

ARIS SUMMARY SHEET

District Geologist, Kamloops

Off Confidential: 92.09.06

ASSESSMENT REPORT 21795

MINING DIVISION: Kamloops

PROPERTY: M & R
LOCATION: LAT 50 29 50 LONG 120 32 00
UTM 10 5596604 674944
NTS 092I07E

CAMP: 016 Iron Mask Area

CLAIM(S): M & R 3-4
OPERATOR(S): Afton Operating
AUTHOR(S): Bond, L.A.
REPORT YEAR: 1991, 15 Pages

COMMODITIES

SEARCHED FOR: Copper, Gold

KEYWORDS: Triassic, Nicola Group, Diorites, Overburden, Tills

WORK

DONE: Drilling, Geochemical
ROTD 250.0 m 6 hole(s)
Map(s) - 1; Scale(s) - 1:10 000
SAMP 82 sample(s) ; CU, AU

REVERSE CIRCULATION DRILLING REPORT

on the

M & R 3 and 4 Mineral Claims
Record Nos. 217868-217869

KAMLOOPS MINING DIVISION

NTS 92I/10E

Latitude: 50° 31'N Longitude: 120° 31'W

AFTON OPERATING CORPORATION

P.O. Box 937
Kamloops, B.C.
V2C 5N4

LOG NO: 91112	RD.
ACTION:	
FILE NO:	

by

Lorne A. Bond
Senior Geologist

Kamloops, B.C.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

October 20, 1991

21,795

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Introduction

The Walloper Creek property is located 18 kilometres southwest of Kamloops, immediately north of Walloper Lake and west of the Coquihalla Highway. The property consists of the M & R claim group, four claims with a total of 72 units, located in August, 1987.

The claims are situated on the southeast side of Chuwels Mountain at elevations ranging from 1400 to 1750 metres. The area is covered by moderately dense fir and spruce forests with large stands of poplar occurring mainly in a pronounced northeasterly to northerly trending belt in the central part of the claim group. Lodgepole Lake and numerous swampy areas provide good sources of water on the property.

Access to the claims is provided by the Chuwels Mountain gravel road which exits off the Logan Lake - Kamloops and crosses under the Coquihalla Highway near Stake Lake. The north half of the property is traversed by several logging roads. Access to the south half of the claim group for this program was from the Logan Lake highway utilizing old logging roads.

Property Description

The M & R claim group is wholly owned by Afton Operating Corporation and consists of the following:

Claim Name	Units	Record No.	Expiry Date
M & R 1	16	217866	Sept.15,1992*
M & R 2	16	217867	Sept.15,1992*
M & R 3	20	217868	Sept.15,1992*
M & R 4	<u>20</u>	217869	Sept.15,1992*
TOTAL	72		

* Upon approval of assessment work described in this report and covered in a Statement of Exploration and Development submitted on September 6, 1991.

