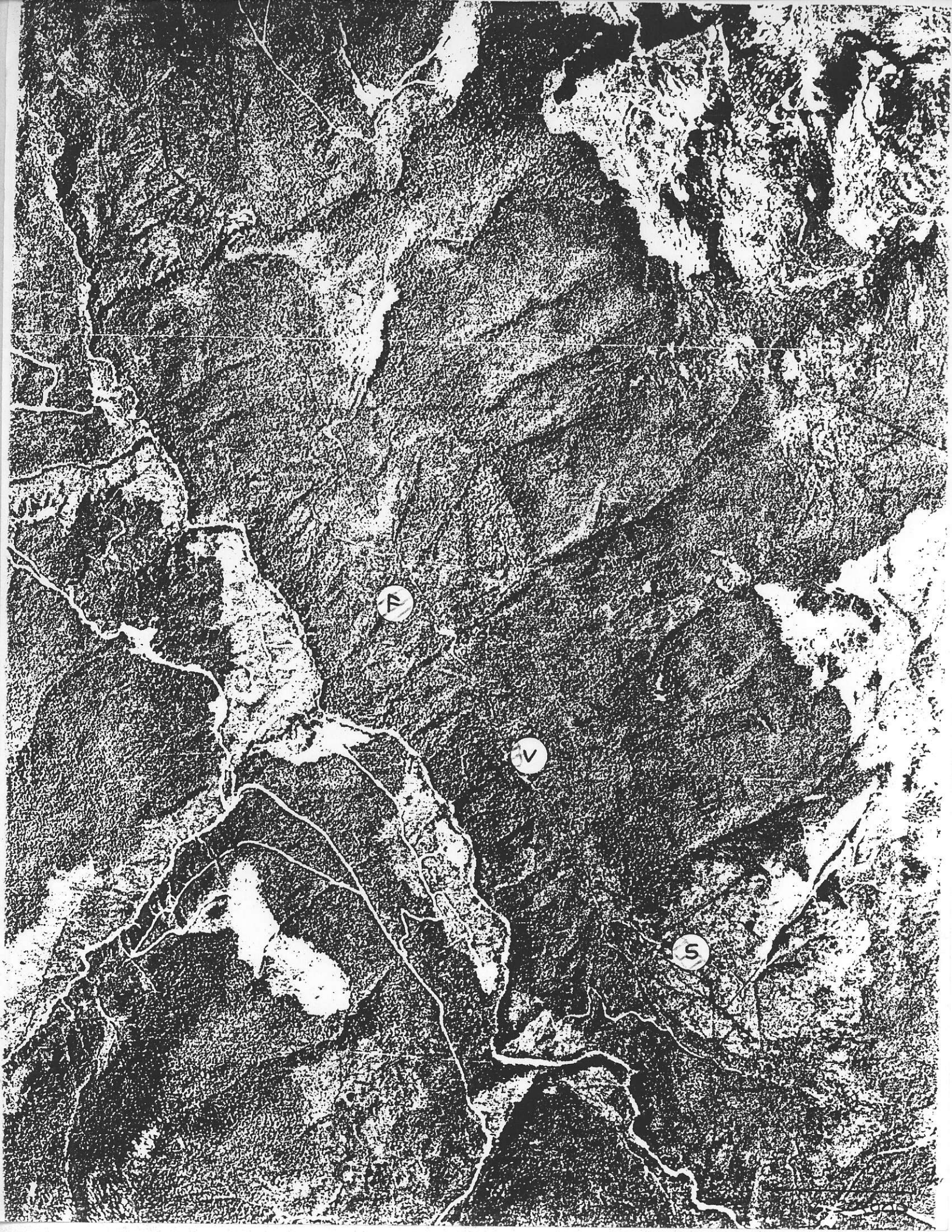
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Table 1. Fleetwood Zone Significant Intercepts

Hole	*Width (m)*	*Cu (%)*	*Pb (%)*	*Zn (%)*	*Ag (gpt)*	*Au (gpt)*	*NSR ($CAN)*	*Depth (m)*	*Remarks*
Massive Sulphide Intercepts									
87-12	.46	.47	3.04	6.45	326.0	2.29	$97	125	
S-91-10	1.35	.84	.42	13.77	28.9	.65	$92	145	
S-91-16	1.10	.38	.37	5.56	162.2	2.37	$72	150	
S-91-18	2.24	.79	.10	9.67	14.7	.10	$63	245	clastic + stgr.
Stockwork Sulphide Intercepts*									
87-12	13.86	.18	1.03	2.99	27.4	.47	$26	125	
S-91-10	17.40	.15	.03	1.89	10.0	.01	$17	145	
S-91-16	32.05	.30	.11	2.06	8.1	.16	$16	150	
S-91-18	8.24	.53	.04	5.74	7.6	.07	$38	245	

