TAN GROUP: SOIL GEOCHEMISTRY AND ROCK SAMPLING

LIARD MINING DIVISION

TAN 1, 2 and 3 (53 Units)

104P1E, 94M4W

59° 03'N and 127°58'W

OWNER/OPERATOR

AMOCO CANADA PETROLEUM CO. LTD.

MINING DIVISION

#656 - 409 GRANVILLE STREET

VANCOUVER, B.C.

V6C 1T2

Report written by

Harlan Meade

September 5, 1978

Harlan Meade

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INTRODUCTION

The Tan Claim Group consists of 52 units in Tan 1, 2 and 3 mineral claims whose legal corner post is located approximately 7 km south southeast of Burnt Rose Lake in 104 P1E and 94M4W NTS blocks. Access is by helicopter 78 miles (125 km) south southeast from Watson Lake, Yukon Territory. Amoco Canada Petroleum Co. Ltd., Mining Division, is the owner and operator of the Tan Claims.

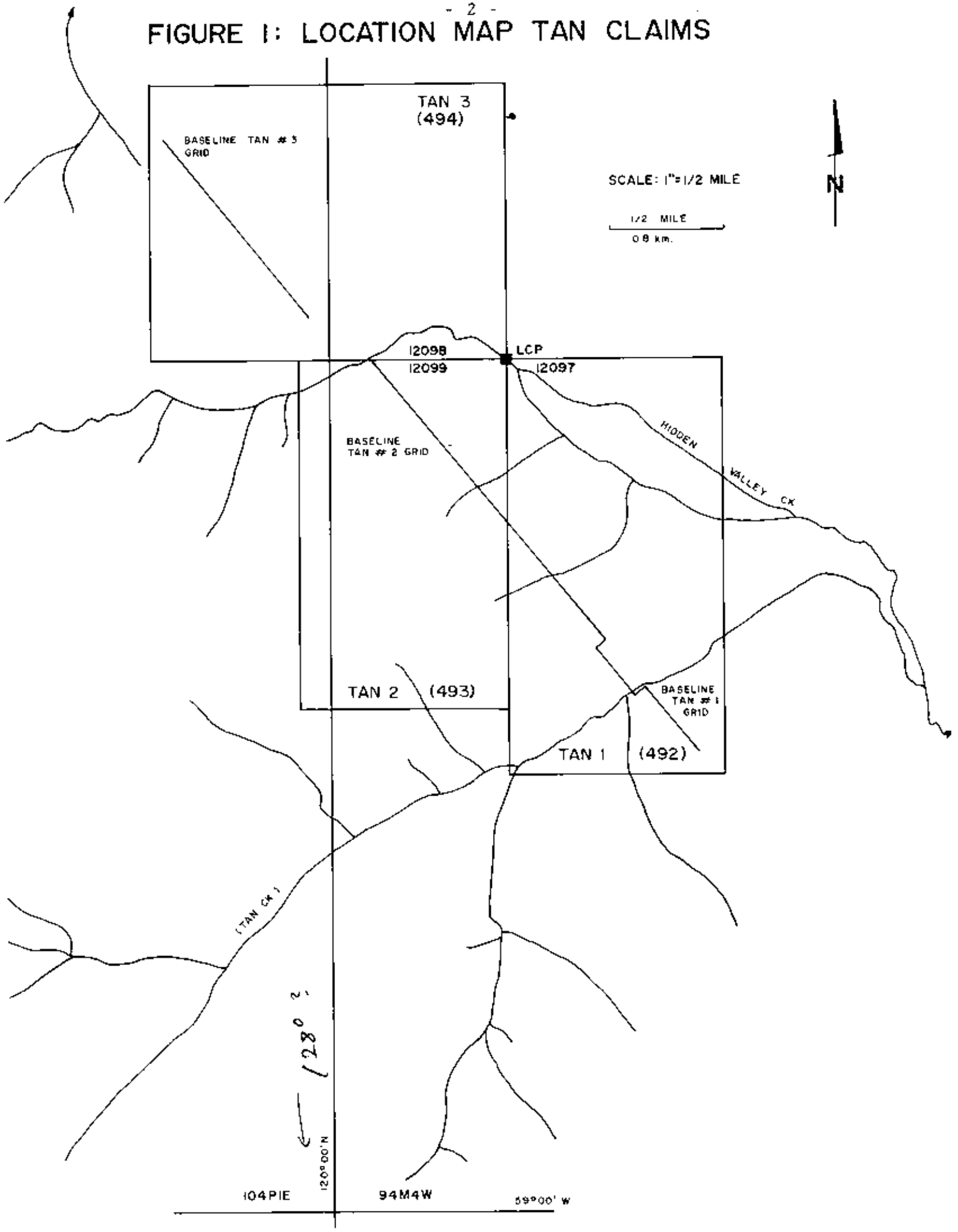
TAN CLAIM GROUP

		Tag. No.	Date Staked	Anniversary Date	Record No.
TAN 1	18 units	12097	Sept. 5, 1977	Sept. 16, 1977	492
TAN 2	15 units	12099	Sept. 5, 1977	Sept. 16, 1977	493
TAN 3	20 units	12098	Sept. 6, 1977	Sept. 16, 1977	494

The claims straddle Hidden Creek valley in a particularly rugged terrain with numerous limestone cliffs and extensive talus. Elevations vary from about 2500 feet (758 m) to slightly over 5000 Feet (1515 m). In this report the other large creek is referred to as Tan Creek.

Sphalerite and galena occur in massive to thinly laminated limestone of the Lower Cambrian Atan Group. Previous work in the area was confined to chalcopyrite-pyrite-siderite veins to the west in Hidden Valley Creek. Sphalerite and galena mineralization in these limestones has not previously been reported.

FIGURE 1: LOCATION MAP TAN CLAIMS



Three soil geochemistry grids, TAN 1, TAN 2 and TAN 3 were located and 413 soil samples taken at 50 meter spacings on 150 meter line spacings. All samples were analyzed for Cu, Pb and Zn. Five anomalous areas were located and correspond to Atan limestone outcrops or talus areas. Hydrozincite, sphalerite and galena occur in these limestones.

GEOLOGY AND METAL OCCURRENCES

The Tan Claims are underlain by rocks of the Cambrian Atan and Cambro-Ordovician Kechika Groups (Gabrielse, 1963) that dip moderate to steep to the southwest. Limestone and underlying slate and phyllite of the Atan Group are repeated by thrust faults to form an upper and lower belt. Limestone of the upper belt is discontinuous along strike, and in fault contact with overlying calcareous phyllites of the Kechika Group. This outcrop pattern is truncated by major valleys of Hidden Valley and Tan Creeks that presumably follow northeast trending faults.