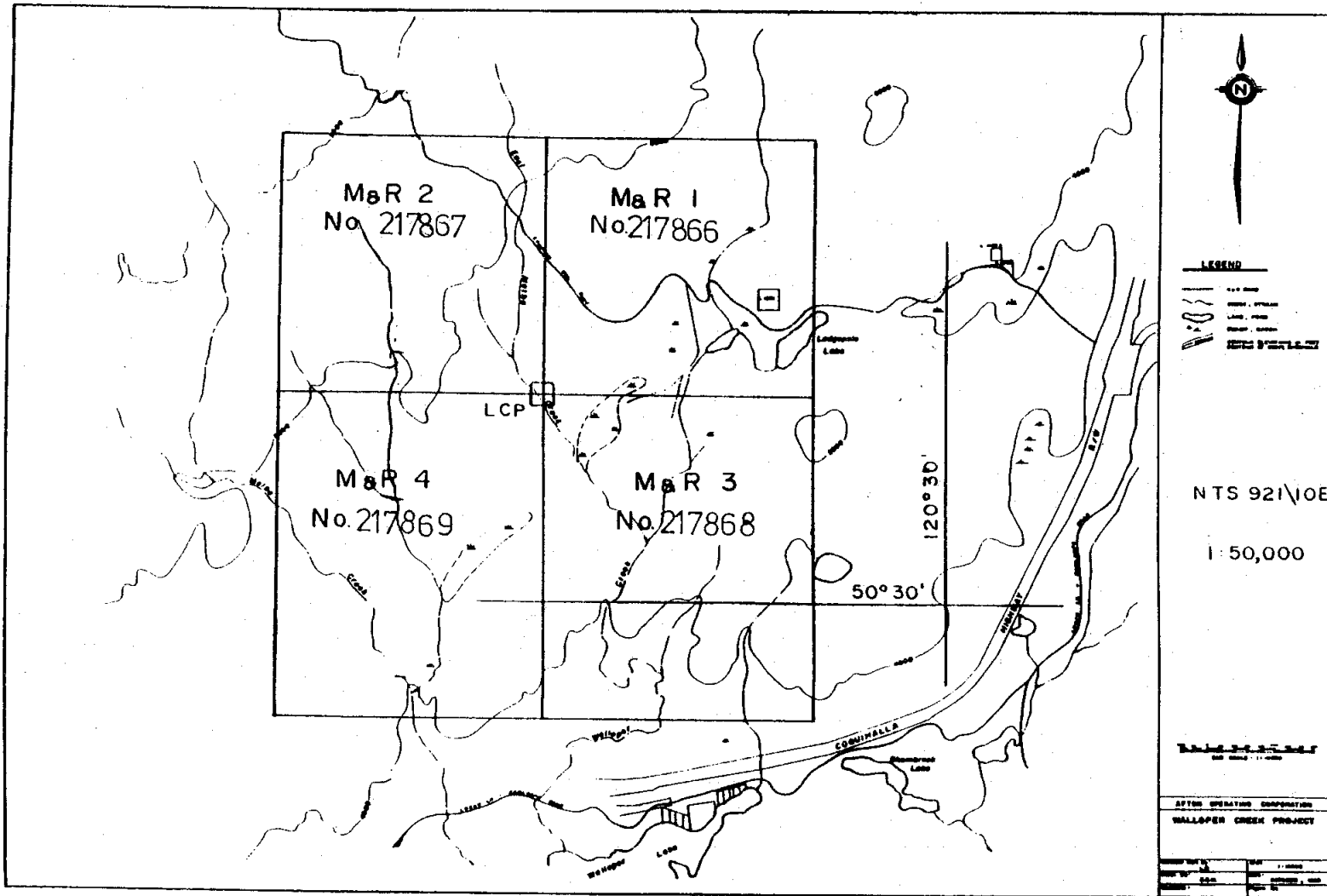


Figure 1. Location and Claim Map

Previous Work

In 1970, Canadian Johns Manville staked the Pine and Fir groups (159 claims) to the east of what is now the Walloper Creek property and between 1970-71 did I.P., soil geochemistry, ground magnetics, and drilled 5 diamond drill holes (assessment reports 3982 and 3893). The claims were subsequently dropped.

On the west side of the property, work in 1972 by Texal Development consisted of a soil geochemical survey for copper (assessment report 4059).

In 1977, Cominco located the Chum claims over the area now covered by the M & R claims as well as additional ground to the north and east. During 1977-1978, a program of geological mapping, induced polarization surveys, and ground magnetics was completed (assessment report 7244). The claims were allowed to lapse.

In 1987, Afton Operating Corporation staked the M & R claims to cover the Triassic alkaline intrusive indicated by the strong aeromagnetic anomaly and subsequent ground surveys carried out by previous operators. During 1987, a reconnaissance soil geochemistry program was conducted to determine the presence of anomalous copper and/or gold values. In 1988, three percussion drillholes were completed in areas of general overburden cover to obtain geological and assay information (assessment report 18082).

Current Program

The greater portion of the intrusive is overlain by a blanket of glacial till some 25 to 30 metres deep with no outcrop exposed. This extensive cover makes conventional soil sampling ineffective. Afton Operating Corporation had carried out a limited percussion drilling program in 1988 along the north margin of the intrusive. Two of three holes intersected diorite with significant propylitic alteration and trace amounts of sulphides.

The 1991 work program focused on the overburden covered portion of the intrusive at the south end of the claim group. The

program consisted of till sampling and bedrock testing utilizing a reverse circulation drill. Old logging roads were accessed to establish two fences of holes on roughly 300 to 400 metre centres. The fences were aligned roughly perpendicular to the direction of ice movement in the region.

Tonto Drilling of Kamloops was retained as the drilling contractor and provided a truck-mounted reverse circulation drill and ancillary equipment for the program. During the period August 15-21, 1991, six drillholes were completed for a total meterage of 250 metres (820 feet).

