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**Province of British Columbia**  
**Ministry of Energy, Mines and Petroleum Resources**

**PRELIMINARY MAP NO. 32**

**GEOCHEMICAL ORIENTATION SURVEY – HAZELTON AREA, BRITISH COLUMBIA**  
**(93M/3W, 4E)**

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In September 1978, the Rocher Deboule Range (93M, Hazelton, SW) was selected for a stream geochemical orientation study to assist in the interpretation of results of the Accelerated Geochemical Survey being conducted in adjacent Terrace (103I) and Nass River (103P) map-areas. The Rocher Deboule area was chosen because it is known to host multi-element mineralization including many of the elements analysed for in the Accelerated Geochemical Survey.

Figure 1 shows the survey areas. Figure 2 is a composite map of the geology, letter-coded mineral occurrences, and numbered sample location sites of the orientation survey.

Table 1 presents analytical results of stream sediments and stream waters. Sample sites were chosen above known workings to minimize possible contamination.

Stream sediment analyses range from background values for those samples distant from known prospects to anomalous values near reported mineralization. Relatively high uranium in stream waters is indicated by values greater than .10 ppb uranium.

**REFERENCES**

- Carter, N. C. and Kirkham, R. V. (1969): Geological Compilation Map of the Smithers, Hazelton, and Terrace Areas, *B.C. Ministry of Energy, Mines & Pet. Res.*, Prel. Map No. 69-1.
- Sutherland Brown, A. (1960): Geology of the Rocher Deboule Range, *B.C. Ministry of Energy, Mines & Pet. Res.*, Bull. 43.

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TABLE 1. METALS IN STREAM SEDIMENTS (IN PARTS PER MILLION) AND STREAM WATERS (IN PARTS PER BILLION)

SAMPLE	Zn	Cu	Pb	Ni	Co	Ag	Mn	Fe(%)	As	Mo	W	Hg	U	U-W	F-W	pH	COMMENTS
9002	124	270	30	44	32	.5	1 000	4.10	80	10	8	480	158	---	---	---	Near Hecla (U) Au, Cu, Ag
9003	108	440	8	114	80	.5	645	6.10	170	39	10	50	11	.02	10	6.8	May be influenced by Black Prince
9004	98	420	10	111	78	.2	630	5.80	190	31	6	60	10	.02	10	6.6	(J) Cu, W, Mo, Sn, Au, U
9005	56	265	8	21	22	.1	570	2.85	22	10	40	30	57	.60	10	7.1	Drains limonitic ridge
9006	42	450	12	12	18	.1	410	2.40	6	47	20	50	19	.02	10	7.0	Same as 9003, 9004
9008	14	140	4	4	4	.1	95	.80	2	6	5	20	3	.10	10	6.7	Near Mo, Cu occurrence (H)
9009	14	174	1	9	10	.1	110	2.65	90	9	110	10	9	.02	10	6.6	Near Mo and Cu occurrences
9010	26	200	2	17	11	.1	245	2.40	110	11	17	40	6	.02	10	6.8	(H) and (L)
9011	138	1 100	128	7	16	1.8	590	3.30	50	74	21	220	40	.02	10	6.9	Near Sultana (R) Mo, Ag, Cu, Au
9012	320	280	20	84	85	.4	2 900	7.40	190	9	8	80	2	.02	10	6.2	
9013	740	635	34	180	260	.9	6 050	6.50	570	15	16	90	4	.02	10	6.5	Near Red Rose (N) and Brunswick
9014	100	900	16	39	71	.5	1 900	5.30	250	40	8	90	3	.02	10	6.0	(O) W, Cu, Mo, Pb, Zn, Au, Ag
9015	130	1 000	60	44	82	1.0	795	7.40	999	34	30	60	19	.02	10	6.4	
9016	620	220	16	146	67	.1	1 400	17.00	190	17	6	50	2	.02	10	6.4	No nearby mineralization reported
9017	104	1 900	80	24	17	1.7	370	2.60	85	11	4	110	51	.05	10	6.6	Near Highland Boy (T) Cu, Au, Ag;
9018	78	280	30	18	14	.1	370	2.65	270	9	6	40	39	.34	10	6.9	above (E) and (F), W, U, Sn
9019	106	32	17	19	12	.1	540	2.50	13	2	2	100	5	.12	10	7.4	No nearby mineralization reported
9020	168	46	54	18	22	.2	1 400	3.10	9	2	2	180	5	.05	24	7.2	Main creek below lake
9022	138	64	23	31	24	.1	880	4.20	57	9	2	430	5	.02	10	7.0	
9023	46	70	3	10	8	.2	1 100	2.30	110	5	12	130	5	.05	10	7.3	
9024	60	78	5	14	15	.1	900	2.90	200	4	10	90	6	.05	10	7.0	
9026	104	32	16	14	19	.1	790	3.35	7	1	2	320	4	.10	10	7.6	No nearby mineralization reported
9027	82	20	10	12	8	.1	820	2.00	20	1	6	230	3	.40	68	8.1	
9028	102	44	12	21	16	.1	685	3.60	22	2	5	170	3	.02	10	7.2	
9029	50	72	5	15	10	.1	700	2.50	31	7	8	60	9	.24	10	7.0	Near Daley West (A) Cu, Au, Ag
9030	20	22	2	5	5	.1	240	1.45	2	4	9	40	6	.58	10	7.6	No nearby mineralization reported
9031	445	42	22	32	31	.4	1 800	3.00	110	4	2	260	3	.20	50	7.5	Near Cap (C) Cu, Zn, Ag, Au

