

GEOLOGY AND GEOCHEMISTRY ON THE ATO CLAIM
SWANNELL RANGE
NORTH CENTRAL B.C.

Specific Claims: ATO I #7948 (10)
ATO II #7949 (10)
ATO III #7950

Mining Division: Omineca

NTS: 93N/14

Latitude: 55° 56'

Longitude: 125° 16'

Owner: Cathedral Gold Corporation

Operator: Cathedral Gold Corporation

Author: Alan B. Taylor

Date: September 1987

LOG NO: 0106	RD.
ACTION:	
FILE NO:	

FILMED

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,830

MINISTRY OF ENERGY, MINES
AND PETROLEUM RESOURCES
Rec'd DEC 23 1987
SUBJECT _____
FILE _____
VANCOUVER, B.C.

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Appendix I

Sample Preparation and Analysis

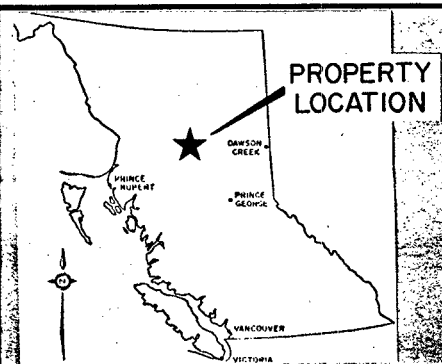
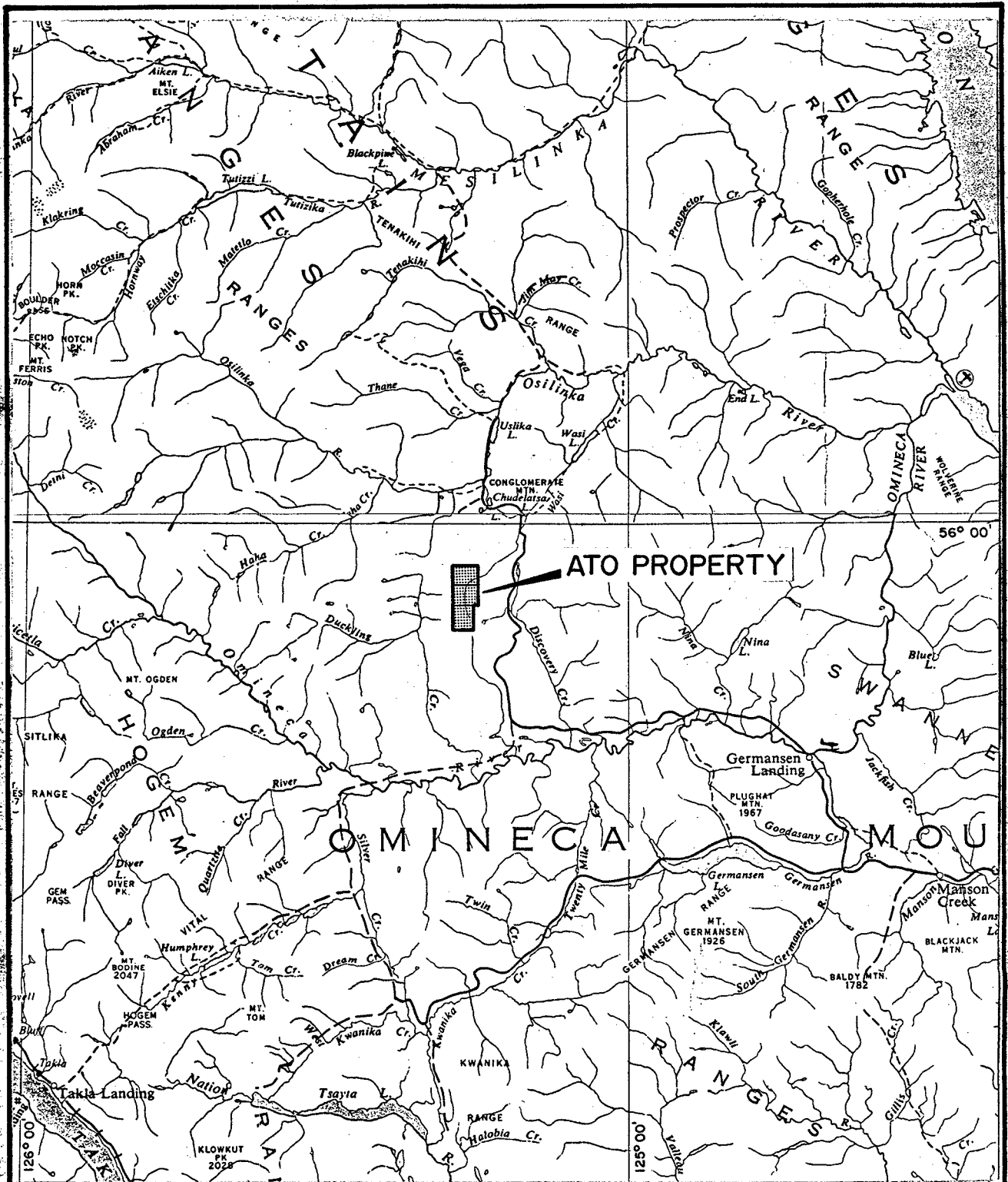
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Figure 3: Geology and Sample Location Map	In Back Pocket

SUMMARY

The ATO group of claims are located on the Omineca mountains north-central British Columbia and consist of 60 units. Geologically the claims straddle the boundary between the Triassic Takla andesitic volcanics and the Jurassic Hogem batholith intrusive suite. It is the contact that is of economic interest since mineral concentration is found along it to the south.

Numerous soil and rock samples collected show small gold anomalies that need to be followed up. One intrusive rock that was collected ran a significant 29,130 ppb Au and requires immediate follow-up to ascertain the nature and origin of the mineralization. Numerous copper anomalies were also located and should be examined in more detail.



