

WHITEWATER: DRILLING REPORT

HOLE WBC-80-4

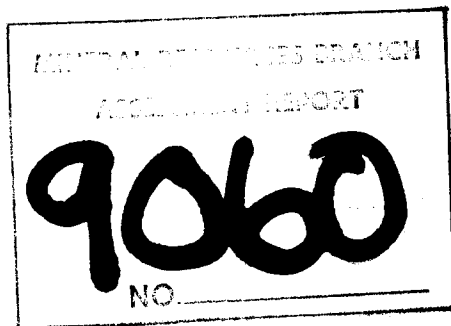
SLOCAN MINING DIVISION

82 K/3E

117<sup>0</sup>07'W, 50<sup>0</sup>04'N

Owner/operator:

Amoco Canada Petroleum Company Ltd.  
Mining Division  
656 - 409 Granville Street  
Vancouver, B.C.  
V6C 1T2



Report written by  
David Visagie  
February 1, 1981

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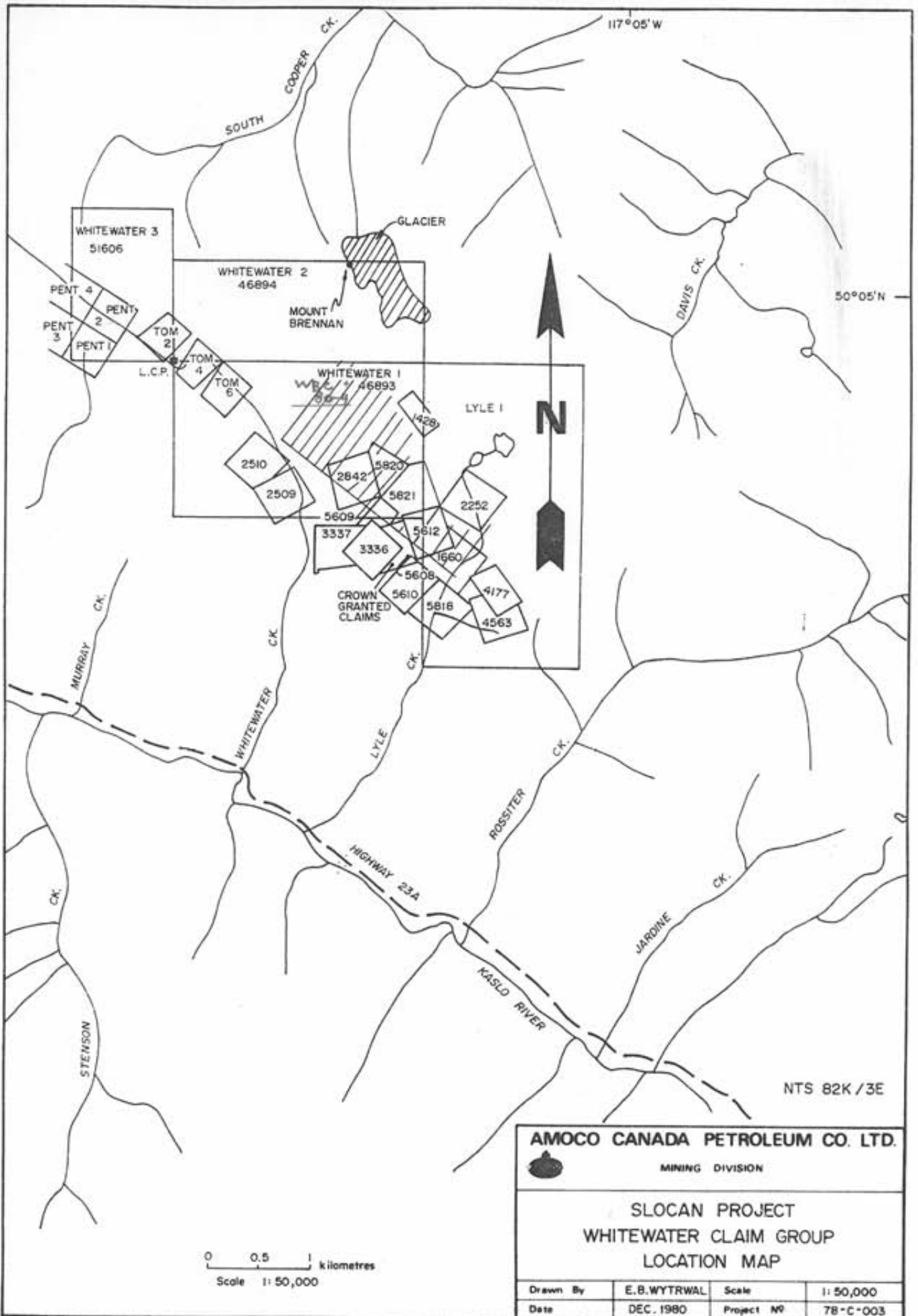
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## INTRODUCTION