Sphalerite, galena and pyrite occurs as disseminations and small pods in a thinly laminated limestone in the upper part of the limestone unit. Less commonly sphalerite occurs in veinlets and small patches in a limestone having irregularly distributed dolomite patches that impart a brecciated appearance on the weathered surface. These occurrences are similar to those of the Atan claims 8 kilometers to the northwest.

SOIL GEOCHEMISTRY

During the period July 2 to July 11, 1978, 413 soil samples were taken at 50 meter intervals on lines 150 meters apart and 2 traverse lines (Map 1). Line length is variable due to cliffs and talus. The baseline is blazed and flagged and the cross lines and sample sites are flagged. Soil lines below the cliffs are pace and compass flagged lines. Soil samples were taken with a mattock and stored in Kraft paper bags. Samples were generally taken from the B horizon at a depth of 8 to 10 inches although some samples represent fines inbetween talus blocks. Soil development is generally poor with abundant rock fragments and little development of A horizon. The area has been burned in the past 20 years.

All samples were analyzed for Cu, Pb and Zn by Min-En Labs (appendix 1) using a total metal extraction of the minus 80 mesh fraction.

Five anomalies are defined by the 2000 ppm Zn contour in the three grids and correspond to areas of limestone outcrop or talus. Talus and cliff areas on the east sides of the grids make it difficult to delimit the eastern extent of the anomalies and thereby the anomalous rocks. In the instance of the anomaly Tan 2 grid - 21+00N/3+00E, the anomalous soils are underlain by Atan limestone containing little or no sphalerite or hydrozincite. Similarly, very little sphalerite, galena or hydrozincite was observed to explain the downslope anomaly in talus on Tan 2 and

Tan 3 grids. It is suggested that the minor amounts of zinc and lead in these limestones is accumultating in the soils and particularly in fines in talus where much of the material is deteriorated grass and moss. Small amount of pyrite in these rocks has probably resulted in less acid pH conditions in the soils and decreased mobility of zinc and lead, also enhancing zinc and lead accumulation in soils.