Analytical method:

Minus 80 mesh silt sample digested in a mixture of hot dilute nitric and hydrochloric acid, and analysed by conventional atomic absorption spectroscopy.

Uranium in water (U-W) — fluorometrically.

Fluoride in water (F-W) — ion specific electrode.

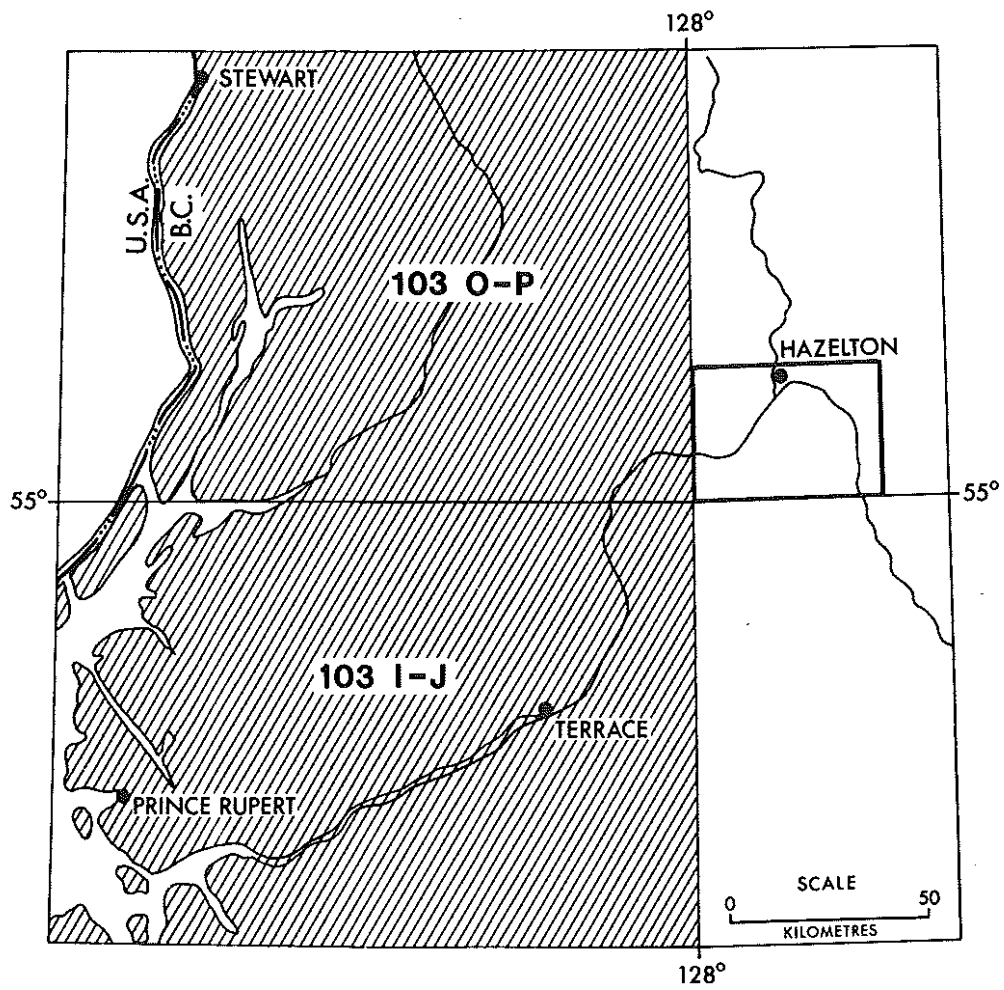


Figure 1. Location of orientation survey relative to accelerated geochemical survey coverage.