CATHEDRAL GOLD CORPORATION

ATO PROPERTY

FIGURE I

N.T.S. 93N/14

LOCATION MAP

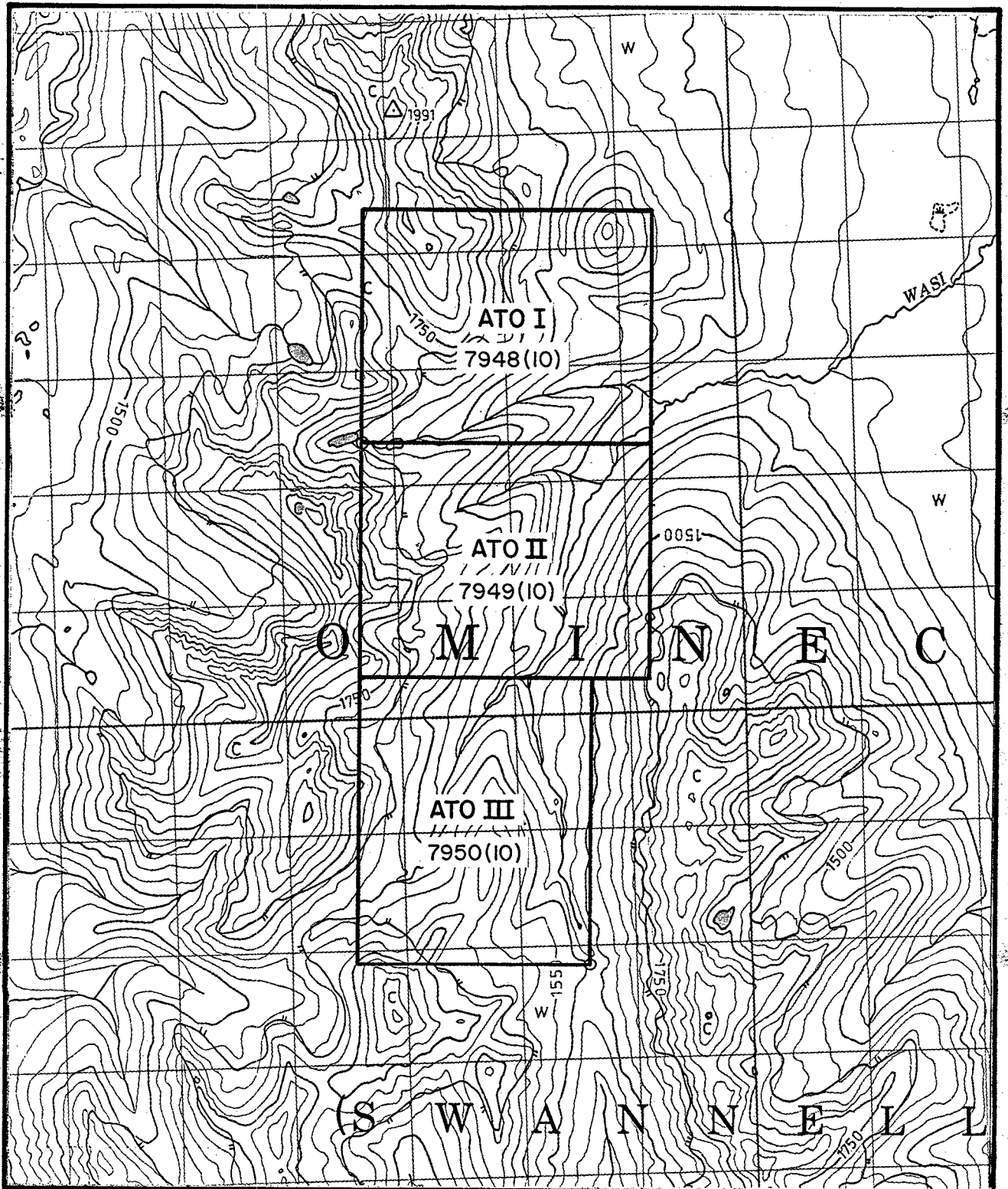


SCALE: 1:600 000

GEOLOGIST: A. TAYLOR

DATE: NOVEMBER 1987

DRAWN BY: J. CORKUM



CATHEDRAL GOLD CORPORATION

ATO PROPERTY

FIGURE 2

N.T.S. 93N/14

CLAIM MAP



SCALE: 1:50 000

GEOLOGIST: A. TAYLOR

DATE: NOVEMBER 1987

DRAWN BY: J. CORKUM

1.1 General Setting and Location

The ATO group of claims are located in the Omineca mountains, Swannell Range north-central British Columbia (refer to Figure 1 and 2) approximately 40km northwest of Germansen Landing. The road from Germansen Landing to Uslika Lake comes to within 5km to the east of the property.

Physiographically the area consists of valleys at 1100m which give way to alpine type vegetation on sharp ridges which rise up to 2000m. Access to the property is presently by helicopter.

2.1 Property

The ATO property consists of 3 claim blocks which are 100% owned and operated by Cathedral Gold Corporation. The claims have been grouped and consist of the following:

<u>Claim Name</u>	<u>Record Number</u>	<u>Number of Units</u>	<u>Expiry Date</u>
ATO I	7948	20	Oct. 3, 1987
ATO II	7949	20	Oct. 3, 1987
ATO III	7950	20	Oct. 3, 1987

3.1 Work Completed

A helicopter supported fly camp was established on the ATO claims (see Figure 3) from July 18 through July 23, 1987. A total of 144 soil samples were collected from the B horizon approximately 15-20cm depth where possible. These soils were collected along contour lines at 50m intervals and also beside anomalous drainages. All sample locations were flagged in the field. A total of 53 rocks from both outcrop and float were also analysed.

All samples were analysed by Acme Labs of Vancouver for 30 elements by ICP methods and gold by atomic absorption (refer to Appendix 1 for method).

4.1 Interpretation

The claims are apparently underlain by the Hogem batholith - Takla Volcanic contact which is a somewhat irregular contact due to the presence of numerous pendants, dykes and silts and various hybrid intrusive phases assimilating wall rock material. Overall Takla rocks consist of fine to porphyritic andesite in contact with intrusive diorite of the Hogem suite.

Of the 53 rocks collected only one (ATO-87-5R) ran significantly in gold (29,130 ppb) and this needs to be followed up in detail. This rock is a malachite stained intrusive diorite with visible chalcopyrite. A number of other intrusive rocks carried significant copper contents. Of the soils collected a total of 8 ran greater than 100 ppb Au and these areas should also be further investigated.

RECOMMENDATIONS

1. Follow-up sampling and detailed mapping to locate origin of anomalous boulder (5R).
2. Further soil samples in the southern part of the claim to further evaluate the mineral potential.

BIBLIOGRAPHY

Armstrong, J.E. 1949: Fort St. James Map-Area, British Columbia Map 907A, Geological Survey of Canada, Memoir 252.

Garnett, J. 1974: Geology and Copper-Molybdenum Mineralization in the Southern Hogen Batholith, North-Central British Columbia, CIM Bulletin, September, 101-106.

Garnett, J.A. 1978: Geology and Mineral Occurences of the Southern Hogen Batholith, B.C. Department of Mines and Petroleum Resources, Bulletin #70.

Tipper, H.W., Campbell, R.B., Taylor, G.C. and Stott, D.F. 1979: Parsnip River British Columbia. Map 1424A, Sheet 93, G.S.C.

ATO PROPERTY - COST STATEMENT

Field Personnel:

AT July 23	1 @ \$165 =	\$ 165
MB July 18-23	6 @ \$130 =	780
TE July 18-23	6 @ \$125 =	750
OJ July 18-23	6 @ \$95 =	570
Food	19 @ \$40/day	<u>760</u>

Total Field Personnel Costs = \$ 3,025

Transportation:

Helicopter 5 hrs. @ \$425/hr. plus fuel and oil	\$2,600
Truck (Company)	<u>300</u>

Total Transportation Costs = 2,900

Analytical Costs:

144 Soils @ \$11.00	\$1,584
53 Rocks @ \$13.25	703
Shipping	<u>39</u>

Total Analytical Costs = 2,326

Miscellaneous:

Camp Supplies	\$ 500
Report Writing	2,000
Expense Account (AT MB)	800
Expediting	<u>500</u>

Total Miscellaneous + 3,800


GRAND TOTAL \$ 12,051

CERTIFICATE

I, Alan B. Taylor, geologist, residing at 15-8720 Maplegrove Crescent in the Municipality of Burnaby, Province of British Columbia, hereby certify that:

1. I graduated from Brock University in 1979 with an Honours Bachelor of Science in Geology.
2. I graduated from the University of Western Ontario in 1984 with a Master of Science in Geology.
3. I have worked for various mining companies and government geological surveys since 1977.
4. I am presently a permanent staff geologist with Imperial Metals Corporation of 800-601 West Hastings Street, in the City of Vancouver, Province of British Columbia.
5. The work described in this report on the ATO claims was undertaken under my direct supervision.

DATED at the City of Vancouver this 23 day of December, 1987.


Alan B. Taylor, Geologist

APPENDIX I

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG.C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE CA P LA CR MG BA TI B M AND LIMITED FOR NA AND K. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: P1-2 ROCK P3-6 SOIL AU# ANALYSIS BY AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: AUG 10 1987