The anomalies on lines 15+00N at 1+00W and 1+50W on lines 0+00, 1+50S, 3+00S and 5+00S correspond with limestone outcrop areas having the sphalerite-galena showings that were rock sampled (Table 1).

ROCK SAMPLING

All rock samples for assay are from the Tan 2 grid. (Table 1). Zinc is 5 to 6 times greater than lead and only minor silver is present. Numerous other showings of ½ to 1 percent zinc and lead are present. Sphalerite is generally reddish brown and hydrozincite is ubiquitous in surface mineralization. The higher grade Zn-Pb mineralization of samples 8507 to 8509 from Zone 1, thin rapidly along strike; whereas lower grade Zn-Pb mineralization of samples 8658 to 8663 from Zone 2 is thicker and laterally more persistent.

Table 1 ASSAY FOR ROCK SAMPLES, TAN CLAIMS

Assay No.	Sample	%Pb	%Zn	oz/ton Ag	Grid	Line	Location	Sample Type
55915	3899	.09	.13	.07	2	3+75NW	2+25NE	Grab sample
916	3997	.58	1.58	.10	2	11+10NW	3+10NE	Grab sample
917	8507	3.42	21.20	.11	2	16+25NW	1+70SW	Grab sample Zone 1
918	8508	.89	3.82	.08	2	16+25NW	1+70SW	Grab sample Zone 1
919	8509	.73	3.05	.10	2	16+25NW	1+70SW	Chip sample across 1 meter, Zone 1
920	8658	1.03	4.22	.13	2	4+50SE	1+25NE	Zone 2-Grab sample Central Zone.
921	8659	1.62	2.32	.10	2	4+50SE	1+25NE	Zone 2-Chip sample over entire zone (9m)
922	8660	.12	1.26	.09	2	4+50SE	1+25NE	Zone 2-Chip sample over 2m, East zone
923	8661	.50	3.60	.09	2	4+50SE	1+25NE	Zone 2-Chip sample over 1m, Central zone.
924	8662	.21	1.59	.10	2	4+50SE	1+25NE	Zone 2-Chip sample over 6m, West zone.
925	8663	.03	.04	.11	2	16+50N	2+10W	Carbonate-barite zone-grab sample

BIBLIOGRAPY

Gabrielse, H., 1963, McDame map-area, Cassiar District, British Columbia, Geological Survey Canada, Mem.319, 138 p.

EVALUATION OF WORK

A) SOIL GEOCHEMISTRY

WORK DONE - Soil sampling and cutting baseline.

CLAIMS Tan 1, 2 and 3

DATE CONDUCTED - July 2 to July 11, 1978

SALARIES (Appendix 2)

Dave Dixon	10 man days	@ $31.75	$ 317.50
Mike Thibeault	10 man days	@ $29.80	$ 298.00
Ian McDonald	10 man days	@ $25.00	$ 250.00
Andy Neale	5 man days	@ $32.70	$ 163.50

MEALS

35 man days	@ $14.00/day	$ 490.00

TRANSPORT

206B @ 282.00/hr. (Appendix 3)	
4.7 hrs.	$1325.40

ASSAY COSTS

413 samples @ 2.80 each	$1156.40

SAMPLE SHIPMENT CHARGES

CP Air 4 boxes @$ 16.00 ea. B.C. Yukon Air $136.80	$ 200.80
Subtotal	$4201.60

B) ROCK SAMPLING

WORK DONE - grab and chip smaples

DATE CONDUCTED - July 4, 1978

SALARY	1 man day @ $47.10/day	$47.10
MEALS	1 man day @ $14.00/day	$14.00
ASSAY COSTS		
	11 samples @ $17.00/sample	$187.00
	Rock Sampling Subtotal	$248.10

CREDIT OF ASSESSMENT WORK

Subtotal Soil Sampling	$4201.60
Subtotal Rock Sampling	$ 248.10
Report Preparation Costs	$ 400.00
Total Expenditure	$4849.70
Withdrawal PAC Account Contr.	$ 450.30
TOTAL	$5300.00

