

093860

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS 105 G/6

ASSESSMENT REPORT

DIAMOND DRILLING

NOLE PROPERTY (VAL CLAIMS)

WATSON LAKE M.D., YUKON

HOOLE RIVER AREA

LATITUDE: 61°20'N

LONGITUDE: 131°12'E

WORK PERIOD

JULY 16-20, 1997

MARCH, 1998

PAUL A. MACROBBIE

093860

TABLE OF CONTENTS

	<u>Page</u>
1. SUMMARY	1
2. LOCATION AND ACCESS	1
3. TOPOGRAPHY	1
4. PROPERTY AND OWNERSHIP	1
5. PREVIOUS WORK	1
6. REGIONAL GEOLOGY	2
7. PROPERTY GEOLOGY	2
8. DIAMOND DRILLING	2

FIGURES

FIGURE 1	LOCATION MAP
FIGURE 2	CLAIM MAP WITH DDH LOCATIONS & GEOCHEMICAL SAMPLES
FIGURE 3	DDH N097-02 SECTION

APPENDICES

APPENDIX 1	STATEMENT OF EXPENDITURES
APPENDIX 2	STATEMENT OF QUALIFICATIONS
APPENDIX 3	GEOCHEMICAL RESULTS
APPENDIX 4	DIAMOND DRILL HOLE LOGS

ASSESSMENT REPORT**NOLE PROPERTY, YUKON TERRITORY****1. INTRODUCTION**

The VAL claims were staked in 1989 to acquire Cominco's previously held but untested NOLE property. In August of 1990, a geophysical survey (HLEM and MAG) and recce mapping was carried out on the property to evaluate the Pb-Zn-Ag potential. In July 1997, 2 diamond drill holes were completed on the property, one of which is reported here.

2. LOCATION AND ACCESS

The NOLE property is located south of the Hoole River at Lat. 62°20'N and Long. 131°12'E 100 km SE from Ross River, Yukon (Fig. 1).

3. TOPOGRAPHY

The claim group covers a semi-mountainous zone on the northern edge of the Pelly Mountains. The elevation ranges from 1300 m to 2100 m in moderate to steeply sloping ground. Small scrub coniferous and deciduous vegetation ends at the 1400 m contour and the ground cover is alpine heather above 1400 m. Glaciation has played a major role in developing the current landform.

4. PROPERTY AND OWNERSHIP

The property consists of the following 10 claims (10 units) owned 100% by Cominco Ltd. (Plate 97-1):

<u>Claims</u>	<u>Units</u>	<u>Tag No.</u>	<u>Date Rec.</u>	<u>Due Date</u>
VAL 1-10	10	YB16497-506	Sept. 28/89	Mar. 28/95

5. PREVIOUS WORK

The history of the property dates back to 1977 when Cominco's Pelly Mt. Recce program staked the Nole property to cover the drainage area of a stream silt anomaly that yielded 2,400 ppm Pb and 8,500 ppm Zn. Four days were spent on grid soil sampling, prospecting and geological mapping a 2,000 m by 250 m area. The grid soil sampling defined a 1000 x 100 m >100 ppm Pb (peak 26300 ppm) and >300 ppm Zn (peak 10400 ppm) anomaly open along strike to the southeast. Geological mapping located breccia and fracture filling sphalerite and galena mineralization in dolomitic quartz siltstone and graphitic shale. Prospecting noted the scarcity of outcrop within the geochem anomaly and the large areal extent of limonitic and ochreous material which probably indicates the presence of oxidizing Pb-Zn sulphides. No additional exploration work beyond the initial four days was performed on the property and the claims were allowed to lapse.

In 1989 the VAL claims were staked subsequent to the recognition that the stratigraphies hosting the Nole and Hoole mineralization, located 8 km along strike to the NW, are the same and that the Nole Pb-Zn mineralization itself shows similarities to portions of the Hoole mineralization. Recently obtained Pb isotope data on galena samples from the Hoole and Nole properties indicate a Cambrian age.

The 1990 work consisted of a test geophysical survey (HLEM and MAG) over 3.0 km of flagged grid line. The purpose for the surveys was to test the viability of HLEM and mag as exploration tools in the

search for massive Pb-Zn sulphides in this geologic environment. Limited reconnaissance mapping was also conducted.