The Whitewater Group, consisting of 31 contiguous units is located at  $50^{\circ}04'N$  latitude,  $117^{\circ}07'W$  longitude approximately 4 kilometers north of the old mining town of Retallack, B.C. The southern portion of the Whitewater Group is accessible by a logging road which extends to within 1 kilometer of the center of the property. Access from the road to the centre of the group is by hiking-trail. Relief on the property is 1300 metres. Due to the rugged terrain of the area all drill and crew moves were conducted using a Hughes 500-C helicopter.

The property was initially staked in 1979 in response to anomalous silt and soil gold geochemistry. During the 1979 and 1980 field seasons an extensive follow-up program consisting of geochemical, geological and geophysical surveying outlined several anomalous zones. In 1980 four drill holes were completed on selected targets. Hole WBC-80-4 drilled during the period September 8 to 12 1980 totalled 140.82 metres in length. The purpose of the hole was to test anomalous Au soil geochemistry values which partially corresponded to an outlined zone of anomalous chargeability. No economic gold intersections were encountered in the hole.



**AMOCO CANADA PETROLEUM CO. LTD.**  
 MINING DIVISION

**SLOCAN PROJECT  
 WHITEWATER CLAIM GROUP  
 LOCATION MAP**

Drawn By	E.B.WYTRWAL	Scale	1: 50,000
Date	DEC. 1980	Project N <sup>o</sup>	78-C-003



The drill core is presently stored in racks located  
at Retallack, B.C.

WHITEWATER CLAIM GROUPS

<u>Claim</u>	<u>Units</u>	<u>Tag No</u>	<u>Date Staked</u>	<u>Anniversary Date</u>	<u>Record No.</u>
Whitewater 1	15	46893	Aug.14, 1979	Aug.28, 1980	1403
Whitewater 2	10	46894	Aug. 14,1979	Aug.28, 1980	1404
Whitewater 3	6	51606	Aug. 16,1979	Aug.28, 1980	1405

EVALUATION OF WORK1. Drilling Costs

<u>Depth</u>	<u>Length</u>	<u>Cost/Meter</u>	<u>Cost</u>
0-3.96	3.96	72.17	\$286.00
3.96-140.82	136.86	65.60	\$8,980.00

2. Man and Drill Hours Costs Including Set-up and Tear-downField Cost

<u>Date</u>	<u>Shift</u>	<u>Man Hrs</u>	<u>Drill Hrs</u>	<u>Shift Hrs</u>	<u>Remarks</u>
Sept 8	Day	42	12	-	Drill move and
Sept 9	"	18	9	-	set-up
Sept 12	"	6	3	-	Dismantle drill
Sept 12	"	8	-	-	Unhooking water line
		<u>74</u>	<u>24</u>		

74 man hrs @ 22.00/hr = \$1,528.00

24 drill hrs @ 16.99/hr = 384.00

\$1,912.00

3. Camp-Cost

\$350.00/day 4 days = \$1,400.00

4. Transportation of Crew and Moving Drill

10.5 hrs helicopter @ \$300.00/hr = \$3,150.00



5. Assay Costs

46 samples assayed @ \$16.50/sample = \$759.00

6. Report Preparation

1 1/2 days @ \$100.00 = \$150.00

Total Costs = \$16,637.00

Drilling Carried Out By:

Connors Drilling  
2007 West Trans-Canada Highway  
P.O.Box 3340  
Kamloops, B.C.  
V2C 6B9

Helicopter Charter From:

United Helicopters  
4175 - 104th Street  
Delta, B.C.  
V4K 3N3

Assaying Carried Out By

Min-En Laboratories  
705 West 15th Street  
North Vancouver, B.C.