APPORTIONMENT OF EXPENSES TAN 1 & 2; TAN 3

1) TOTAL NO. SAMPLES TAN 1, 2 & 3 413

TOTAL NO. SAMPLES TAN 1 & 2 265

TOTAL NO. SAMPLES TAN 3 148

2) APPORTIONMENT OF WORK

TAN 1 & 2	265/413 x $4201.60	=	$2695.94
TAN 3	148/413 x $4201.60	=	$1505.66
	TOTAL		$4201.60

TAN 1 & 2 ASSESSMENT CREDIT

APPORTIONMENT OF WORK	$2695.94	
ROCK SAMPLING	$ 248.10	
REPORT PREPARATION	$ 200.00	
	$3144.04	$3144.04

TAN 3 ASSESSMENT CREDIT

APPORTIONMENT OF WORK	$1505.66	
REPORT PREPARATION	$ 200.00	
	$1705.66	$1705.66

TOTAL TAN 1,2 & 3 $4849.70

APPENDIX 1 FEE SCHEDULE AND PROCEDURE FOR ASSAYS AND GEOCHEMICAL ANALYSES

Assays and geochemical analyses were conducted by:

Min-En Laboratories Ltd.,
705 West 15th Street,
North Vancouver, B.C.
V7M 1T2

Geochemical Analyses

Cu, Pb and Zn	$2.45
Sample Preparation	$ .35
Total	$2.80

Assays

Pb	$5.00
Zn	$5.00
Ag	$5.00
Sample Preparation	$2.00/sample

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 HNO_3 and $HClO_4$ 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 CH_2H_2-Air flame combination but the Molybdenum determination is carried out by C_2H_2-N_2O 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 Gutzit method using Ag $CS_2N(C_2H_5)_2$ 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.

APPENDIX 2 ADDRESSES OF PERSONS CONDUCTING WORK

Dave Dixon	17 N. Ellesmere, Burnaby, B.C. V5B 1J9
Andy Neale	4611 Westview Drive, Terrace, B.C. V8G 2S7
Ian McDonald	273 Maple Grove Drive, Oakville, Ontario L6J 4V6
Mike Thibeault	739 Falconbridge Rd., R.R. #1, Box 3 Sudbury, Ontario P3A 4R7
Shaun Dykes	54 Clergy Street, Kingston, Ontario K7L 3K7