DATE REPORT MAILED: Aug 17/87

ASSAYER: D. Joyce DEAN TOYE, CERTIFIED B.C. ASSAYER

IMPERIAL METALS PROJECT-ATO-7101

File # 87-3148

Page 1

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	M	AU#
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPB
ATO-87-1R	1	279	894	17	1.7	39	17	193	2.92	5	5	ND	3	42	1	2	2	52	2.51	.044	3	22	.63	11	.21	13	2.77	.19	.03	1	11
ATO-87-2R	1	377	29	16	.6	43	11	206	2.05	5	5	ND	2	68	1	3	2	47	1.37	.037	2	53	.46	20	.24	6	1.19	.16	.06	1	1
ATO-87-3R	1	277	164	37	.3	20	21	422	3.98	2	5	ND	2	56	1	2	2	100	1.88	.109	5	23	1.22	26	.26	20	1.96	.26	.13	1	5
ATO-87-4R	3	193	19	19	.2	38	16	175	3.79	7	9	ND	2	126	1	2	2	53	1.96	.058	4	27	.36	12	.24	10	2.16	.25	.04	1	3
ATO-87-5R	3	14530	66	30	2.3	3	6	160	3.59	2	12	16	1	8	1	2	2	19	.11	.012	2	1	.38	24	.01	4	1.56	.05	.09	11	29130
ATO-87-6R	1	123	14	26	.1	5	10	350	2.52	2	5	ND	2	122	1	2	2	54	1.79	.102	6	5	.47	48	.11	2	1.84	.15	.08	1	7
ATO-87-7R	1	610	47	13	.1	75	32	226	2.88	25	5	ND	2	21	1	2	2	108	4.73	.058	5	20	.90	2	.22	10	3.57	.04	.02	1	15
ATO-87-8R	1	2718	76	283	1.6	6	47	1971	3.12	10	5	ND	2	25	2	2	2	47	1.06	.127	8	15	1.30	19	.05	8	1.80	.07	.07	1	2
ATO-87-31R	3	376	38	45	.6	7	14	658	5.14	16	5	ND	2	153	1	2	2	178	.80	.166	8	9	1.37	88	.16	22	1.63	.06	.10	1	91
ATO-87-61T	1	27	13	105	.1	30	18	1214	6.53	3	5	ND	3	21	1	2	2	65	1.31	.097	28	67	2.21	128	.01	7	3.20	.01	.27	1	1
ATO-87-62T	14	1043	24	27	.1	23	37	301	6.46	2	5	ND	2	58	1	2	2	207	.98	.082	4	44	1.93	131	.54	9	2.09	.08	.81	1	31
ATO-87-63T	2	322	9	13	.1	64	23	163	3.48	3	5	ND	2	19	1	2	2	43	.84	.037	3	44	.26	19	.20	4	.71	.09	.07	1	19
ATO-87-64T	1	30	42	7	.1	7	3	141	1.23	4	5	ND	1	34	1	6	2	17	.80	.008	2	12	.17	13	.05	8	1.08	.05	.08	1	2
ATO-87-65T	1	110	9	13	.1	29	10	204	1.65	3	5	ND	1	81	1	2	2	31	2.17	.033	3	16	.35	38	.22	3	1.99	.23	.04	1	1
ATO-87-66T	1	152	23	11	.1	19	10	153	2.42	3	5	ND	1	43	1	2	2	35	1.53	.071	4	16	.29	23	.19	3	1.80	.28	.04	1	3
ATO-87-67F	1232	2476	10	15	.1	3	7	250	3.80	7	5	ND	6	34	1	2	2	66	.58	.104	8	6	.19	39	.09	29	.42	.06	.09	6	32
ATO-87-68F	6	1701	25	26	.1	34	32	272	6.12	2	5	ND	2	131	1	2	2	167	1.15	.105	6	90	1.31	54	.28	7	1.64	.07	.21	1	33
ATO-87-69T	5	60	13	44	.1	20	12	543	4.60	2	5	ND	3	161	1	2	8	124	3.30	.075	3	39	1.46	895	.12	15	.82	.05	.35	1	2
ATO-87-70T	1	929	18	15	.1	27	9	125	3.27	5	5	ND	2	95	1	2	5	258	1.00	.158	5	90	.38	21	.11	6	.62	.06	.05	1	185
ATO-87-71R	6	842	30	50	2.9	100	75	214	15.95	307	5	ND	2	24	1	2	2	170	.84	.052	3	97	1.13	28	.33	11	2.31	.03	.08	1	6
ATO-87-72R	10	105	19	24	.1	15	13	234	4.37	28	5	ND	1	65	1	2	2	69	1.29	.067	4	14	.37	13	.36	17	1.59	.16	.04	1	4
ATO-87-73R	2	98	11	25	.2	7	7	207	4.44	18	5	ND	1	12	1	2	2	85	5.72	.047	3	15	.31	3	.19	14	4.33	.01	.01	1	11
ATO-87-74R	1	103	12	28	.1	70	23	204	4.07	24	5	ND	1	62	1	2	2	64	1.61	.046	2	77	.63	15	.22	22	2.00	.17	.05	1	1
ATO-87-75R	4	39	9	46	.1	11	6	199	2.45	18	5	ND	1	93	1	2	2	41	3.62	.021	2	20	.30	5	.06	2	4.84	.01	.03	1	5
ATO-87-76R	1	53	21	32	.1	2	8	497	2.78	5	5	ND	1	106	1	2	3	66	2.04	.097	6	4	.62	28	.15	2	2.06	.15	.07	1	65
ATO-87-77R	9	136	13	26	.1	83	22	178	4.49	30	6	ND	1	38	1	2	2	86	1.51	.035	3	39	.41	9	.24	4	1.42	.15	.04	1	10
ATO-87-78R	5	77	10	32	.1	18	9	128	2.01	6	10	ND	1	247	1	2	2	30	2.74	.053	3	9	.12	8	.19	22	3.06	.36	.03	1	2
ATO-87-79R	2	115	17	15	.1	24	16	193	3.55	35	5	ND	1	47	1	2	2	77	.96	.050	3	27	.60	106	.35	14	1.39	.19	.23	1	3
ATO-87-80R	1	314	15	26	.1	12	15	389	4.86	7	5	ND	2	24	1	2	2	70	3.02	.042	3	14	.55	7	.22	10	2.95	.03	.03	1	4
ATO-87-81T	1	19	14	14	.1	1	2	2315	.74	2	7	ND	1	226	1	2	7	3	34.29	.003	2	1	.14	312	.01	2	.06	.01	.02	1	1
ATO-87-82T	32	21	10	2	1.3	2	2	46	2.03	2	5	ND	1	19	1	2	3	5	.02	.017	2	3	.01	107	.01	2	.16	.02	.20	1	350
ATO-87-83T	72	54	27	7	3.5	1	5	122	4.13	2	5	ND	1	28	1	2	5	12	.62	.043	3	3	.06	115	.03	2	.20	.02	.32	1	1320
ATO-87-84T	1	349	9	23	.1	97	23	138	3.45	6	5	ND	1	207	1	2	2	31	3.64	.069	3	83	.55	49	.23	6	4.47	.30	.08	1	3
ATO-87-85F	1	155	15	11	.3	1	7	122	3.19	9	5	ND	1	13	1	2	2	41	.42	.058	6	5	.28	43	.09	2	.79	.06	.11	1	46
ATO-87-86R	1	125	4	20	.1	25	15	162	2.55	2	5	ND	1	25	1	2	2	47	.98	.046	3	22	.39	11	.30	8	.96	.12	.04	1	3
ATO-87-87R	1	141	13	16	.1	44	17	110	3.04	2	5	ND	2	27	1	2	2	38	1.51	.036	3	15	.17	19	.26	2	1.22	.18	.03	1	8
STD C/AU-R	17	57	40	132	7.0	68	28	906	3.95	38	26	7	37	50	17	16	20	56	.47	.084	37	59	.88	176	.08	32	1.86	.06	.13	14	485