**LEGEND**

PLEISTOCENE AND RECENT



DRIFT AND ALLUVIUM

UPPER CRETACEOUS



INTRUSIVE ROCKS: QUARTZ MONZONITE, GRANODIORITE, QUARTZ DIORITE, AND PORPHYRYTIC AND FINE-GRAINED EQUI-VALENTS

LOWER CRETACEOUS



BRIAN BORU FORMATION: PREDOMINANTLY PORPHYRYTIC ANDESITE FLOWS



RED ROSE FORMATION: SHALE, SILTSTONE, GREYWACKE, CONGLOMERATE, HORNFELDS



MIDDLE TO UPPER TRIASSIC



GREYWACKE, SILTSTONE, MUDSTONE, QUARTZ AND CHERT PEBBLE CONGLOMERATE AND MINOR COAL

**SYMBOLS**

- 1 A DALEY WEST (Cu, Au, Ag)
- 2 B GOLDEN WONDER (Cu, Ag, Au, Sn, Ag)
- 3 C CAP (Cu, Zn, Ag, Au)
- 4 D VICTORIA (Au, Mo, Cu, U, Ag, As, Co, Zn)
- 5 E ROCHER DEBOULE (Cu, Au, Ag, Pb, Zn, U)
- 6 F GREAT OHIO (Cu, Pb, Zn)
- 7 G SPAULDING (Cu, W, Ag, Au)
- 8 H ----- (Mo, Cu)
- 9 I BLUE LAKE (Mo, W, Cu, Au)
- 10 J BLACK PRINCE (Cu, W, Mo, Sn, Au, U)
- 11 K LONE STAR (?)
- 12 L ----- (Mo)
- 13 M ----- (Cu)
- 14 N RED ROSE (W, Cu, Mo, Au, Ag)
- 15 O BRUNSWICK (Ag, Pb, Zn, Au, Cu)
- 16 P ----- (Mo)
- 17 Q ----- (Mo, Cu)
- 18 R SULTANA (Mo, Ag, Cu, Au)
- 19 S BIG THING (Mo, Cu)
- 20 T HIGHLAND BOY (Cu, Au, Ag, W, U, Sn)
- 21 U HECLA (Au, Cu, Ag)

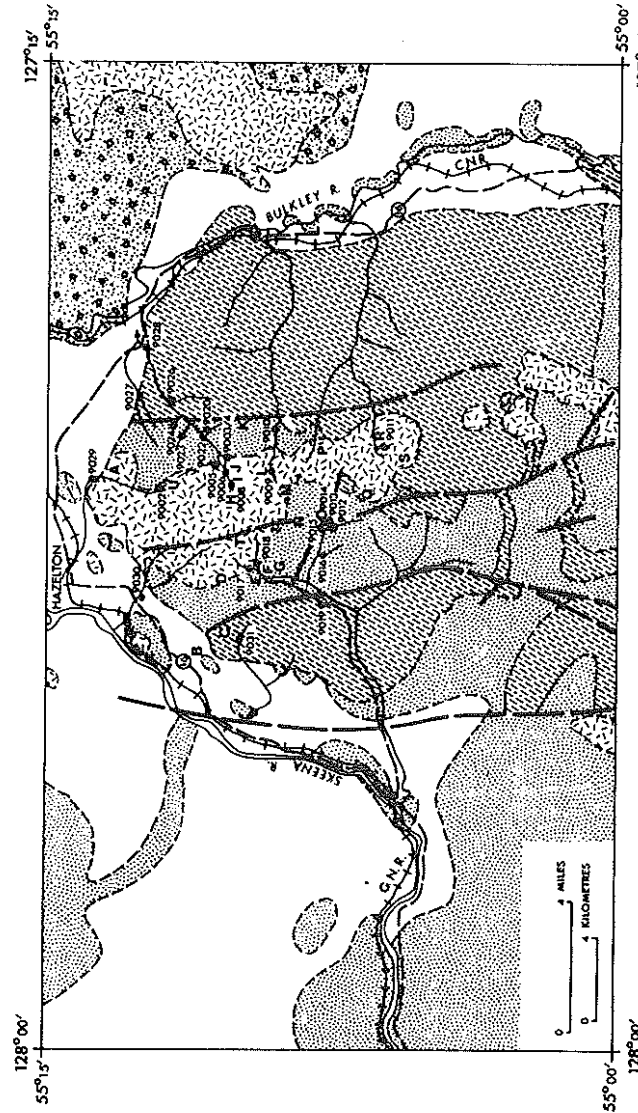


Figure 2. Geology, mineral occurrences, and sample location map  
Hazelton (93M southwest)  
after British Columbia Ministry of Energy, Mines and Petroleum Resources Map 68-1.