In 1997, 2 diamond drill holes (totalling 213.3 metres) were completed on the property to test soil anomalies and ferricretes to the southeast of the surface showings. One drill hole (NO97-02; 78.0 metres) is reported here.

6. REGIONAL GEOLOGY

The Pelly Mountains, between the Tintina and St. Cyr Faults, consist primarily of fine sediments deposited on the northeast flank of the Pelly-Cassiar Platform. The rocks consist of complexly folded and faulted carbonaceous and calcareous pelites and carbonates of upper Cambrian to Devonian age. A lateral transition between shelf and basin environments occurs to the southeast near the St. Cyr Fault resulting in the deposition of upper Cambrian to Ordovician quartzite, siltstone and shale facies and bioclastic Silurian carbonates. Low grade metamorphism is prevalent throughout the region resulting in fissile shales and phyllites in the pelitic units. Locally the carbonates are recrystallized to a low grade, fine-grained marble with dolomitized sections.

7. PROPERTY GEOLOGY

The Nole property is underlain by rocks of the Selwyn Basin from Cambrian to Devonian age as mapped by the Geological Survey of Canada. These Selwyn Basin rocks are fault contacted by the Tintina Fault to the NE and the St. Cyr Fault to the SW.

The stratigraphy in the area of Pb-Zn mineralization has been subdivided into 3 broad units. The oldest unit consists of Cambrian to Ordovician orange-brown weathering, interbedded phyllitic and calcareous siltstone and mudstone. The overlying Ordovician to Silurian unit is a heterogeneous, thin to thick bedded succession of transitional shelf-basin clastic facies consisting of black carbonaceous, siliceous quartz siltstone and mudstone grading upwards (?) into more calcareous mudstone, quartz siltstone and minor limestone. This unit contains a distinctive tan to light grey weathering dolomitic siltstone that hosts fracture and breccia infill Pb-Zn mineralization. The youngest unit consists of Silurian black carbonaceous massive bedded silty limestone and bioclastic limestone.

The rocks generally strike 110° and are moderately to strongly foliated and complexly folded within numerous thrust slices. The stratigraphy as defined suggests the presence of a synclinal structure cored by Silurian carbonates and cut by axial planar faults or simply thrust fault repetition of the rock sequence.

No new mapping was done on the property in 1997. Geologists were on site solely for the drilling purposes. No geologic map is included in this report; the map included in the 1990 Assessment Report is still current.

8. DIAMOND DRILLING

Diamond drilling was based out of Cominco's KZK camp located 35 kms to the northeast. The drilling contractor was DJ Drilling of Surrey, B.C. All core is stored at KZK.

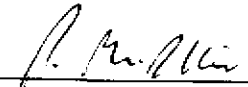
DDH NO97-02 (78.0 m) was located at downslope from NO97-01 to further test a 1977 soil anomaly and area of gossanous ferricrete. Unfortunately, this hole intersected a sequence of carbonaceous and variably pyritic mudstones, siltstones and silty mudstones. No significant mineralization was intersected. Core axis angles are quite low and appear to confirm the presence of a synclinal structure.

Approved for
release by:



D. W. Moore,
Exploration Manager
Western District

Reported by:



Paul A. MacRobbie,
Project Geologist

APPENDIX 1

STATEMENT OF EXPENDITURES

Geochemistry Staff Costs	781.12
Geology Staff Costs	3,510.20
Drilling	23,662.88
Domicile	935.00
Helicopter	31,525.00
Total	\$60,414.20

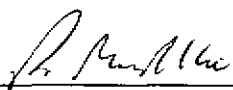
APPENDIX 2

STATEMENT OF QUALIFICATIONS

I, Paul A. MacRobbie, of 11164 Southridge Rd., Delta, B.C. hereby declare that I:

1. Graduated from Carleton University, Ottawa, Ontario with a B.Sc. in Geology in May, 1986 and a M.Sc. in Geology in June, 1988.
2. Have been actively engaged in mineral exploration in Western Canada as a permanent geologist with Cominco Ltd. since June, 1988.
3. Am a registered member of The Association of Professional Engineers and Geoscientists of the Province of British Columbia.