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	W	AU#
	PPH	PPH	PPH	PPH	PPH	PPH	PPH	PPH	%	PPH	PPH	PPH	PPH	PPH	PPH	PPH	PPH	PPH	%	%	PPH	PPH	%	PPH	%	PPH	%	%	%	PPH	PPH
ATO-87-88R	3	158	10	36	.1	33	18	233	2.91	2	5	ND	2	25	1	2	2	58	.80	.052	2	29	.42	15	.29	2	.77	.12	.06	1	6
ATO-87-89F	1	78	12	12	.1	5	7	186	2.41	2	5	ND	5	142	1	2	2	12	3.15	.030	14	4	.28	11	.17	3	3.82	.32	.05	1	2
ATO-87-90T	1	1017	12	10	.1	46	39	238	4.31	2	5	ND	3	36	1	2	2	52	2.32	.084	6	74	.44	18	.22	7	2.15	.16	.10	3	3
ATO-87-91T	1	61	7	7	.1	7	3	178	1.24	2	5	ND	2	35	1	2	2	49	.64	.029	4	10	.44	31	.15	7	.68	.04	.09	1	1
ATO-87-92T	1	93	9	11	.1	4	7	220	4.20	2	5	ND	2	35	1	2	2	68	.74	.077	7	5	.19	90	.10	2	.42	.06	.11	1	4
ATO-87-93T	14	1112	19	22	.2	154	45	232	5.59	2	5	ND	1	66	1	2	2	43	1.29	.063	2	81	1.02	9	.13	4	1.31	.08	.05	1	21
ATO-87-94T	18	90	46	57	1.9	10	12	969	4.79	71	5	ND	1	29	1	2	4	123	1.13	.178	9	14	.84	63	.03	8	1.11	.03	.27	1	215
ATO-87-95T	10	99	37	53	1.9	12	15	1887	4.86	112	5	ND	2	40	1	2	5	98	2.49	.161	7	9	1.19	31	.01	2	1.17	.02	.16	1	370
ATO-87-96T	1	26	10	61	.1	2	9	3004	3.82	2	5	ND	1	104	1	2	2	24	13.31	.022	14	2	3.53	23	.01	2	.23	.01	.03	1	2
ATO-87-97T	17	36	152	28	7.7	3	6	236	5.66	2	5	ND	1	60	1	2	31	65	.07	.076	3	5	.57	62	.02	4	.62	.07	.31	1	15
ATO-87-98R	8	254	26	28	.5	4	13	266	14.99	4	6	ND	1	210	1	2	11	135	.34	.160	7	6	.47	209	.05	21	.77	.06	.23	1	21
ATO-87-99R	24	78	32	24	.6	3	8	200	8.49	38	6	ND	1	382	1	2	12	85	.14	.121	6	5	.41	135	.01	15	.61	.09	.34	1	17
ATO-87-100T	7	20	19	30	.1	4	4	249	4.40	9	5	ND	4	27	1	2	6	215	.24	.099	9	11	.74	51	.18	2	.71	.02	.21	2	117
ATO-87-101T	1	48	21	107	.1	5	16	1347	5.75	2	5	ND	1	47	1	2	2	122	2.11	.107	7	5	1.96	92	.13	2	2.19	.06	.11	1	5
ATO-87-102R	17	40	32	31	.2	3	11	343	5.60	2	5	ND	2	75	1	2	3	127	.27	.128	6	7	.66	72	.20	3	.84	.03	.18	2	225
ATO-87-103F	458	10616	45	63	40.0	3	25	727	33.19	2	5	ND	1	120	1	4	2	94	.44	.028	15	1	.22	12	.01	2	1.21	.01	.03	1	880
ATO-87-104T	4	13703	23	21	3.6	19	20	422	9.27	2	5	ND	2	160	1	2	2	230	1.18	.184	11	137	.62	537	.18	8	1.10	.06	.09	2	64
STD C/AU-R	18	61	38	132	7.3	71	29	1018	3.98	39	22	8	40	52	19	17	20	60	.48	.089	40	61	.88	179	.09	34	1.88	.06	.14	12	500

SAMPLE#	NO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	W	AU#
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM
ATO-87-1 1SL	1	185	11	62	.1	27	14	526	5.15	14	5	ND	2	107	1	2	2	142	.68	.094	6	59	.90	114	.11	4	2.64	.03	.05	1	9
ATO-87-1 2SL	1	155	14	126	.1	18	17	1486	4.26	52	5	ND	2	104	1	2	2	123	.81	.096	9	41	1.02	84	.14	4	3.21	.03	.05	1	2
ATO-87-1 3SL	1	101	5	70	.1	16	8	370	3.01	9	5	ND	1	94	1	2	2	78	.46	.085	7	28	.57	111	.07	2	2.91	.02	.05	1	1
ATO-87-1 4SL	1	146	15	112	.1	28	20	478	3.69	18	5	ND	1	140	1	2	2	85	.97	.075	6	45	.93	57	.12	3	4.54	.04	.05	1	1
ATO-87-1 5SL	1	137	12	91	.1	34	13	585	3.90	47	5	ND	1	112	1	2	2	99	2.11	.152	15	64	1.31	31	.08	2	5.13	.05	.06	1	2
ATO-87-1 6SL	1	113	2	79	.1	33	20	1117	3.16	34	5	ND	1	328	1	2	2	82	2.10	.144	11	41	.96	58	.07	2	5.66	.04	.10	1	5
ATO-87-1 7SL	1	99	5	85	.1	23	14	616	4.67	38	5	ND	1	184	1	2	2	103	1.32	.115	10	36	.83	55	.09	2	5.86	.04	.06	1	10
ATO-87-1 8SL	3	139	2	89	.1	33	19	400	4.91	45	5	ND	1	149	1	2	2	92	.97	.081	5	36	1.24	59	.14	2	7.23	.03	.05	1	7
ATO-87-1 9SL	1	151	3	103	.2	48	17	664	4.23	21	5	ND	1	215	1	2	5	93	.96	.086	3	72	1.46	85	.11	4	6.19	.04	.10	1	5
ATO-87-1 10SL	3	213	9	106	.1	65	41	1446	5.61	56	5	ND	1	302	1	2	2	105	1.77	.056	6	45	1.24	53	.12	2	5.59	.03	.10	1	20
ATO-87-1 11SL	1	173	12	108	.1	39	30	1561	4.66	42	5	ND	1	234	1	2	2	92	1.31	.085	4	36	.93	69	.08	2	5.58	.04	.09	1	69
ATO-87-1 12SL	1	150	7	139	.2	43	30	1503	4.32	38	5	ND	2	190	1	2	2	82	1.72	.083	6	36	.84	45	.09	7	5.92	.03	.09	1	19
ATO-87-1 13SL	1	128	14	126	.2	34	21	725	4.41	36	5	ND	2	126	1	2	2	85	1.01	.073	8	38	.98	46	.12	2	4.14	.03	.06	1	43
ATO-87-1 14SL	1	95	11	92	.1	31	16	730	4.03	24	5	ND	2	91	1	2	2	78	.75	.115	13	38	.81	83	.10	4	4.11	.02	.06	1	18
ATO-87-1 15SL	1	86	16	89	.1	30	15	513	3.67	18	5	ND	1	82	1	2	2	66	.69	.083	10	32	.79	88	.08	2	3.20	.02	.07	1	62
ATO-87-1 16SL	1	123	4	67	.1	31	15	397	3.71	27	5	ND	1	112	1	2	3	71	.74	.073	8	33	.87	63	.12	5	3.30	.03	.06	1	520
ATO-87-1 17SL	1	78	13	81	.1	24	12	442	3.21	20	5	ND	1	133	1	2	2	62	1.15	.100	6	32	.76	106	.06	2	3.14	.03	.06	1	69
ATO-87-1 18SL	1	97	5	74	.2	50	21	834	3.77	10	5	ND	1	208	1	2	2	81	1.16	.053	3	57	1.34	51	.13	2	6.09	.03	.07	1	11
ATO-87-1 19SL	1	83	2	66	.1	25	11	322	3.44	10	5	ND	2	58	1	3	2	64	.44	.126	10	32	.66	77	.09	2	5.16	.02	.05	1	17
ATO-87-1 20SL	1	55	2	62	.1	15	5	310	2.33	5	5	ND	1	72	1	2	2	49	.38	.100	7	21	.31	94	.04	2	2.82	.02	.04	1	6
ATO-87-1 21SL	1	92	6	85	.1	38	11	479	3.62	23	5	ND	1	54	1	2	2	66	.45	.092	5	37	.66	105	.07	3	4.19	.03	.04	1	20
ATO-87-1 22SL	1	74	4	85	.2	28	10	616	3.15	14	5	ND	1	63	1	3	2	61	.51	.139	6	34	.64	98	.09	2	4.78	.03	.06	1	8
ATO-87-1 23SL	1	86	4	84	.1	26	18	727	4.59	18	5	ND	1	240	1	3	7	95	.85	.069	4	44	1.40	80	.08	2	5.35	.03	.07	1	6
ATO-87-1 24SL	1	91	7	62	.1	30	17	538	3.77	13	5	ND	1	99	1	2	4	64	.89	.075	5	32	.63	71	.09	2	4.43	.03	.07	1	1
ATO-87-1 25SL	1	112	13	83	.1	43	22	1233	5.01	17	5	ND	1	142	1	2	6	80	.98	.121	5	40	.57	100	.09	3	4.84	.03	.09	1	9
ATO-87-1 26SL	2	132	18	118	.3	49	37	2000	6.27	18	5	ND	1	179	1	5	5	87	1.16	.126	6	37	.65	78	.06	6	5.95	.03	.11	1	5
ATO-87-1 27SL	1	104	5	126	.1	76	30	1620	4.21	11	5	ND	1	103	1	4	5	85	1.01	.131	6	89	1.12	167	.16	4	5.53	.03	.14	1	4
ATO-87-1 28SL	6	84	7	82	.1	36	21	1388	3.77	43	5	ND	1	246	1	2	3	65	3.42	.109	7	31	.55	74	.04	2	8.33	.02	.16	1	240
ATO-87-1 29SL	1	89	10	107	.2	53	21	1140	4.42	36	5	ND	1	190	1	2	4	81	1.35	.124	7	57	.79	105	.08	2	5.91	.02	.09	1	250
ATO-87-1 30SL	10	99	2	172	.4	48	24	808	4.29	46	5	ND	1	187	1	2	6	113	1.73	.107	5	39	.69	112	.08	2	7.90	.01	.11	1	24
ATO-87-1 31SL	3	92	3	109	.1	37	25	1119	3.82	19	5	ND	1	169	1	2	5	85	1.77	.121	3	32	.60	83	.09	2	6.76	.02	.12	1	47
ATO-87-1 32SL	1	111	18	124	.1	38	30	1653	4.57	54	5	ND	1	189	1	4	2	92	1.34	.112	5	31	.76	108	.06	2	5.78	.03	.10	1	37
ATO-87-1 33SL	1	97	23	151	.1	35	41	1228	4.13	50	5	ND	1	193	1	2	2	79	2.29	.063	5	30	.81	60	.05	2	5.65	.02	.13	1	44
ATO-87-1 34SL	2	107	15	119	.1	31	29	1501	4.88	46	5	ND	1	310	1	2	4	91	1.91	.082	5	28	.75	77	.06	2	6.63	.03	.13	1	52
ATO-87-1 35SL	1	87	10	103	.1	37	27	1096	4.25	55	5	ND	2	177	1	3	2	88	1.59	.082	7	38	.87	61	.05	5	5.84	.03	.12	1	45
ATO-87-1 36SL	3	167	13	120	.1	37	47	2041	6.65	106	5	ND	1	255	1	2	2	89	2.00	.079	6	27	.61	52	.06	2	5.26	.04	.11	1	860
STD C/AU-5	18	60	41	131	7.1	68	28	923	3.92	41	14	7	37	50	17	16	24	56	.47	.086	38	60	.88	176	.08	36	1.83	.06	.13	11	52