Till samples were collected for each 3.1 metre (10 foot) interval in overburden. The samples were forwarded to Ecotech Laboratories of Kamloops for geochemical analysis for copper and gold. At the lab, the samples were dried and split down to approximately 250 grams. The 250 gram samples were pulverized in a Ring and Puck pulverizer. For geochemical gold analysis, a 10 gram sample was pre-concentrated by conventional fire assay procedures and finished by atomic absorption. For the copper analysis, a half-gram sample was digested for 90 minutes in 3 ml of hot aqua regia, then bulked to 10 ml and finished by atomic absorption.

The drillholes were drilled into bedrock for a distance of 6.1 to 12.2 metres (20 to 40 feet). Cuttings were collected for each 3.1 metre interval and used for petrographic examinations and copper and gold analyses. Analyses of the bedrock cuttings were performed at the Afton Operating Corporation assay lab. In the lab, the samples were dried and broken down. Sample volume was reduced to 250 grams using a Jones riffle. This smaller sample was then pulverized. Reject material from the splitter was bagged, labelled and stored.

Assays for copper were performed by dissolution followed by atomic absorption spectrophotometry analysis. Gold assays were performed by fire assaying with atomic absorption analysis of the resultant bead in a methyl isobutyl ketone medium.

Drilling Results

DH 91-1	200m east of Post 3S, M & R 3	
	0-21.3 m	Overburden-Glacial Till
	21.3-30.5 m	Diorite porphyry
DH 91-2	60m east, 200m south of Post 3S, M & R 3	
	0-33.5 m	Overburden-Glacial Till
	33.5-42.7 m	Diorite porphyry
DH 91-3	85m west, 20m south of Post 4S, M & R 4	
	0-33.5 m	Overburden-Glacial Till
	33.5-42.7	Diorite porphyry
DH 91-4	300m east, 90m north of Post 4S, M & R 3	
	0-33.5 m	Overburden-Glacial Till
	33.5-42.7	Diorite porphyry
DH 91-5	25m east, 190m south of Post 4S, M & R 3	
	0-42.7 m	Overburden-Glacial Till
	42.7-54.9 m	Diorite porphyry
DH 91-6	370m west, 240m south of Post 4S, M & R 4	
	0-30.5 m	Overburden-Glacial Till
	30.5-36.6 m	Diorite porphyry

General bedrock description: All drillholes were completed in bedrock. The holes intersected a fine-grained to medium-grained diorite porphyry with amphibole and pyroxene phenocrysts. Weak

propylitic alteration was noted consisting of epidote and chlorite mineralization. Plagioclase feldspars appeared to be extensively saussuritized. Minor pyrite was noted in the cuttings and hematite was observed on some fracture surfaces.

Comments and Conclusions

The area tested has a general glacial till cover some 20 to 40 metres in depth. All holes in the program intersected bedrock consisting of a porphyritic diorite intrusive as indicated by earlier magnetic surveys. Bedrock samples returned very low values for both copper and gold analyses.

Copper geochem values in the overburden were generally of background value (100 ppm or less). As well, gold values in till were generally of the order of 5 ppb or less with some exceptions. Consistently higher than background gold values occur in till samples from drillholes 91-1 and 91-2. In 91-2, the interval from 0 to 15.2 m averaged 34 ppb or better than six times background. Also, the sample taken from 27.4 to 30.5 m in drillhole 91-2 returned a gold value of 180 ppb. Complete analytical results are included in the appendices.

The area "up-ice" from drillholes 91-1 and 91-2 could merit further testing because of the higher Au values in overburden from these holes. However, the lack of accompanying anomalous copper values for those intervals is less encouraging.