Date: March, 1998



P.A MacRobbie, P. Geo
Project Geologist

**APPENDIX 3
GEOCHEMICAL RESULTS**

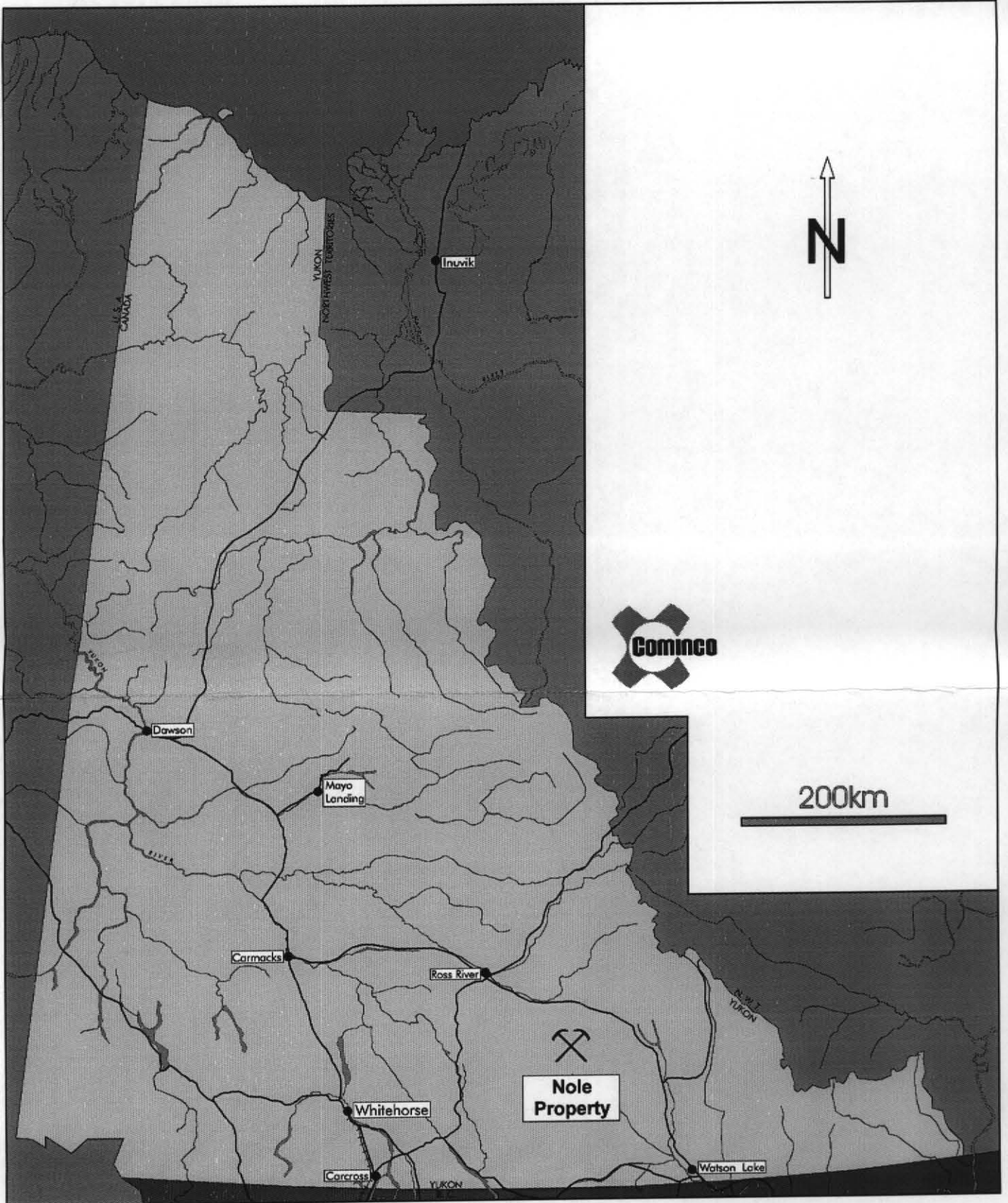
Field	Cu	Pb	Zn	Ag	As	Ba	Cd	Co	Ni	Fe	Mo	Cr	Bi	Sb	V	Sn	W	Sr	Y	La	Mn	Mg	Ti	Al	Ca	Na	K	BaXRF
332614	23	24	106	1.2	12	58	1	8	19	2.13	1	2	2	2	6	1	1	68	21	7	491	0.26	0.005	0.21	2.56	0.02	0.01	0
332615	21	57	134	1.7	13	107	2	6	26	1.75	3	2	2	2	23	1	1	28	21	6	725	0.18	0.005	0.19	1.24	0.02	0.04	0
332616	9	44	40	0.2	4	45	0.5	2	11	0.91	1	9	2	2	12	1	1	36	16	4	888	0.23	0.005	0.23	1.41	0.02	0.02	0
332617	5	16	19	0.2	18	34	0.5	2	7	0.81	1	6	2	2	7	1	1	92	9	4	529	2.17	0.005	0.13	5.25	0.005	0.01	0
332618	11	29	126	0.2	3	80	0.5	4	18	1.59	1	9	2	2	11	1	1	44	13	4	602	0.32	0.005	0.21	1.32	0.03	0.03	0
332619	41	113	298	0.2	43	152	0.5	19	46	5.23	3	8	2	2	11	1	1	51	17	5	600	0.15	0.005	0.51	0.42	0.005	0.05	0
332620	37	3696	9045	3.9	36	633	14	16	32	7.33	4	6	2	2	17	1	1	44	15	7	3014	2.05	0.005	0.39	4.49	0.005	0.02	0
332621	92	19190	34870	30	243	782	51	31	25	20.7	3	9	2	2	34	1	1	60	15	9	5778	1.86	0.005	0.43	5.26	0.005	0.01	0
332622	104	24580	23898	14.7	199	134	47	75	31	22.2	5	7	2	6	35	1	1	109	13	9	5558	2.37	0.005	0.48	6.53	0.005	0.01	0
332623	18	224	266	0.4	16	147	0.5	8	16	2.62	3	2	2	2	5	1	1	24	10	5	413	0.06	0.005	0.22	0.25	0.005	0.02	0
332624	47	2056	21490	1.3	60	275	82	8	35	11.2	6	13	2	11	75	1	1	335	26	10	7321	5.03	0.005	0.82	9.14	0.005	0.005	0
332625	33	70	371	0.2	24	130	1	13	36	4.72	1	4	2	2	5	1	1	38	17	6	391	0.14	0.005	0.45	0.95	0.005	0.02	0
332626	36	50	172	0.2	44	91	0.5	19	40	5.08	1	4	2	2	2	1	1	22	18	7	563	0.12	0.005	0.45	0.52	0.005	0.02	0
332627	62	81	224	0.2	26	59	0.5	28	59	6.14	1	4	2	2	2	1	1	50	18	5	951	0.23	0.005	0.31	1.22	0.005	0.03	0
332628	33	30	135	0.2	40	42	0.5	20	39	4.07	1	2	2	2	1	1	1	37	13	7	353	0.16	0.005	0.3	0.9	0.005	0.02	0
332629	33	28	145	0.2	11	37	0.5	21	48	3.29	1	2	2	2	1	1	1	141	11	6	423	0.31	0.005	0.26	6.12	0.005	0.02	0