IMPERIAL METALS PROJECT-ATO-7101 FILE # 87-3148

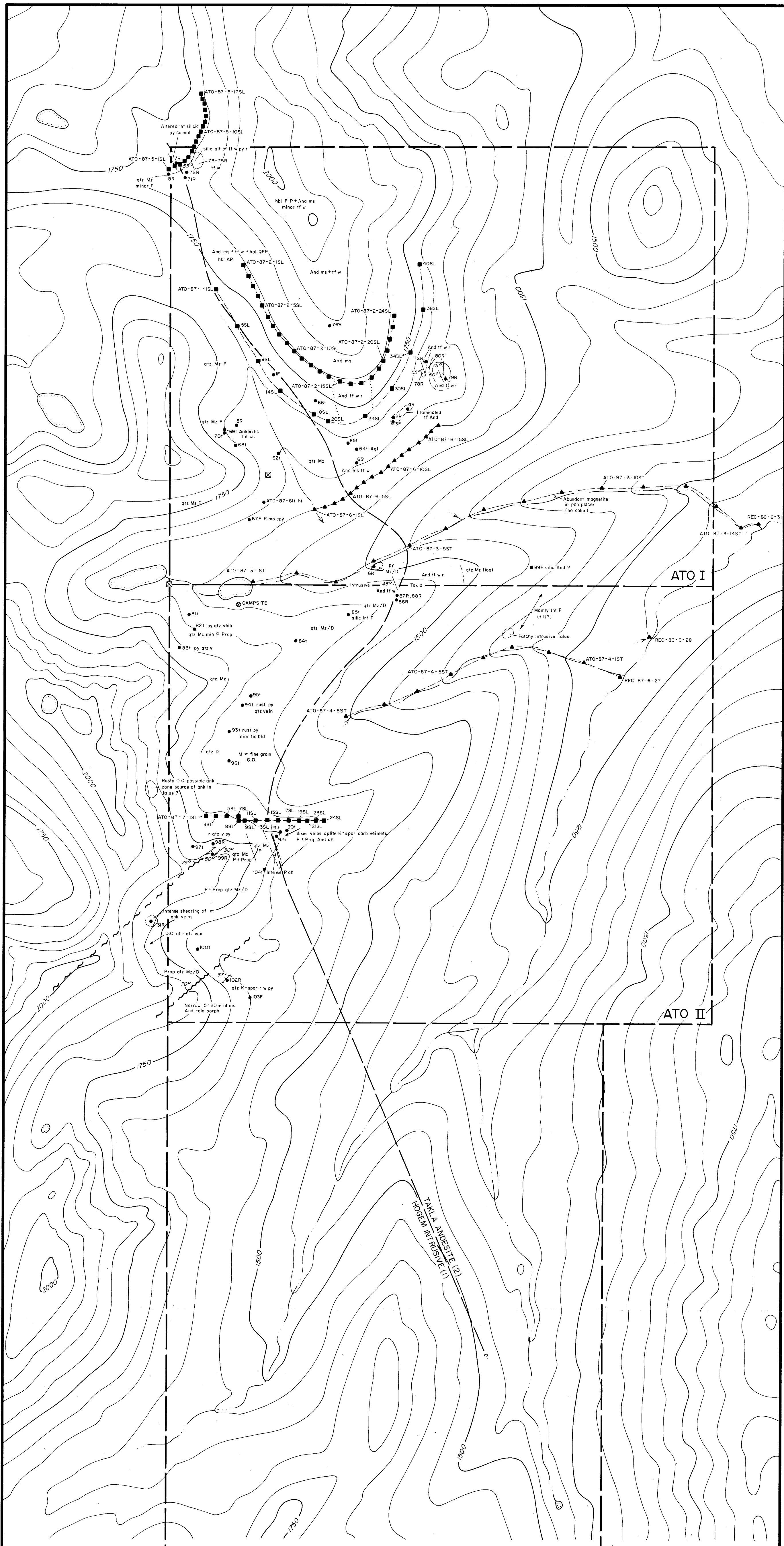
SAMPLE#	MO PPH	CU PPH	PB PPH	ZN PPH	AG PPH	NI PPH	CO PPH	MN PPH	FE %	AS PPH	U PPH	AU PPH	TH PPH	SR PPH	CD PPH	SB PPH	BI PPH	V PPH	CA %	P %	LA PPH	CR PPH	MG %	BA PPH	TI %	B PPH	AL %	MA %	K %	W PPH	AU# PPB
ATO-87-1 37SL	1	112	20	104	.1	26	24	1356	5.47	67	7	ND	1	273	1	2	2	99	1.47	.067	3	25	.55	93	.07	2	4.34	.03	.10	1	59
ATO-87-1 38SL	2	151	17	122	.1	31	47	1920	6.37	62	6	ND	2	219	1	2	2	100	1.34	.088	4	29	.87	60	.08	5	5.67	.03	.09	1	21
ATO-87-1 39SL	2	171	15	101	.2	42	32	1162	6.05	34	11	ND	1	190	1	2	2	102	.99	.096	4	33	.76	91	.11	5	5.46	.02	.09	1	148
ATO-87-1 40SL	1	109	12	104	.1	39	15	455	5.36	38	5	ND	1	124	1	2	2	101	.53	.060	4	43	.83	111	.10	3	4.68	.03	.05	1	54
ATO-87-2 1SL	1	55	9	53	.1	18	6	174	2.02	20	5	ND	1	54	1	2	2	43	.35	.083	3	23	.37	83	.04	2	2.63	.02	.02	1	23
ATO-87-2 2SL	1	94	14	63	.1	37	18	531	3.26	17	5	ND	1	91	1	2	2	61	.75	.092	8	33	.79	118	.08	2	3.60	.04	.04	1	4
ATO-87-2 3SL	1	98	7	80	.2	32	17	738	3.26	21	5	ND	1	117	1	2	2	64	1.18	.097	5	31	.75	114	.09	2	4.64	.03	.08	1	98
ATO-87-2 4SL	1	73	18	79	.2	23	12	751	3.30	16	5	ND	1	99	1	2	2	68	.71	.108	6	29	.65	138	.07	2	4.48	.03	.07	1	57
ATO-87-2 5SL	1	88	25	94	.1	33	19	1014	3.19	18	5	ND	2	115	1	2	2	68	.96	.152	6	35	.63	117	.06	2	4.50	.02	.07	1	4
ATO-87-2 6SL	1	132	12	100	.1	30	29	1493	3.66	21	5	ND	1	145	1	2	2	69	1.20	.144	6	27	.62	98	.08	2	4.77	.02	.10	1	21
ATO-87-2 7SL	1	113	5	83	.2	32	21	842	2.98	21	5	ND	1	130	1	2	2	63	1.27	.142	7	31	.67	85	.05	3	5.04	.04	.04	1	3
ATO-87-2 8SL	1	105	19	132	.2	36	22	1224	3.91	24	5	ND	1	126	1	2	2	77	1.09	.127	5	39	.99	100	.05	2	4.96	.02	.11	1	56
ATO-87-2 9SL	1	71	9	105	.3	20	16	1227	2.18	15	5	ND	1	124	1	2	2	45	1.25	.193	6	21	.48	74	.02	2	3.25	.02	.10	1	11
ATO-87-2 10SL	1	92	4	128	.1	21	18	1145	3.56	39	6	ND	1	130	1	2	2	89	1.77	.129	5	29	1.03	70	.07	2	4.57	.02	.09	1	1
ATO-87-2 11SL	1	92	17	112	.1	24	20	1056	3.21	20	5	ND	1	181	1	2	2	58	.94	.115	4	27	.69	69	.06	2	4.12	.03	.07	1	4
ATO-87-2 12SL	1	81	14	106	.1	12	15	2054	3.68	10	6	ND	1	168	1	2	2	66	1.17	.158	4	13	.40	109	.03	2	3.32	.01	.10	1	2
ATO-87-2 13SL	1	33	6	47	.3	8	5	450	1.46	7	5	ND	1	53	1	2	2	27	.43	.108	2	10	.19	44	.01	2	1.57	.01	.03	1	18