*not including overlying massive sulphide

Table 2. Seneca Deposit Significant Intercepts

Hole	*Width (m)*	*Cu (%)*	*Pb (%)*	*Zn (%)*	*Ag (gpt)*	*Au (gpt)*	*NSR ($CAN)*	*Depth (m)*	*Remarks*
Massive Sulphide Intercepts									
71.5*	5.20	2.27		7.45	103.50	1.91	90	10	
71-6*	7.80	1.01		9.15	84.60	2.82	92	12	
83-10*	5.30	1.45	0.22	4.93	92.50	1.73	66	41	
83-9	4.90	0.19	0.05	3.66	22.74	1.06	33	50	in OZC
74-37*	6.40	1.62	0.13	8.83	53.27	3.39	98	40	
83-7*	4.00	1.29	0.08	5.25	32.83	1.67	59	62	
72-20	3.60	0.31	0.08	3.46	22.29	0.86	31	77	2 horizons
83-6	1.30	5.11	0.04	17.70	144.34	6.96	220	121	diked out
71-15	3.70	0.58	0.23	2.84	51.99		27	188	OZC
83-13	0.60	1.56	0.28	9.70	64.80	2.95	100	100	
74-32	1.70	0.56	0.18	6.15	49.62	2.04	61	132	
74-31*	5.00	0.64	0.66	11.28	125.13	0.90	89	96	
73-26	1.20	0.26	0.10	2.30	41.14	0.69	25	70	
Conglomerate Intercepts									
83-11	4.14	0.70	0.09	5.20	47.60	1.47	53	80	
83-5	0.22	0.37	0.36	4.30	81.60	1.44	48	122	no bracket
75-41	3.10	0.03	0.33	3.68	28.73	0.80	26	150	
75-43	5.80	0.31	0.22	3.53	30.17	0.29	28	220	
83-13	0.58	1.56	0.28	9.77	64.80	2.95	100	100	MS frags
83-18	3.75	1.20	0.37	2.86	23.12	0.43	34	107	

* > 3.0 m width; >60$ NSR
OZC ore zone conglomerate – a poorly consolidated unit

S-92-21

Table 3. Proposed Diamond Drill Holes – Seneca 1992

Hole #	Line	Stn.	Azim.	Dip	Length	Cost*	Target
Fleetwood Zone Targets							
P1	93+80E	0+75N	~~230~~ 050	~~-70~~ -83	250 m	$16,250	P1 will followup mineralization in 87–12 200 m SE with coincident Mag & VLF anomalies
P2	95+50E	0+30N	230	~~-65~~ ?	250 m	$16,250	P2 will test a Mag anomaly
P3	83+00E	1+00N	050	~~-70~~ -77	300 m	$19,500	P3 will follow up mineralization in S–91–18 200 m west
P4	82+15E	3+00N	050	~~-70~~ -75	350 m	$22,750	P4 will follow up mineralization in S–91–18 200 m northwest
P5	91+90E	0+00	230	-75	250 m	$16,250	P5 will tst the Fleetwood horizon 300 m S of the 87–12 intercept and in middle of the basin
P6	87+50E	0+65S	230	-75	300 m	$19,500	P6 will test stratigraphy 200 m S of S–91–16
P7	89+90E	0+20S	230	~~-70~~ -710	300 m	$19,500	P7 will test area of thickest ash accumulation 200 m southeast of S–91–16 intercept
P8	83+25E	5+00N	050	~~-60~~ -65	300 m	$19,500	P8 will test the NW Mafic flow and Fleetwood dome contact
P9	86+20E	2+50N	230	~~-65~~ -68	300 m	$19,500	P9 will test Fleetwood between S–16 and S–18
P10	88+20E	2+00N	230	~~-72~~ -66	250 m	$16,250	P10 will test Fleetwood between S–16 and S–10
P11	~~90+50E~~	~~2+00N~~	~~230~~ 050	~~-65~~ -73	200 m	$13,000	P11 will test Fleetwood between S–12 and S–10

P1 P3 P4 P8 P6 P7

Table 3. Proposed Diamond Drill Holes – Seneca 1992 (cont.)

Hole #	Line	Stn.	Azim.	Dip	Length	Cost*	Target
P12	96+80E	1+20N	230	-70 -80	250 m	$16,250	P12 contingent on results of P2 and will test Vent offset concept and -Na2O in S-11
P13	85+25E	5+00N	050	-60 -80	300 m	$19,500	Contingent on results of P8; P13 will test the Mafic flow/Fleetwood dome contact 200 m N. of S-20
P14	79+25E	3+50N	050	-80	300 m	$19,500	Will test intersection Fleetwood – Seneca mineralized trend with NE cross fault
P15	78+70E	7+70N	230	-80	300 m	$19,500	Will test intersection of Fleetwood alteration zone and NE trending cross fault
P16	79+50E	~~1+00N~~ 2+00N	230 ~~050~~	-80	300 m	$19,500	Will test intersection of Fleetwood-Seneca mineralized trend and the NE cross fault
P17	98+80E	1+70N	050	-80	250 m	$16,250	Will test MS frags in S-06 and a Zn-Ba-Cu soil north of Vent
+ 2 holes down road on structural							
Total:					4750 m	$308,750	
Pit Area Targets							
P18	1+30W	1+50N	050 ~~230~~	-85 ~~-80~~	125m ~~150~~ m	$9,750	P18 will test a zinc enriched sediment horizon stratigraphically below the Seneca horizon
P19	1+50E	7+00S	050	-70	100 m	$6,500	P19 will test the Trough zinc exhalite near a large zinc in soil anomaly
Total:					250 m	$16,250	
TOTAL:	1992 SPRING PROGRAM				5000 m	$325,000	

*based in 1991 total cost + Minnova cost of $65/m