332630	37	38	147	0.2	16	40	0.5	18	39	4.54	1	2	2	2	2	1	1	54	13	6	443	0.19	0.005	0.32	2.1	0.02	0.02	0
332631	36	37	155	0.2	31	74	0.5	21	43	4.87	2	4	2	2	2	1	1	30	14	8	643	0.13	0.005	0.39	0.65	0.005	0.02	0
332632	17	130	173	1	39	62	0.5	1	11	2.96	12	6	2	2	42	1	1	39	5	3	104	0.02	0.005	0.14	0.13	0.005	0.06	0
332633	49	6655	8969	10.8	81	654	31	6	15	11	8	8	2	6	47	1	1	66	15	9	3654	3.14	0.005	0.53	27.79	0.005	0.01	0
332634	6	96	849	0.2	27	63	2	3	8	3.66	1	2	2	2	1	1	1	171	8	3	1481	2.78	0.005	0.03	5.54	0.005	0.005	0
332635	10	154	462	0.2	45	139	2	5	12	5.85	1	7	2	2	4	1	1	142	10	4	2076	2.27	0.005	0.07	5.43	0.005	0.005	0
332636	9	89	183	0.2	20	83	0.5	3	9	1.89	1	4	2	2	20	1	1	9	1	2	1331	0.04	0.005	0.48	0.15	0.03	0.02	0
332637	25	34	209	0.5	21	28	0.5	5	23	2.83	3	2	2	2	16	1	1	12	1	1	135	0.03	0.005	0.21	0.28	0.005	0.02	0
332638	55	32	295	1.3	56	65	3	16	44	3.74	3	5	2	2	13	1	1	78	21	10	416	0.37	0.005	0.26	5.06	0.005	0.03	0
332639	15	42	137	0.2	36	67	2	12	17	2.55	1	2	2	5	5	1	1	64	13	4	896	0.14	0.005	0.27	2.12	0.02	0.04	0
332640	4	18	66	0.2	8	12	0.5	1	5	0.74	1	2	2	2	8	1	1	3	1	2	51	0.01	0.005	0.08	0.08	0.005	0.005	0
332641	18	58	462	0.2	34	15	0.5	3	28	2.25	7	2	2	2	21	1	1	55	1	1	52	0.01	0.005	0.14	0.01	0.005	0.01	0
332642	23	878	2545	0.8	47	396	6	11	27	6.2	3	4	2	2	12	1	1	57	11	6	1679	2.56	0.005	0.25	6.46	0.005	0.01	0
332643	17	508	1697	0.6	1	328	11	7	15	3.48	1	2	2	2	10	1	1	75	13	7	1872	0.93	0.005	0.19	3.85	0.03	0.04	0
332644	32	2464	2054	1.7	47	175	4	8	25	7.26	5	5	2	2	13	1	1	44	15	6	1714	0.05	0.005	0.36	0.63	0.03	0.02	0
332645	29	57	222	0.2	39	41	0.5	16	28	3.48	1	2	2	2	1	1	1	53	17	7	1048	0.12	0.005	0.19	1.98	0.02	0.02	0
332646	27	27	171	0.2	34	29	0.5	16	28	2.6	1	2	2	2	1	1	1	60	15	12	648	0.14	0.005	0.14	2.39	0.02	0.05	0
332647	21	23	109	0.2	42	46	0.5	11	26	3.53	1	2	2	2	1	1	1	23	13	8	268	0.05	0.005	0.31	0.61	0.005	0.01	0