ATO-87-2 14SL	1	122	11	94	.3	34	28	1214	3.75	29	5	3	1	125	1	3	2	67	.94	.123	6	28	.72	135	.05	3	3.84	.03	.08	1	29
ATO-87-2 15SL	1	92	17	120	.2	33	18	1080	3.55	40	5	ND	1	124	1	2	2	77	1.03	.174	3	48	.70	78	.03	2	3.53	.02	.08	1	2
ATO-87-2 16SL	1	100	12	70	.1	45	19	537	3.71	22	5	ND	1	85	1	2	2	68	1.94	.059	3	60	1.17	26	.04	2	5.16	.02	.08	1	1
ATO-87-2 17SL	1	92	11	133	.1	27	13	514	2.13	10	5	ND	1	61	1	2	2	39	.74	.082	3	26	.52	51	.03	2	2.31	.02	.04	1	17
ATO-87-2 18SL	1	83	13	99	.1	67	23	569	3.75	30	5	ND	1	171	1	2	2	76	1.29	.048	3	73	1.25	68	.12	18	4.43	.04	.11	1	13
ATO-87-2 19SL	1	108	8	140	.4	37	19	754	3.50	21	5	ND	2	125	1	2	2	74	1.20	.095	6	35	1.02	49	.07	2	5.40	.04	.08	2	6
ATO-87-2 20SL	1	147	11	62	.1	32	31	1160	3.85	9	5	ND	2	162	1	2	2	58	2.15	.096	5	18	.33	50	.04	2	5.54	.02	.12	1	16
ATO-87-2 21SL	1	65	18	81	.3	12	13	2083	3.16	6	5	ND	1	424	1	2	2	56	1.04	.197	4	14	.35	147	.04	2	4.58	.02	.14	1	1
ATO-87-2 22SL	1	62	14	102	.2	18	15	1752	3.31	20	5	ND	1	155	1	2	2	59	.92	.133	4	22	.48	117	.03	2	3.44	.02	.08	1	7
ATO-87-2 23SL	1	73	9	94	.2	15	13	775	3.83	15	5	ND	2	178	1	2	2	77	1.37	.153	5	17	.60	105	.04	2	5.60	.04	.07	1	7
ATO-87-2 24SL	1	47	21	92	.2	6	15	1115	4.51	33	5	ND	2	177	1	2	3	72	.99	.098	9	7	.82	87	.01	2	3.58	.01	.05	1	1
ATO-87-3 1ST	12	266	15	100	.1	5	16	2310	4.78	17	5	ND	18	38	1	2	2	95	.94	.282	19	7	.52	152	.01	3	1.63	.01	.08	2	1
ATO-87-3 2ST	4	129	15	109	.1	3	11	1602	2.83	8	6	ND	4	62	1	2	2	67	.65	.116	10	5	.72	120	.06	2	1.25	.02	.05	3	1
ATO-87-3 3ST	4	208	16	82	.1	16	14	780	3.72	12	5	ND	2	65	1	2	2	95	.86	.097	9	26	.87	111	.11	3	1.85	.03	.06	1	1
ATO-87-3 4ST	2	112	9	79	.1	34	14	594	3.54	19	5	ND	3	71	1	2	2	97	1.64	.064	6	62	1.12	72	.14	7	2.84	.04	.06	1	1
ATO-87-3 5ST	2	159	11	85	.1	30	14	559	3.84	23	8	ND	2	90	1	3	2	100	1.34	.066	6	46	1.11	92	.12	2	2.79	.04	.07	1	3
ATO-87-3 6ST	1	157	9	92	.1	27	14	537	3.77	17	5	ND	1	95	1	2	2	97	1.28	.064	6	42	1.03	100	.13	3	2.58	.04	.07	1	99
ATO-87-3 7ST	1	137	14	77	.1	23	13	525	4.76	17	5	ND	3	78	1	2	2	140	1.13	.079	7	39	.91	79	.14	3	2.09	.04	.06	1	5
ATO-87-3 8ST	1	124	13	67	.1	21	12	489	3.38	13	5	ND	3	75	1	2	2	88	1.04	.070	6	30	.87	78	.12	3	1.98	.04	.06	1	5
STD C/AU-S	19	60	40	132	7.2	67	29	921	3.94	36	15	8	39	51	17	17	23	56	.47	.085	38	60	.88	181	.08	33	1.86	.06	.14	11	52