APPENDIX I

PROPERTY	WHITewater	LATITUDE	820 N	STARTED	September 8, 1980	DIP TEST					
HOLE NO.	WBC-80-4	DEPARTURE	180 E	FINISHED	September 12, 1980	Footage	Corrected	Footage	Corrected	Footage	Corrected
BEARING	220°	ELEVATION	2200 metres	LENGTH	140.82 metres (462')						
DIP-COLLAR	-60°	SECTION	180 E	LOGGED BY	D. Visagie						

FOOTAGE		DESCRIPTION	% Mineralization	SAMPLE NO.	FOOTAGE (m)			ASSAYS	
From	To				From	To	Length	Au	Ag
0	3.66	CASING		D 724	3.66	6	2.34	0.002	0.07
3.66	15.55	ANDESITE FLOW WITH MINOR SILTSTONE		D 725	6	9	3	0.002	0.08
		The flow unit is green-dark green coloured, fine grained and in the first 7 metres, highly fractured. The unit has weak to moderate chloritic alteration. In the highly fractured zone the rock is well oxidized with good limonite alteration being formed along the fracture faces. Throughout the unit appears 1% disseminated pyrite. Fractures occur parallel to and at 30° to the core axis. In the highly oxidized section appears a green coloured mineral (malachite?). Veining, consisting of quartz-quartz carbonate, is found throughout, occurring predominantly as hairline veinlets. These veinlets are typically barren and occur at various angles. A weak bedding occurring at 70° to the core axis is observed. On occasion a weak spherulite development is observed.		D 726	9	12	3	0.001	0.06
				D 727	12	15	3	0.001	0.08
				D 728	15	18	3	0.001	0.08
				D 729	18	21	3	0.009	0.06
				D 730	21	24	3	0.004	0.09
				D 731	24	27	3	0.001	0.08
				D 732	27	30	3	0.002	0.09
				D 733	30	33	3	0.001	0.07
				D 734	33	36	3	0.001	0.08
				D 735	36	39	3	0.002	0.08
				D 736	39	42	3	0.002	0.08
				D 737	42	45	3	0.021	0.02
				D 738	45	48	3	0.001	0.04
				D 739	48	51		0.001	0.05
				D 740	51	54	3	0.002	0.04
				D 741	54	57	3	0.002	0.08
				D 742	57	60	3	0.002	0.05
15.55	17.00	VOLCANIC SHALE - SILTSTONE		D 743	60	63	3	0.001	0.04
		This is a fine grained, black coloured unit. It is well bedded with bedding occurring at 70° to the core axis. Minor quartz carbonate veinlets are formed throughout. The unit is barren.		D 744	63	66	3	0.001	0.03
				D 745	66	69	3	0.001	0.07
				D 746	69	72	3	0.001	0.05
				D 747	72	75	3	0.002	0.03
17.00	22.50	ANDESITE FLOW		D 748	75	78	3	0.001	0.04
		This flow is fine grained, green-light green coloured. It has been well chloritized and in the section from 21.00 to 22.50 has been highly phologopitically altered. Good quartz carbonate veining is found throughout with the best veining occurring from 21.00 to 22.50.		D 749	78	91	3	0.001	0.06
				D 750	81	84	3	0.001	0.04
				D 751	84	87	3	0.002	0.08
				D 752	87	90	3	0.001	0.04
				D 753	90	93	3	0.001	0.08
				D 754	93	96	3	0.001	0.02
				D 755	96	99	3	0.002	0.01
				D 756	99	102	3	0.001	0.03
				D 757	102	105	3	0.002	0.02
				D 758	105	108	3	0.002	0.02
				D 759	108	111	3	0.001	0.04
				D 760	111	114	3	0.002	0.04
		From 21.76 to 22.50 the section contains almost total quartz, with the section averaging 2% pyrite.							