**APPENDIX 4
DIAMOND DRILL LOGS**

From	To	Geological Log
0.00	7.00	Overburden
7.00	16.80	Carbonaceous Mudstone Badly broken and faulted (very poor recovery), weakly oxidized, black, carbonaceous mudstone/silty mudstone.
16.80	28.20	Siltstone Mudstone Thin interbedded to laminated (<1 mm to 2 cms, generally <1 cm), dark to medium grey, siliceous, fine-grained siltstone and dark grey to black, variably carbonaceous silty mudstone/mudstone. Siltstone comprises approximately 50-55% and 40-45% mudstone/silty mudstone. Siltstone interbeds locally contain up to 5% (generally 1-3%), discontinuous/patchy, very fine-grained disseminated pyrite; locally pyrite appears possibly stratiform. Bedding is oriented at very low angles to ca. Abundant white quartz+Fecarbonate veinlets/veins cut the unit. Fine-grained pyrite-quartz veins up to 2 cms are present at 17.9 m and 19.3-19.6 m. 18.00-18.10 So at near parallel to 5 to ca. 20.00-20.10 So at 20 to ca. 23.50-23.60 So at 15 to ca. 26.80-31.40 Fault Badly broken interval with very poor core recovery - fault. 27.00-27.10 So at 45 to ca.
28.20	31.40	Quartzite Badly broken interval of medium to light grey, very siliceous, fine-grained, relatively massive/poorly bedded quartzite/siltstone. Apparent bedding is also at low angles to ca. Unit has a very low sulphide content (trace-1% pyrite) and is cut by numerous thin white quartz veinlets and dark fractures.
31.40	34.00	Siltstone Mudstone Dark grey to black, weakly carbonaceous, interlaminated siltstone/silty mudstone containing trace-3% very fine-grained pyrite occurring as discontinuous, foliation/So parallel disseminations. Bedding is at low angles to ca. Occasional white quartz veinlets are present. 32.00-32.10 So near parallel to 5 to ca. 33.00-33.80 Fault Broken interval with poor core recovery and intervals of crushed/gouged/quartz veined mudstone.
34.00	35.60	Carbonaceous Mudstone Interval of badly broken, weakly foliated, dark grey to black, carbonaceous, generally massive to weakly laminated mudstone containing trace-2% very fine-grained disseminated pyrite, locally cut by abundant white quartz+Fecarbonate veinlets. Lower contact is gradational.
35.60	38.90	Carbonaceous Mudstone Siltstone As above, more carbonaceous with pyrite occurring as very fine-grained disseminations predominantly within medium grey siltstone interbeds/laminations. Possible trace sphalerite in a late quartz veinlet at 37.7 m. 37.10-37.20 So at 20 to ca. 37.80-38.90 Predominantly mudstone with very minor silty mudstone/siltstone interlaminations, reflecting a gradational contact into underlying mudstones. So at 14 to ca.