IMPERIAL METALS PROJECT-ATO 7101 FILE # 87-3148

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	W	AUX
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM	
ATO-87-3 9ST P	1	127	16	92	.1	25	14	597	3.89	16	5	ND	3	76	1	3	2	91	.98	.079	7	38	.93	131	.12	4	2.18	.03	.08	1	2
ATO-87-3 10ST P	1	121	20	64	.1	15	11	442	3.95	10	5	ND	2	60	1	2	2	109	.91	.077	6	32	.83	68	.14	5	1.71	.04	.05	1	6
ATO-87-3 11ST P	1	117	18	66	.1	16	11	451	3.97	14	5	ND	2	60	1	2	2	108	.92	.076	6	33	.83	69	.14	11	1.72	.04	.06	1	3
ATO-87-3 12ST P	1	134	17	68	.1	15	11	421	3.61	13	5	ND	2	68	1	2	2	95	.98	.083	7	31	.82	81	.12	5	1.77	.03	.06	1	9
ATO-87-3 13ST P	1	126	17	64	.1	15	11	435	3.46	13	5	ND	1	68	1	2	4	91	.93	.078	6	27	.82	76	.13	5	1.75	.04	.06	1	23
ATO-87-3 14ST P	1	125	17	59	.1	14	11	441	4.21	11	5	ND	3	66	1	2	2	125	.92	.084	6	31	.80	72	.14	10	1.66	.04	.06	1	4
ATO-87-4 1ST P	1	154	15	67	.1	18	16	537	5.29	11	5	ND	2	96	1	2	2	165	1.14	.086	5	43	1.15	85	.16	6	2.10	.03	.07	1	36
ATO-87-4 2ST P	1	167	17	68	.1	21	16	555	5.56	9	5	ND	2	109	1	2	2	177	1.18	.092	6	42	1.09	87	.17	5	2.11	.04	.09	1	6
ATO-87-4 3ST P	1	157	21	59	.1	18	14	487	4.51	8	5	ND	2	101	1	2	2	137	1.07	.088	6	36	1.03	75	.16	4	1.94	.03	.08	1	6
ATO-87-4 4ST P	1	154	20	65	.1	17	14	518	5.00	6	5	ND	2	108	1	2	2	155	1.13	.086	5	40	1.08	80	.18	5	2.06	.05	.09	1	9
ATO-87-4 5ST P	1	216	18	64	.1	21	16	581	5.86	8	5	ND	2	107	1	2	2	200	1.15	.094	6	48	1.11	80	.18	5	2.11	.03	.09	1	8
ATO-87-4 6ST P	1	245	11	67	.1	21	16	585	5.27	10	5	ND	2	108	1	2	2	168	1.20	.102	7	44	1.16	93	.17	5	2.33	.03	.08	2	10
ATO-87-4 7ST P	1	284	19	71	.1	21	17	663	4.85	11	5	ND	2	106	1	2	2	152	1.10	.085	6	45	1.26	96	.17	7	2.41	.02	.08	1	1
ATO-87-4 8ST P	2	358	15	69	.1	22	18	748	4.64	8	5	ND	3	142	1	2	2	141	1.25	.078	6	49	1.39	110	.19	7	2.79	.03	.10	1	9
ATO-87-5 1SL P	1	769	22	64	.1	44	51	471	6.27	21	5	ND	3	178	1	2	2	174	1.05	.110	6	86	1.41	93	.28	8	2.67	.02	.18	1	7
ATO-87-5 2SL P	1	648	134	469	.9	74	56	598	4.26	101	5	ND	3	58	2	3	2	103	1.61	.064	6	64	1.42	21	.17	12	3.07	.03	.05	3	1
ATO-87-5 3SL P	1	96	20	58	.1	30	15	529	3.70	3	5	ND	2	236	1	2	2	104	2.75	.058	4	60	1.91	60	.21	8	4.38	.03	.07	1	1
ATO-87-5 4SL P	1	96	11	97	.1	87	21	555	3.44	13	5	ND	4	110	1	2	2	77	2.40	.067	5	178	2.48	42	.22	8	5.22	.05	.09	1	7
ATO-87-5 5SL P	1	108	14	90	.1	65	25	654	3.94	52	5	ND	2	159	1	2	2	89	1.75	.063	5	128	2.05	52	.20	7	4.51	.04	.08	1	15
ATO-87-5 6SL P	1	111	20	102	.2	31	22	1236	3.00	13	5	ND	2	95	1	2	2	50	1.48	.127	6	32	.77	54	.05	7	2.96	.02	.07	1	8
ATO-87-5 7SL P	1	91	17	115	.3	33	21	1316	2.92	15	5	ND	2	84	1	2	2	60	1.48	.124	5	41	.94	65	.05	3	3.13	.03	.07	1	4
ATO-87-5 8SL P	1	92	11	84	.1	25	15	573	2.74	12	5	ND	1	82	1	2	2	61	1.53	.113	4	36	.88	53	.07	5	3.40	.03	.05	1	4
ATO-87-5 9SL P	1	112	17	75	.2	25	16	645	3.30	19	5	ND	1	109	1	3	2	69	1.26	.113	4	35	.88	73	.08	6	3.93	.04	.08	1	10
ATO-87-5 10SL P	1	149	21	83	.2	49	35	699	5.22	90	5	ND	2	141	1	2	2	105	1.72	.064	5	73	1.40	45	.22	7	4.71	.02	.06	1	57
ATO-87-5 11SL P	1	136	16	83	.1	36	26	663	4.33	24	5	ND	2	108	1	2	2	91	1.90	.057	4	46	1.32	35	.19	3	4.33	.05	.06	1	64
ATO-87-5 12SL P	1	131	18	73	.3	27	24	614	4.16	20	5	ND	2	132	1	2	2	84	2.52	.050	4	34	1.19	22	.14	5	4.69	.04	.06	1	225
ATO-87-5 13SL P	1	135	12	73	.1	31	24	606	4.48	15	5	ND	3	109	1	2	2	91	2.22	.052	3	40	1.33	32	.16	10	4.44	.05	.08	1	123
ATO-87-5 14SL P	1	166	23	94	.1	35	28	821	5.10	39	5	ND	3	107	1	2	2	96	1.95	.065	5	48	1.55	168	.11	4	4.51	.03	.08	2	81
ATO-87-5 15SL P	1	159	21	96	.2	35	28	836	4.89	42	5	ND	3	114	1	2	2	91	2.14	.062	6	46	1.49	102	.09	6	4.91	.02	.10	1	63
ATO-87-5 16SL P	1	120	14	75	.1	33	26	686	4.59	30	5	ND	3	129	1	2	3	93	2.43	.053	3	47	1.48	49	.13	2	5.02	.04	.08	1	87
ATO-87-5 17SL P	1	134	12	89	.1	39	26	745	4.92	146	5	ND	2	118	1	2	2	100	2.38	.059	4	51	1.53	39	.12	10	5.10	.03	.08	1	165
ATO-87-6 1SL P	6	400	20	85	.1	15	10	778	3.21	29	40	ND	1	83	1	2	2	101	1.22	.110	16	33	.72	75	.06	3	2.22	.02	.06	1	11
ATO-87-6 2SL P	1	95	18	63	.1	16	13	330	4.85	9	5	ND	1	39	1	2	2	157	.35	.067	5	42	.92	64	.23	4	2.14	.02	.06	1	12
ATO-87-6 3SL P	1	82	17	59	.1	8	9	236	4.52	3	5	ND	2	52	1	2	2	124	.36	.115	5	30	.45	59	.11	5	1.68	.02	.05	1	4
ATO-87-6 4SL P	1	103	19	73	.1	14	9	327	4.34	3	5	ND	2	38	1	2	2	100	.26	.092	7	26	.57	63	.08	15	2.63	.02	.06	1	4
ATO-87-6 5SL P	1	37	17	37	.1	7	6	252	3.11	4	5	ND	2	57	1	2	2	94	.29	.037	5	20	.26	75	.11	2	1.40	.02	.04	1	2
STD C/AU-S	17	57	41	132	6.9	66	27	886	3.92	33	17	7	38	49	17	16	21	55	.48	.084	36	58	.88	176	.08	33	1.85	.06	.13	14	52