STATEMENT OF COSTS

Reverse Circulation Drilling Tonto Drilling, Kamloops, B.C. 6 holes for 250m (820 feet)	\$9805.78
Ecotech Laboratories, Kamloops, B.C. 64 till samples-geochem Au-Cu @ \$10.42 each	666.88
Afton Operating Corporation Assay Lab Assaying rock chip samples 18 samples for Au and Cu at \$15.40 each	277.20
Truck Rental 10 days @ \$30.00 per day	300.00
Salaries: Louis Tsang, exploration geologist: supervising drilling, logging cuttings 9 days at \$220.00 per day	1980.00
Lorne Bond, senior geologist: program planning, supervision 10 days at \$265.00 per day	2650.00
Report preparation, drafting plans, printing	<u>1060.00</u>
TOTAL	\$16739.86

STATEMENT OF QUALIFICATIONS

I, Lorne Allan Bond, of the City of Kamloops, British Columbia, do hereby certify that:

1. I am a qualified, practicing Geologist.
2. I am a graduate of Loyola College (University of Montreal), with a B. Sc. (1967) in Geotechnical Sciences.
3. I have practiced my profession since 1967 while employed with Sherritt-Gordon Mines Ltd., Cominco Ltd., and Afton Operating Corporation.
4. This report describes an exploration program performed under my direction from August 12 to August 21, 1991.

Lorne A. Bond
Senior Geologist
Afton Operating Corporation
October 20, 1991

STATEMENT OF QUALIFICATIONS

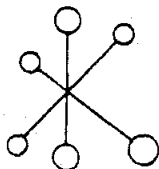
I, Louis Hee-Choi Tsang, of the City of Kamloops, British Columbia, do hereby certify that:

1. I am a qualified, practicing geologist.
2. I am a graduate of the University of British Columbia with a B. Sc.(1972) in Geology and Geophysics.
3. I have practiced my profession since 1972 while employed with Granisle Copper Ltd., Highmont Operating Corporation and Afton Operating Corporation.
4. I have supervised drilling operations and logged the cuttings of the reverse circulation drillholes completed on the M & R claim group, during the period August 12-21, 1991.

Louis H. C. Tsang
Exploration Geologist
Afton Operating Corporation

October 20, 1991

APPENDIX: Analytical Results



ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

AUGUST 30 , 1991

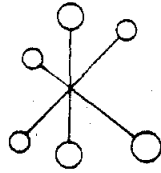
CERTIFICATE OF ANALYSIS ETK 91-673

AFTON OPERATING CORPORATION
P.O. BOX 937
KAMLOOPS, B.C.
V2C 5N4

SAMPLE IDENTIFICATION:

64 REVERSE CIRCULATION DRILL SAMPLES RECEIVED AUGUST 21, 1991
REQ. NO: 93978

ET#	Description	AU (ppb)	CU (ppm)	
1 -	2601	5	101	} DH 91-2 (15.2 m - 33.5 m)
2 -	2602	5	89	
3 -	2603	10	79	
4 -	2604	5	84	
5 -	2605	180	91	
6 -	2606	10	76	
7 -	2610	5	93	} DH 91-3 (0 - 33.5 m)
8 -	2611	5	97	
9 -	2612	5	118	
10 -	2613	5	102	
11 -	2614	5	91	
12 -	2615	5	84	
13 -	2616	5	82	
14 -	2617	5	81	
15 -	2618	5	83	
16 -	2619	5	88	
17 -	2620	5	85	
18 -	2624	5	76	} DH 91-6 (0 - 30.5 m)
19 -	2625	5	89	
20 -	2626	5	87	
21 -	2627	5	92	
22 -	2628	5	87	
23 -	2629	25	66	
24 -	2631	5	67	
25 -	2632	5	74	
26 -	2633	35	62	
27 -	2634	5	78	
28 -	2901	5	67	} DH 91-4
29 -	2902	5	78	
30 -	2903	15	76	



ECO-TECH LABORATORIES LTD.

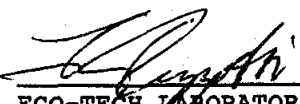
ASSAYING - ENVIRONMENTAL TESTING

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

AFTON OPERATING CORPORATION

AUGUST 30 , 1991

ET#	Description	AU (ppb)	CU (ppm)	
31-	2904	1	82	} <u>DH 91-4</u> (0 - 33.5m)
32-	2905	5	69	
33-	2906	5	72	
34-	2907	10	68	
35-	2908	5	72	
36-	2909	10	71	
37-	2910	5	81	
38-	2911	5	87	
39-	2915	20	95	} <u>DH 91-5</u> (0 - 42.7m)
40-	2916	5	113	
41-	2917	5	99	
42-	2918	10	98	
43-	2924	5	97	
44-	2925	5	99	
45-	2926	5	87	
46-	2927	5	92	
47-	2924	5	93	
48-	2925	10	91	
49-	2926	15	105	
50-	2927	10	85	
51-	2929	10	83	
52-	2930	10	87	
53-	2936	5	109	} <u>DH 91-1</u> (0 - 21.3 m)
54-	2937	15	93	
55-	2938	10	96	
56-	2939	15	102	
57-	2940	15	97	
58-	2941	10	98	
59-	2942	15	82	
60-	2946	25	117	} <u>DH 91-2</u> (0 - 15.2 m)
61-	2947	55	118	
62-	2948	35	124	
63-	2949	25	116	
64-	2950	30	98	