From	To	Geological Log
38.90	53.90	<p>Carbonaceous Mudstone Pyritic Mudstone Black to dark grey, carbonaceous and locally weakly calcareous mudstone with 2-5% wispy to disseminated (locally possibly framboidal) and laminar, very fine-grained pyrite. White quartz+calcite veinlets are present as are pyrite-quartz veinlets in areas of increased pyrite content. Unit is well foliated with bedding at low angles to ca. 40.70-40.80 7 cm thick, very fine-grained pyritic (10-15%) interbed with pyritic and nonpyritic mudstone fragments, adjacent to quartz-calcite-pyrite veinlets. 42.50-46.60 Fault Badly broken interval with several gouged zones and abundant white quartz+Fecarbonate/calcite veinlets. Very fine disseminated pyrite defines faint laminations. White quartz veinlets/fracture fillings are present. At 40.7 m, 7 cm very fine-grained pyritic (10-15%) interbed with <8 mm, pyritic and nonpyritic mudstone fragments; So at 40 to ca. Similar pyritic interbeds up to 2 cms at 42.0 m. 46.60-53.90 Increased laminar pyrite content, up to 15-20% from 47.3-48.2 m, and slightly more siliceous character. Sphalerite occurs as light pink to brown grains in late, foliation parallel (S1 at 61 to ca) quartz-pyrite veinlets from 47.7-47.9 m. A 0.5 cm interbed of pyrite occurs at 48.2 m. Broken interval with poor core recovery from 50.0-53.9 m; very bad recovery from 51.5-53.9 m - fault 49.60-49.70 So at 58 to ca.</p>
53.90	68.70	<p>Siltstone Dark to medium grey, laminated siltstone/silty mudstone containing trace-3% pyrite as blebby disseminations parallel to So and as late pyrite-quartz veinlets and fracture fillings (generally <2 mms) oriented parallel to S1 (an axial planar foliation to minor folds). Pyritic veinlets are cut by numerous white, late quartz+epidote?-Fecarbonate veins which trend near parallel to the ca. These late veins contain trace galena from 53.9-58.5 m. So is at 70 to ca at 48.6 m and 59 to ca at 49.5 m. At 54.5 m, So is at 18, S1 is at 58 to ca. At 56.6 m, So is 10, S1 is 62. At 58.9m, So is 15, S1 is 55. At 61.8 m, So is 30, S1 is 48. At 64.4 m, So is 25, S1 is 50. At 66.5, So is at 5 to ca, S1 is 50 to ca. 64.00-68.70 Siltstone Interval looks very similar to the interval 31.4-34.0 m; perhaps more silty mudstone component. Carbonaceous component increases with depth reflecting a gradational contact into underlying mudstones.</p>
68.70	70.20	<p>Pyritic Mudstone As above, generally massive/poorly bedded with faint pyritic laminations and 3-5% very fine-grained disseminations and S1 parallel veinlets/fracture fillings. So at 25 to ca and S1 at 56 to ca at 69.5 m.</p>
70.20	72.00	<p>Pyritic Mudstone Siltstone As above, but is more silty mudstone in character, containing numerous siltstone/silty mudstone interlaminations. So at 20 to ca and S1 at 52 to ca at 70.7 m.</p>
72.00	78.00	<p>Pyritic Mudstone As above. So is near parallel to ca and S1 is 48 to ca at 72.8 m. At 77.0 m, So is 5 to near parallel to ca and S1 is 58 to ca.</p>