FOOTAGE		DESCRIPTION	% Mineralization	SAMPLE NO	FOOTAGE (m)			ASSAYS	
From	To				From	To	Length	Au	Ag
22.50	25.81	<b>FELDSPAR PORPHYRY</b> This unit is fine grained with feldspar phenocrysts of up to 0.5 cm. It is highly oxidized, giving it a red brown coloration. The unit contains 3% pyrite throughout. Weak quartz veining is developed throughout. At 23.36 occurs a 5 cm q.v which is irregular and contains 1% pyrite. This unit is homogeneous. Fractures occur throughout at various angles, with the most common being 20° to the core axis. The unit has highly broken contacts.		D 761	114	117	3	0.002	0.05
				D 762	117	120	3	0.001	0.02
				D 763	120	123	3	0.003	0.03
				D 764	123	126	3	0.002	0.02
				D 765	126	129	3	0.002	0.03
				D 766	129	132	3	0.002	0.02
				D 767	132	135	3	0.002	0.03
				D 768	135	138	3	0.001	0.03
				D 769	138	140.82	2.82	0.002	0.04
25.81	39.41	<b>ANDESITE FLOW</b> Similar to 17.00 to 22.50. From 25.81 to 27.44 the unit has good bi-pholog alteration and has, in addition, good quartz veining. At 25.81 occurs a 26 cm quartz vein which contains trace cpy, 1% py, trace po. In addition, from 26.06 to 26.50 there occurs a 44 cm zone which shows a good stockwork. At 26.61 occurs a 5 cm quartz zone which contains 5% py. From 27.44 to 29.57 the andesite is moderately chloritized and has a moderate quartz vein development. Occurring from 28.57 to 28.97 is a 20 cm zone of quartz carbonate veining which has 1% pyrite. From 29.57 to 31.09 the unit has good bi-pholog alteration and has moderate quartz vein development. Overall this section has 1% pyrite. From 31.09 to 33.80 the unit is chloritized andesite flow with the section from 31.81 to 32.31 averaging 5% pyrite occurring within q.v's. From 33.80 to 34.64 appears a fine grained, grey-green sediment which has good veining. From 34.64 to 37.39 the unit is a moderately chloritized andesite flow q.v at 35.86 - 2 cm at 80° to C.A., barren q.v at 36.36 - 2 cm at 30° to C.A., barren. From 37.39 to 37.79 occurs a bi-pholog altered zone which is similar to previous. Two q.v's occur: 37.42 - 1 cm at 60° to C.A., tr. po 37.53 - 1 cm at 80° to C.A., 1% po. From 37.79 to 39.41 occurs a chloritized andesite flow.							
							End of Hole		
39.41	40.98	<b>DIORITE - GABBRO</b> This unit is medium grained, green and white coloured. It is weakly chloritized and has minor carbonate veinlets throughout. Fractures occur throughout at 30° to the core axis. Minor po, py are found throughout. Limonite stain occurs along the fracture faces. Gradational contact. Phenocrysts of hornblende and pyroxene are observed.							
40.98	46.53	<b>CHLORITIZED ANDESITE FLOW</b> This unit is similar to 17.00-22.58. There are, however, several carbonate veinlets which have minor amounts (<1%) pyrite. There is ~10 cm/metre of carbonate veinlets with the veins being <<1 cm in thickness. This section is highly fractured with the sections immediately adjacent to the							