APPENDIX 3 UNIT COST PER HOUR FOR HELICOPTER, 1978

Bell 206B - Leased from Kenting Helicopters, Calgary

Contract Cost	$240.00/hr
Fuel Cost (@ 22 gals/hr.)	$ 41.80/hr
TOTAL COST	$281.80

APPENDIX 4 QUALIFICATIONS OF H. D. MEADE

B.SC. Honours Geology, University of British Columbia, 1972

Ph.D. Geology, University of Western Ontario, 1977

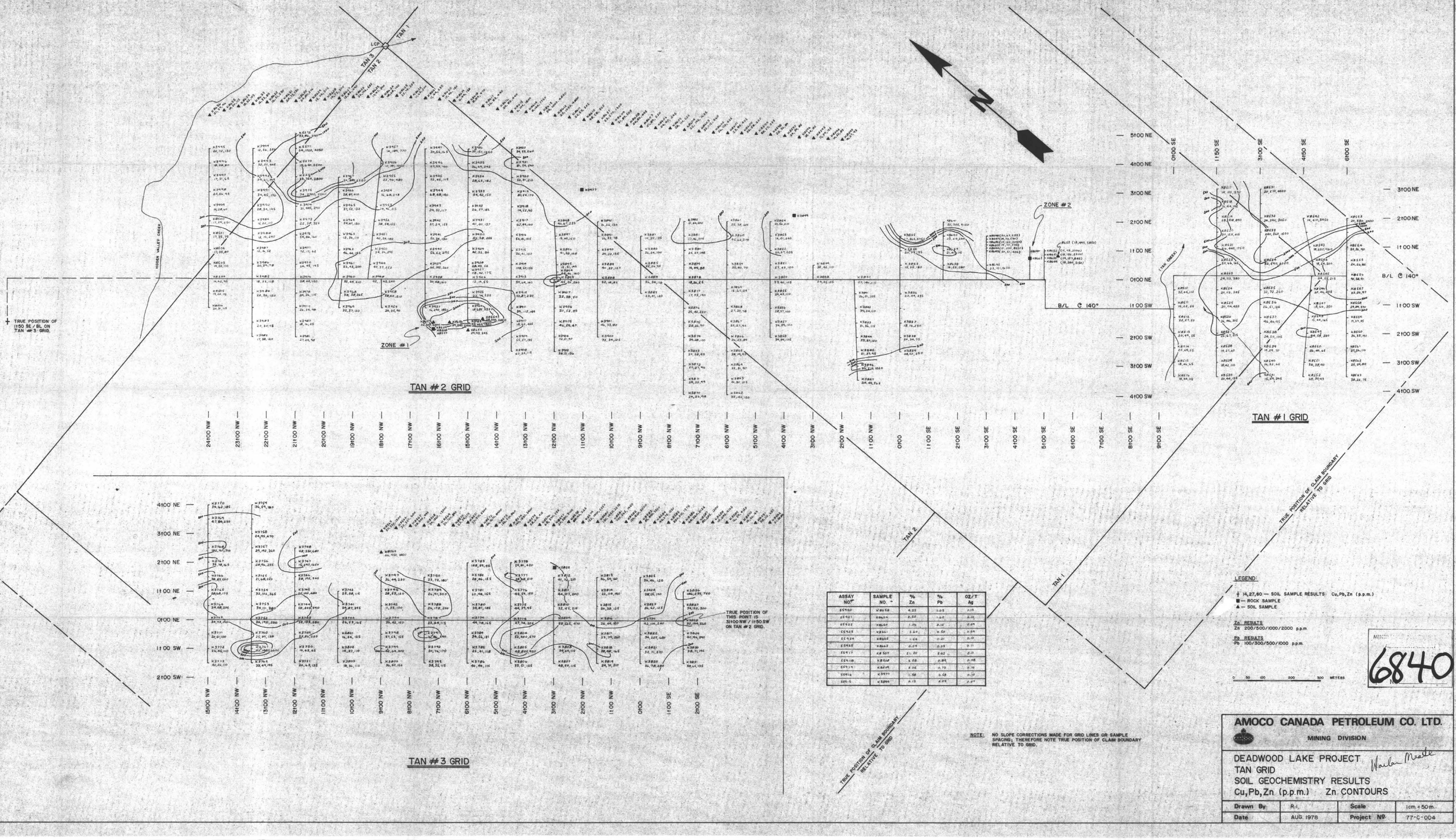
Member of Geological Association of Canada

Report written by

Harlan Meade

September 5, 1978

Harlan Meade



ASSAY NO.	SAMPLE NO.	% Zn	% Pb	OZ/T Ag
65960	W6658	4.22	1.05	n.s.
65961	W6654	2.50	1.62	0.15
65962	W6656	1.76	0.32	0.09
65963	W6661	1.64	0.50	0.09
65964	W6662	1.09	0.21	0.10
65965	W6663	0.09	0.03	0.11
65967	K8507	21.20	2.02	0.11
65968	K8508	5.28	0.89	0.08
65969	K8509	9.05	0.73	0.16
65970	W3979	1.48	0.48	0.10
65971	W3984	0.13	0.09	0.07

NOTE: NO SLOPE CORRECTIONS MADE FOR GRID LINES OR SAMPLE SPACING, THEREFORE NOTE TRUE POSITION OF CLAIM BOUNDARY RELATIVE TO GRID.

LEGEND:

+ 14,27,60 — SOIL SAMPLE RESULTS: Cu,Pb,Zn (p.p.m.)
■ — ROCK SAMPLE
▲ — SOIL SAMPLE

Zn RESULTS
Zn 200/500/1000/2000 p.p.m.

Pb RESULTS
Pb 100/300/500/1000 p.p.m.