*** END OF HOLE *** 78.00



Drawn by:		Traced by: a. m. a.	
Revised by:	Date:	Revised by:	Date:

NOLE PROPERTY LOCATION

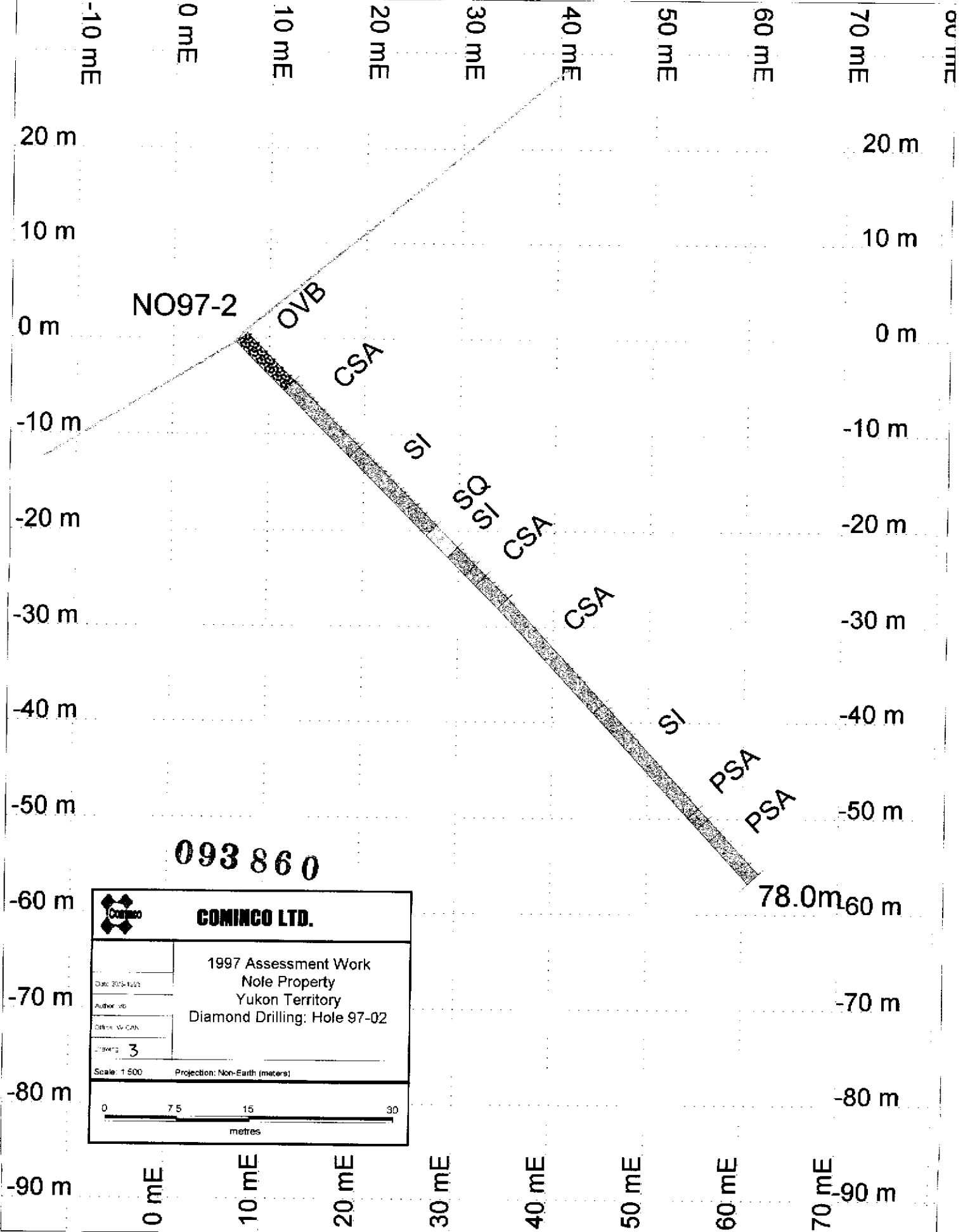
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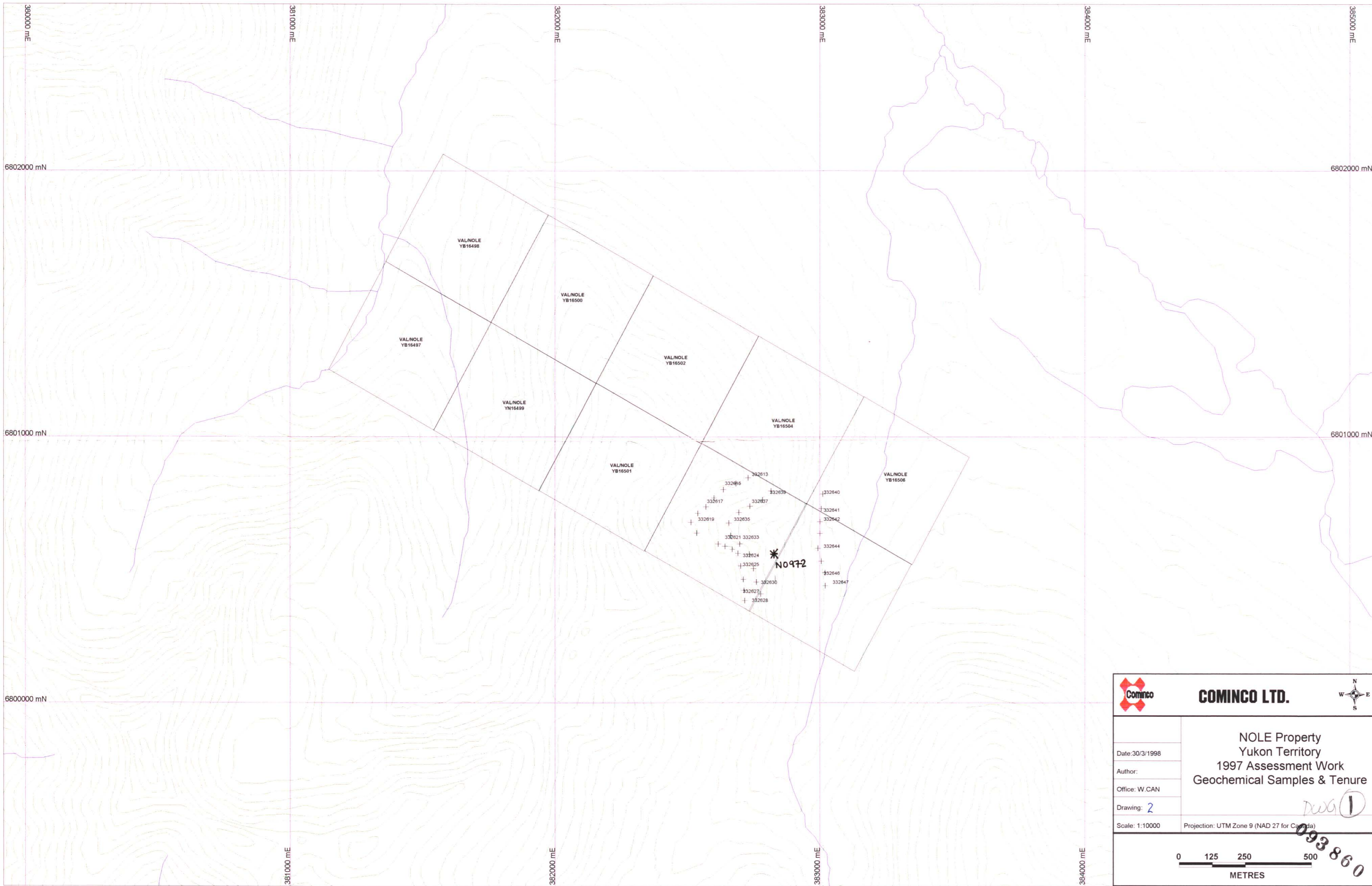
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Scale: As Shown

Date: August 1997

Plate: 1





 COMINCO LTD. 	
Date: 30/3/1998	NOLE Property Yukon Territory 1997 Assessment Work Geochemical Samples & Tenure
Author:	
Office: W.CAN	
Drawing: 2	
Scale: 1:10000	
Projection: UTM Zone 9 (NAD 27 for Canada) <div style="float: right; text-align: right;">  093860 </div>	