ECO-TECH LABORATORIES LTD.
CLINT AYERS
LABORATORY MANAGER

SC91/KAM4

AFTON OPERATING CORPORATION

INTER-OFFICE LETTER

DATE: August 23, 1991

COPIES TO:

TO: Lorne Bond

FROM: Joe Mihalech

WHEN FEASIBLE, CONFINE LETTER
TO ONE SUBJECT

RE: ASSAYS ON M & R PERCUSSION DRILL SAMPLES, AUGUST 91

<u>TAG #</u>	<u>Cu (%)</u>	<u>Au (opst)</u>
2607	.010	L.0005
2608	.010	L.0005
2609	.021	.0005
2912	.016	L.0005
2913	.022	.0005
2914	.033	.0008
2932	.010	.0008
2933	.013	.0007
2934	.013	.0006
2935	.013	.0006
2943	.009	L.0005
2944	.012	L.0005
2945	.009	.0005
2621	.010	L.0005
2622	.009	L.0005
2623	.012	.0006
2635	.012	L.0005
2636	.009	L.0005

*DH 91-2
(33.5m-42.7m)*

*DH 91-4
(33.5-42.7m)*

*DH 91-5
(42.7m-54.9m)*

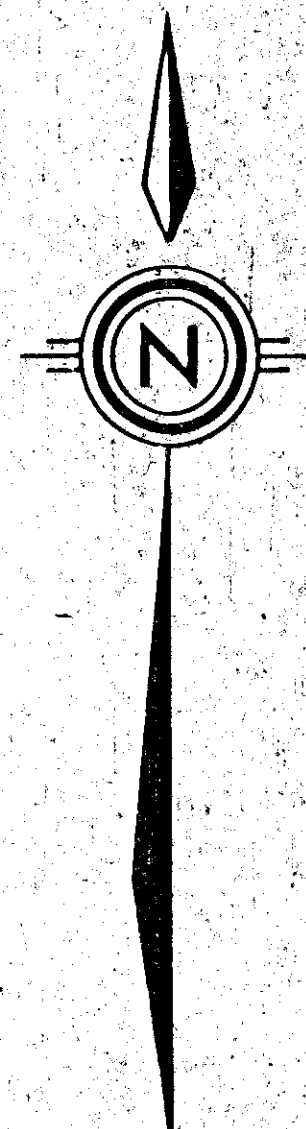
*DH 91-1
(21.3m-30.5m)*

*DH 91-3
(33.5m-42.7m)*


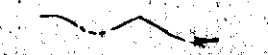
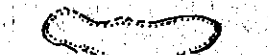

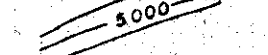



*DH 91-6
(30.5m-36.6m)*

Joe Mihalech
Chief Assayer

JM:ljd

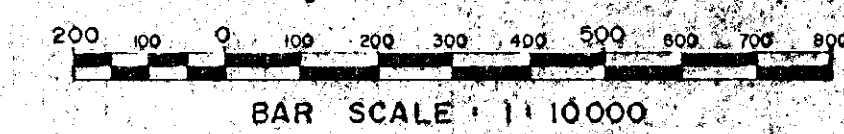


LEGEND

-  4x4 ROAD
-  CREEK, STREAM
-  LAKE, POND
-  SWAMP, MARSH
-  CONTOUR ELEVATIONS IN FEET
CONTOUR AT 500 FT. INTERVALS
-  CLAIM BOUNDARY
-  LOCATED CORNER POST
-  REVERSE CIRCULATION DRILL HOLES

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

21,795



AFTON OPERATING CORPORATION

**WALLOPER CREEK PROJECT
M & R CLAIM GROUP
1991 DRILLING**

Technical Work By:	L.B.	Scale:	1" = 10000'
Drawn By:	D.B.M.	Date:	OCTOBER, 1988
Revisions:	L. TSANG	Figure No.:	2