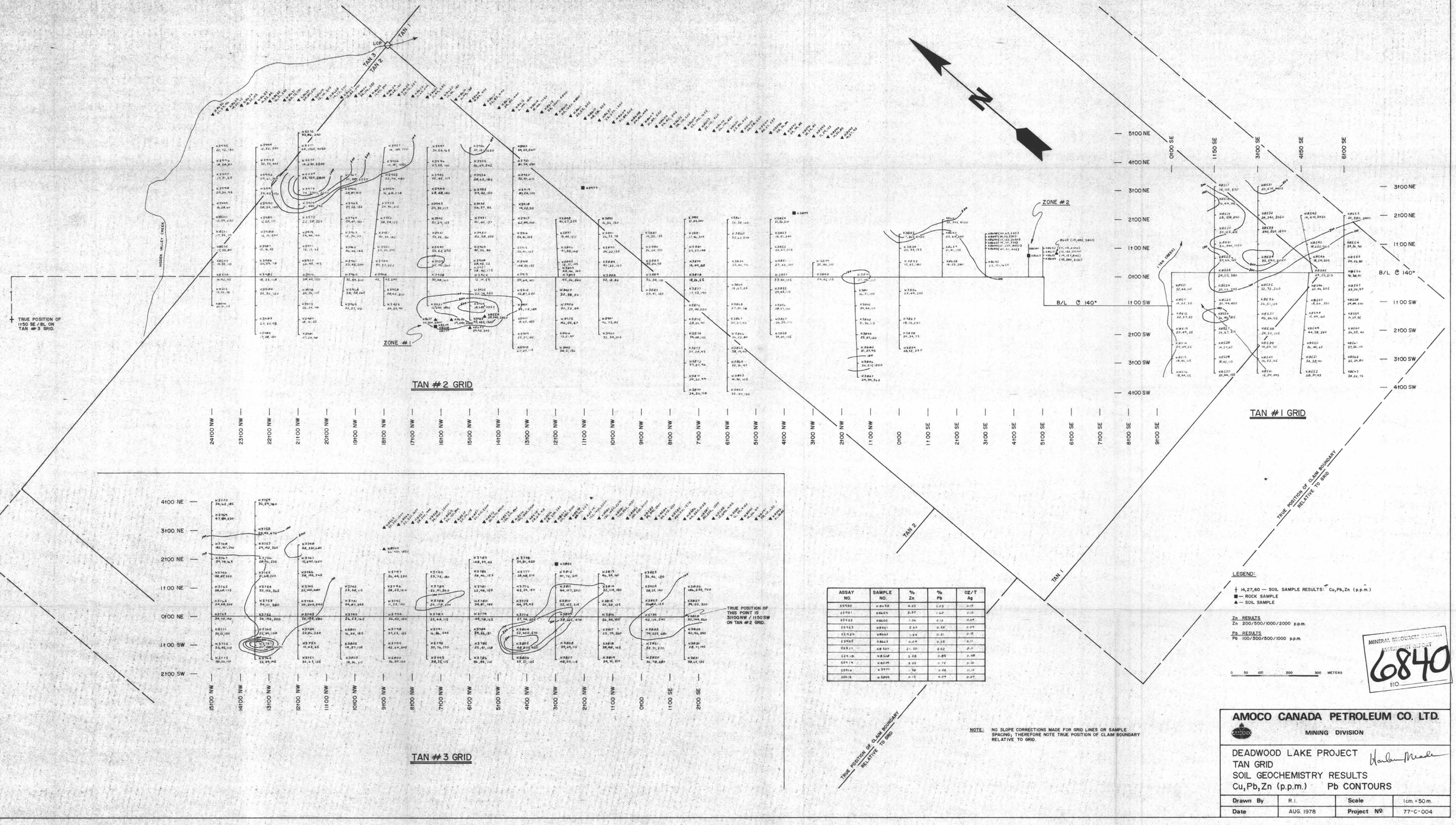
0 50 100 200 300 METERS

MINING RECORDER
6840

AMOCO CANADA PETROLEUM CO. LTD.
MINING DIVISION

DEADWOOD LAKE PROJECT
TAN GRID
SOIL GEOCHEMISTRY RESULTS
Cu,Pb,Zn (p.p.m.) Zn CONTOURS

Drawn By	R.I.	Scale	1cm = 50m.
Date	AUG. 1978	Project No.	77-C-004



ASSAY NO.	SAMPLE NO.	% Zn	% Pb	OZ/T Ag
55980	K6478	4.22	1.05	0.19
55981	K6479	2.39	1.62	0.35
55982	K6480	1.86	0.12	0.09
55983	K6481	5.40	0.58	0.24
55984	K6482	1.64	0.21	0.10
55985	K6483	0.09	0.08	0.01
55986	K6507	21.20	5.62	0.11
55987	K6508	1.28	0.89	0.08
55988	K6509	3.05	0.73	0.10
55989	K3977	1.58	0.68	0.18
55990	K3895	0.13	0.04	0.09

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LEGEND:

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Zn RESULTS
Zn 200/500/1000/2000 p.p.m.

Pb RESULTS
Pb 100/300/500/1000 p.p.m.

0 50 100 200 300 METERS

MINERAL RESOURCES DIVISION ASSESSMENT REPORT NO. 6840

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DEADWOOD LAKE PROJECT
TAN GRID
SOIL GEOCHEMISTRY RESULTS
Cu, Pb, Zn (p.p.m.) Pb CONTOURS

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