P-20MESH, PULVERIZED

SAMPLE#	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS	U	AU	TH	SR	CD	SB	BI	V	CA	P	LA	CR	MG	BA	TI	B	AL	NA	K	W	AU#
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM
ATO-87-6 6SL	1	57	11	48	.1	9	5	237	3.10	4	5	ND	2	53	1	3	2	81	.24	.052	5	22	.35	71	.07	3	1.86	.01	.04	2	8
ATO-87-6 7SL	1	44	14	68	.1	12	6	416	3.14	3	5	ND	1	65	1	2	2	76	.33	.073	5	22	.40	89	.06	2	2.04	.01	.07	1	6
ATO-87-6 8SL	1	140	11	111	.1	37	26	935	5.36	54	5	ND	3	101	1	2	2	99	1.17	.068	5	35	.82	56	.07	3	4.96	.02	.07	1	36
ATO-87-6 9SL	1	85	15	91	.3	23	13	901	4.16	20	5	ND	2	106	1	3	2	84	.62	.132	6	29	.60	111	.09	4	4.12	.02	.08	1	39
ATO-87-6 10SL	1	118	12	74	.1	30	17	363	4.59	70	5	ND	2	66	1	2	2	78	.66	.062	7	34	.68	66	.10	3	4.04	.02	.06	1	57
ATO-87-6 11SL	1	84	11	87	.3	20	14	1529	3.84	14	5	ND	1	60	1	3	2	74	.43	.138	5	29	.50	100	.08	5	3.22	.02	.06	2	42
ATO-87-6 12SL	1	53	15	65	.2	13	7	412	3.30	14	5	ND	1	50	1	2	2	66	.31	.093	5	24	.38	71	.05	6	2.34	.02	.07	1	54
ATO-87-6 13SL	1	116	15	87	.2	30	15	715	5.26	55	5	ND	1	103	1	2	2	91	.53	.087	5	35	.60	103	.09	2	3.22	.02	.06	1	21
ATO-87-6 14SL	1	91	13	85	.1	29	17	508	4.49	24	5	ND	2	97	1	2	2	92	.61	.086	8	42	.83	83	.12	2	3.86	.02	.06	1	53
ATO-87-6 15SL	1	51	10	94	.2	22	10	532	3.85	15	5	ND	3	64	1	4	2	84	.38	.096	8	33	.62	98	.10	2	3.45	.02	.06	1	13
ATO-87-6 16SL	1	124	4	92	.1	33	25	597	4.91	13	5	ND	2	210	1	2	2	94	.83	.109	5	32	.81	132	.10	2	5.75	.02	.08	1	22
ATO-87-6 17SL	1	130	9	73	.1	33	31	944	5.16	14	5	ND	2	165	1	2	2	83	1.77	.099	4	32	.84	61	.11	3	5.11	.02	.11	1	10
ATO-87-7 1SL	1	133	17	62	.1	9	15	539	8.63	3	5	ND	2	70	1	2	2	261	.85	.645	14	27	.76	74	.07	6	3.09	.01	.04	1	1
ATO-87-7 2SL	1	169	18	67	.1	9	17	636	7.60	4	5	ND	1	106	1	2	2	253	.74	.353	12	22	.79	103	.10	9	2.73	.01	.06	1	5
ATO-87-7 3SL	1	200	13	64	.1	8	13	410	5.04	8	5	ND	1	81	1	2	2	158	.72	.298	12	16	.81	72	.07	2	2.70	.01	.04	1	1
ATO-87-7 4SL	1	101	15	58	.1	7	12	452	7.12	6	5	ND	1	58	1	2	2	197	.32	.330	6	21	.58	74	.06	2	2.52	.01	.04	1	1
ATO-87-7 5SL	1	162	17	70	.1	17	12	350	5.29	10	5	ND	1	74	1	4	2	141	.33	.143	7	34	.98	80	.09	6	3.01	.01	.03	1	4
ATO-87-7 6SL	1	84	12	42	.2	7	8	204	3.11	4	5	ND	1	127	1	3	2	108	.32	.051	5	15	.43	102	.12	2	1.56	.01	.04	1	4
ATO-87-7 7SL	1	283	18	73	.1	20	15	393	5.85	11	5	ND	1	82	1	2	2	161	.74	.219	12	32	1.09	94	.09	2	3.61	.01	.04	1	2
ATO-87-7 8SL	1	359	14	84	.1	11	16	1072	4.73	23	5	ND	1	154	1	2	2	160	1.63	.259	11	18	.90	110	.04	10	3.37	.02	.06	1	13
ATO-87-7 9SL	2	328	13	60	.1	8	15	834	3.70	14	5	ND	1	127	1	2	2	120	1.33	.243	10	15	.86	110	.03	12	2.64	.02	.05	2	13
ATO-87-7 10SL	2	508	22	96	.1	14	23	996	7.34	7	5	ND	1	180	1	2	2	233	1.67	.275	12	27	1.76	153	.15	2	3.60	.01	.07	1	11
ATO-87-7 11SL	1	157	17	66	.1	4	11	825	4.52	8	5	ND	1	182	1	2	2	131	.93	.192	9	6	.79	85	.05	4	4.03	.01	.08	2	14
ATO-87-7 12SL	1	450	20	107	.1	6	18	1091	7.02	2	5	ND	3	157	1	2	2	194	2.09	.335	25	8	1.38	205	.17	2	3.00	.01	.15	1	3
ATO-87-7 13SL	1	446	18	112	.1	8	17	1284	5.81	6	5	ND	1	175	1	2	2	165	1.94	.247	17	7	1.39	126	.13	2	3.49	.01	.13	2	3
ATO-87-7 14SL	1	411	14	50	.1	9	13	958	3.82	3	5	ND	1	167	1	2	2	122	1.94	.108	8	13	1.53	84	.08	3	2.99	.01	.10	2	14
ATO-87-7 15SL	1	143	10	41	.1	8	11	530	3.49	5	5	ND	1	190	1	2	2	128	1.52	.103	7	18	1.11	63	.12	2	3.58	.02	.11	2	6
ATO-87-7 16SL	1	229	12	33	.1	8	11	729	3.41	4	5	ND	2	158	1	2	2	118	1.71	.101	10	14	1.33	80	.07	2	2.85	.01	.09	1	23
ATO-87-7 17SL	1	351	9	44	.1	14	16	974	4.32	10	5	ND	2	106	1	2	2	150	1.50	.074	9	28	1.58	119	.11	5	2.58	.01	.07	2	9
ATO-87-7 18SL	1	71	13	42	.1	12	10	253	3.47	3	5	ND	1	163	1	2	2	140	.69	.040	3	30	.84	81	.11	2	1.93	.02	.05	1	6
ATO-87-7 19SL	1	493	16	37	.1	11	13	696	3.48	2	5	ND	4	155	1	2	2	110	2.39	.089	9	21	1.39	81	.05	2	4.76	.01	.13	2	26
ATO-87-7 20SL	5	255	15	78	.1	23	24	932	4.59	8	5	ND	2	175	1	2	2	106	2.17	.067	8	41	1.73	137	.08	2	4.65	.01	.12	1	1
ATO-87-7 21SL	5	292	12	74	1.0	15	15	697	4.78	21	5	ND	1	113	1	2	2	114	.48	.129	6	34	1.15	172	.03	2	3.90	.01	.05	1	1
ATO-87-7 22SL	4	617	22	106	.4	43	49	2527	7.34	52	5	ND	2	68	1	2	2	122	.77	.087	15	70	2.49	390	.01	2	4.04	.01	.07	1	7
ATO-87-7 23SL	1	298	12	33	.2	7	13	878	2.85	6	5	ND	2	140	1	2	2	50	1.93	.062	6	12	.80	67	.02	2	3.42	.01	.13	2	3
ATO-87-7 24SL	1	221	18	65	.1	31	22	725	5.48	10	5	ND	2	121	1	2	2	127	.99	.114	9	42	1.20	119	.12	2	3.94	.02	.07	1	19
STD C/AU-S	17	57	43	130	7.1	66	28	885	3.91	38	18	7	37	49	17	18	20	55	.47	.082	36	58	.87	174	.08	31	1.84	.06	.13	11	53



ATO III
GEOLOGICAL BRANCH
ASSESSMENT REPORT

16,830

CATHEDRAL GOLD CORPORATION
ATO PROPERTY

N.T.S. 93N/14 M.D. OMINECA

GEOLOGY & SAMPLE LOCATION MAP

metres 0 200 400 600 800 metres

SCALE: 1:10 000 GEOLOGIST: A. TAYLOR

DATE: NOVEMBER 1987 DRAWN BY: J. CORKUM

SYMBOLS	MINERALIZATION	GEOLOGICAL LEGEND
☒ LCP	cpy CHALCOPYRITE	1 HOGE INTRUSIVE (UPPER TRIASSIC - MID JURASSIC)
— CLAIM BOUNDARY	mo MOLYBDENUM	MASSIVE COARSE TO FINE GRAINED GRANODIORITE (GD) THROUGH DIORITE (D) AND QUARTZ MONZONITE (QM). LOCAL QUARTZ FELDSPAR PORPHYRY DYKES (OPF) CUT THE ADJACENT VOLCANICS
~ ~ ~ FAULT	py PYRITE	2 TAKLA GROUP (TRIASSIC)
— GEOLOGICAL CONTACT	po PYRRHOTITE	MAINLY DARK GREEN ANDESITIC VOLCANIC ROCKS WITH LOCAL TUFF (1), WACKE (w) AND MASSIVE FLOWS (ms) COMMONLY CUT BY AUGITE PORPHYRY DYKES (AP) SOME WITH HORNBLENDE (hbid)
— BEDDING AND DIP	ht HEMATITE	
— FOLIATION	cc CHALCOCITE	
■ SOIL SAMPLE (SL)		
▲ SILT SAMPLE (ST)		
• ROCK SAMPLE - OUTCROP (R), TALUS (T), FLOAT (F)		
	ALTERATION	
	sil SILICIC	
	P POTASSIC	
	ar ARGILLIC	
	Prop PROPYLITIC	

CONTOUR INTERVAL - 50 m