FOOTAGE		DESCRIPTION	% Mineralization	SAMPLE NO.	FOOTAGE			ASSAYS	
From	To				From	To	Length		
		intrusive appearing to be recemented by carbonate veins. The last 60 cm has 3% pyrite within it.							
46.53	51.70	DIORITE - GABBRO Similar to 39.41-40.98. Veining minor. From 49.90 to 50.70 the unit is chloritized andesite flow.							
51.70	60.35	CHLORITIZED ANDESITE FLOW Similar to 17.00-22.58. 53.43: 20 cm qtz-carb vein, irregular, limonite stained. 54.45: 20 cm zone of highly fractured rock. 55.07: 20 cm zone of highly fracture rock. 55.47: 1 cm q.v at 80° to the core axis, barren. Fractures occur at 60° and 30° to the core axis.							
60.35	61.59	GABBRO - DIORITE Similar to 39.41-40.98.							
61.59	140.82	ANDESITE FLOWS WITH MINOR SEDIMENT AND GABBRO The andesite ranges from being fine grained well chloritized to being fine grained non-chloritized. On occasion there appears to be a weak development of spherulites. Where the core has not been chloritized it appears to be grey-green coloured, whereas if there is good chlorite all the unit is green coloured. Quartz veining throughout is minor, consisting of hairline veinlets which have random orientation. Fractures are observed at various orientations. In addition, the unit has minor inclusions of the previously mentioned gabbro and a fine grained grey coloured siltstone in it. The siltstone occurs from 76.11 to 76.51 and at 93.77 to 94.00. In detail, this section is as follows: 61.57-70.00: Andesite flow. Moderate chloritic alteration, qtz-carb vein at 68.39, 20 cm, tr. py. 70.00-71.30: Dark grey volcanic sediment. 71.30-76.11: Andesite flow. Moderate chloritic alteration. 76.11-76.51: Light grey coloured massive siltstone. 76.51-76.91: Andesite flow. Grey coloured. 76.91-78.00: Gabbro. Massive, non-mineralized, weak carbonate veining. 78.00-81.70: Andesite. Moderately chloritized. 81.70-81.98: Gabbro. 81.98-82.91: Andesite flow. Well chloritized, trace pyrite. 82.91-84.45: Andesite flow. Well oxidized throughout, 2% pyrite disseminations. 84.45-93.77: Andesite flow. Weak to moderate chlorite alteration, medium amount of carbonate veining. 93.77-94.00: Siltstone. Grey-green coloured. At 93.96 - 7 cm qtz-carbonate vein at 60° to C.A., tr. pyrite.							

FOOTAGE		DESCRIPTION	% Mineralization	SAMPLE NO.	FOOTAGE			ASSAYS	
From	To				From	To	Length		
	94.00-97.12:	Andesite flow. Well chloritized.							
	97.12-105.77:	Andesite flow. Weak chloritic alteration throughout unit, grey coloured.							
		q.v at 99.87 - 5 cm at 10° to C.A., 2% pyrite							
		qtz-carb.v at 101.05 - 5 cm at 30° to C.A., tr. pyrite							
		q.v at 101.69 - 2 cm wide, parallel to C.A. for 20 cm, tr py.							
		tr. cpy							
		q.v at 104.14 - 5 cm at 60° to C.A., tr. pyrite.							
	105.77-108.00:	Andesite flow. Moderately chloritized, relatively massive.							
	108.00-113.00:	Spherulitic andesite flow. Moderately chloritized, contains weakly developed spherulite. Occasional weak banding at 70° to C.A. Minor amounts of quartz carbonate veining.							
	113.00-114.92:	Andesite flow. Chloritized moderately, non-mineralized.							
	114.92-131.68:	Andesite flow, spherulitic, Moderately-weakly chloritized. Tr. disseminated pyrite.							
		120.95 - 4 cm qtz-carb.v at 5° to C.A., trace pyrite.							
		122.60 - 4 cm qtz-carb.v at 50° to C.A., trace pyrite							
		126.50 - 1 cm qtz-carb.v							
	131.68-140.82:	Andesite flow. Well chloritized, minor limonite stain observed. Minor spherulite development.							
		139.10 - 1 cm q.v at 30° to C.A., tr. pyrite							
		140.50 - 1 cm q.v at 20° to C.A., tr. pyrite.							
140.82		END OF HOLE							

*J. V. ...*

APPENDIX II



## *MIN-EN Laboratories Ltd.*

*Specialists in Mineral Environments*

Corner 15th Street and Bewicke  
705 WEST 15th STREET  
NORTH VANCOUVER, B.C.  
CANADA

### ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORK

### PROCEDURES FOR Mo, Cu, Cd, Pb, Mn, Ni, Ag, Zn, As, F

Samples are processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the  $\text{CH}_2\text{H}_2$ -Air flame combination but the Molybdenum determination is carried out by  $\text{C}_2\text{H}_2$ - $\text{N}_2\text{O}$  gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzeit method using  $\text{Ag CS}_2\text{N} (\text{C}_2\text{H}_5)_2$  as a reagent. The detection limit obtained is 1.2 ppm.

Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soil samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.

*MIN-EN Laboratories Ltd.*

*Specialists in Mineral Environments*

Corner 15th Street and Bewicke  
705 WEST 15th STREET  
NORTH VANCOUVER, B.C.  
CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORK

PROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl. Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

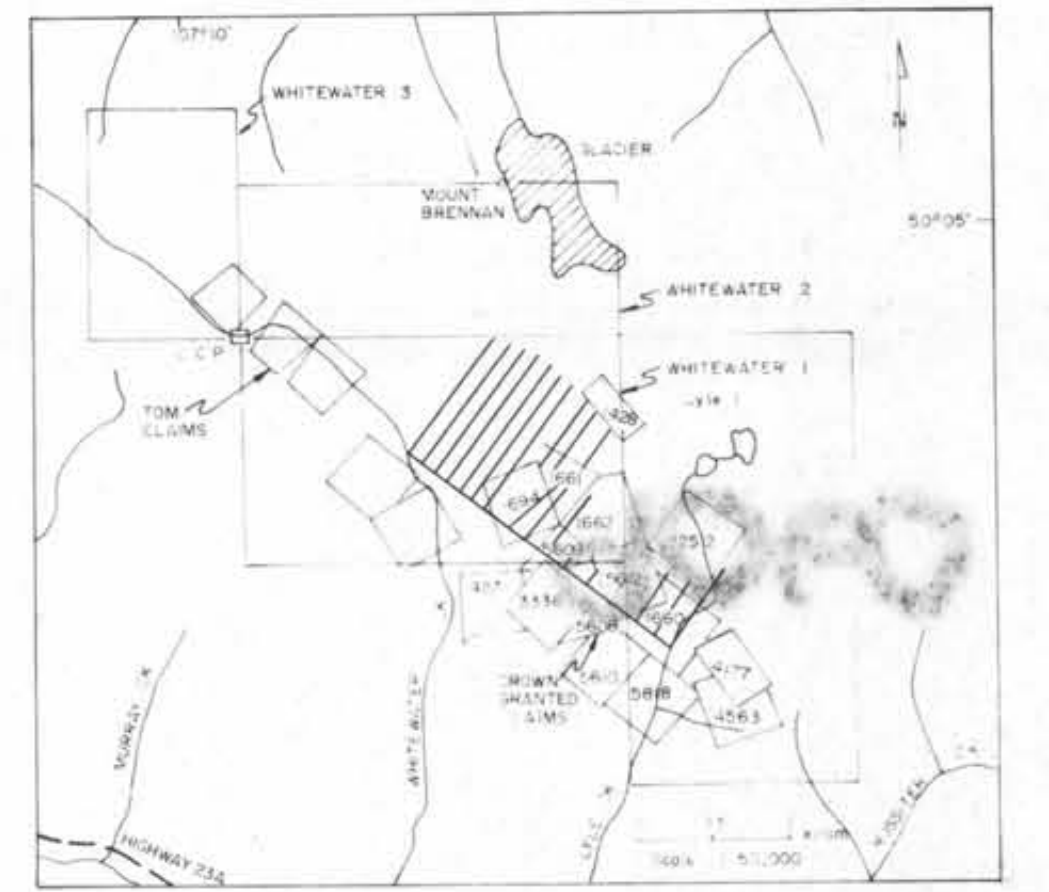
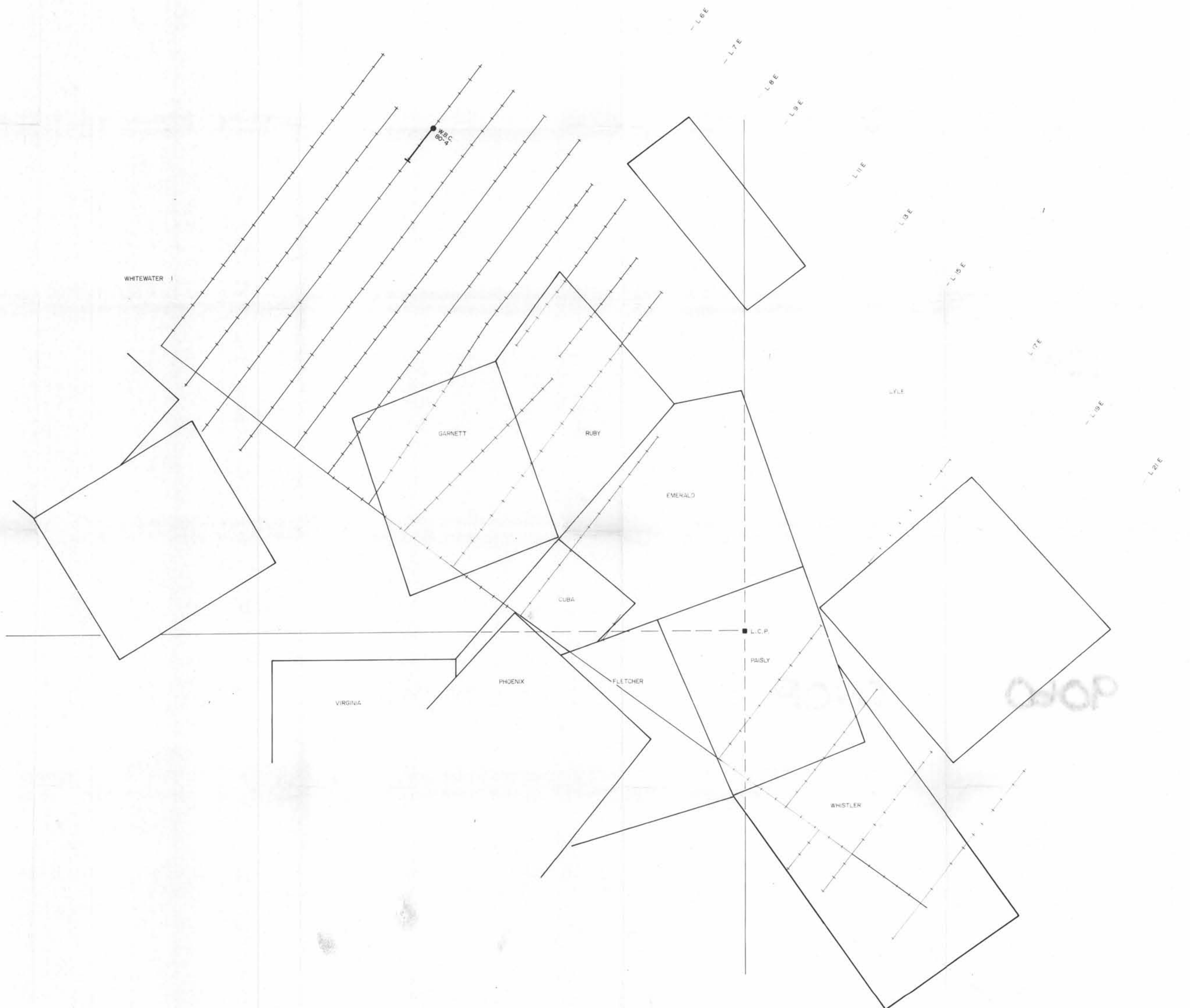
APPENDIX III

QUALIFICATIONS OF D.A. VISAGIE

B. Sc., Geology Major, University of British Columbia, 1976

Continuously employed since graduation with Amoco Canada  
Petroleum Company Ltd., Mining Division, in both  
eastern and western Canada.

*D.A. Visagie*



**LEGEND**  
 ● DIAMOND DRILL HOLE

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**9060**  
 NO. \_\_\_\_\_

**NOTE:**  
 ALL LOCATION DETERMINED BY PACE AND COMPASS METHODS



<b>AMOCO CANADA PETROLEUM CO. LTD.</b>			
MINING DIVISION			
WHITEWATER - SLOCAN PROJECT			
<b>DIAMOND DRILL HOLE</b>			
LOCATION W.B.C. - 80-4			
<b>Drawn By</b>	E. B. WYTRWAL	<b>Scale</b>	1cm = 50m
<b>Date</b>	NOV. 1980	<b>Project No.</b>	78 - C - 003