BRITISH COLUMBIA
PROSPECTORS ASSISTANCE PROGRAM
MINISTRY OF ENERGY AND MINES
GEOLOGICAL SURVEY BRANCH

PROGRAM YEAR:	1995/1996
REPORT #:	PAP 95-3
NAME:	WILLIAM WELSH

TECHNICAL REPORT

- FOR THE -

PROSPECTORS ASSISTANCE PROGRAM

- FOR -

QUARTZ CREEK AREA

GOLDEN MINING DIVISION

COVERING: Placer Claim "R. Buck I" (321328)

LOCATION:
(1) 51° 25' N, 117° 20' W
(2) NTS Map 82N/6W
(3) 30 km ENE of Golden, B.C.

PREPARED BY

William Welsh,
619 N. Fork Road, R.R. #1,
Lumby, B.C., V0E 2G0

September 27, 1995

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(1) INTRODUCTION

In the proposal submitted under the Prospector's Assistance program, the stated goals can be summarized as follows:

Prove or disprove the correlation of the Quartz Creek Thrust Fault and/or previously-measured geophysical anomalies with a gold-rich paleochannel (which is probably the northwest extension of the deposit mined during the 1920's to 40's by the Syndicate led by Kid Price).

This channel is especially attractive in light of new limitations being placed on placer mining by the Forest Practices Code introduced earlier this year, because it is located well outside of the *"riparian reserve", proposed in the code, and the potential for mining activity to result in degradation of the river is very low.*

If the geophysical method used was successful in revealing this channel, it was hoped that the method could be used elsewhere, either up or down the valley. Unfortunately, this method was not entirely successful and in addition, work was cut short unexpectedly by unforeseen medical circumstances.

(2) PROJECT LOCATION AND ACCESS

The claim forming the focus of the prospecting activity is Placer Claim "R. Buck I" (321328), and is located in the valley of Quartz Creek in the Northern Purcell Mountains 30 km WNW of Golden. B.C. (NTS Mapsheet 82N/6W, Lat. 51°-25'N, Long. 117°-20'W). The prospecting area is centred around Porcupine Creek, a local name for the southeast fork of Quartz Creek. Access is via the Trans Canada Highway to a point 40 km. northwest of the town of Golden, where the Quartz Creek Forest Access Road extends south from the highway along Quartz Creek. It is a gravel road in good condition, accessible by car. The camp is located 10 km. south of the highway on the "R. Buck I" claim, near the 50 km. road sign.

(3) PROSPECTING METHODS

(a) AIR PHOTO INTERPRETATION

An overlay on a copy of one of the pair of airphotos covering this area (Figure 1, next page) illustrates some of the features being discussed in this report. Old workings, seen both in the old hydraulic pit to the southeast, and in more recent workings to the northwest, lie within a linear feature that appears to be the paleochannel. This feature lies close to a VLF-EM anomaly from a survey done in 1984, and reported on in Assessment Report 12,761.

(b) GEOPHYSICS

The geophysical field survey consisted of a VLF electromagnetic survey utilizing a Sabre Model 27 VLF-EM receiver. The surveys were done on traverse lines at 100 metre intervals along the main access road, and readings were taken at 25 m. intervals both east and west of the road. The VLF receiver was tuned throughout the survey to the Seattle, WA transmitter (24.8 KHz.), which provided the best signal. At each station, the null dip angle and the field strength were measured, and the dip angle measurements were subsequently "filtered", using the method $(a + b) - (c + d)$ on subsequent groups of four sets of data to "smooth" the data. The anomalous point, if any, on each traverse line was presumed to be where the filtered dip angle changed sign, and where the field strength was maximum. Readings, and filtered data are listed in Appendix E, and data are plotted on the map (Appendix G). A total of 101 readings were taken, for 2.525 line-km. Survey control was obtained by means of a Magellan Trailblazer G.P.S., to verify the location of claim posts with respect to map coordinates, but for the most part the grid and road were surveyed by 100 m. survey chain and compass.

(c) TEST PITS

Locations for five test pits were chosen based on the location of VLF crossovers, and maximum field strength. However, due to soft and wet ground conditions, it was generally

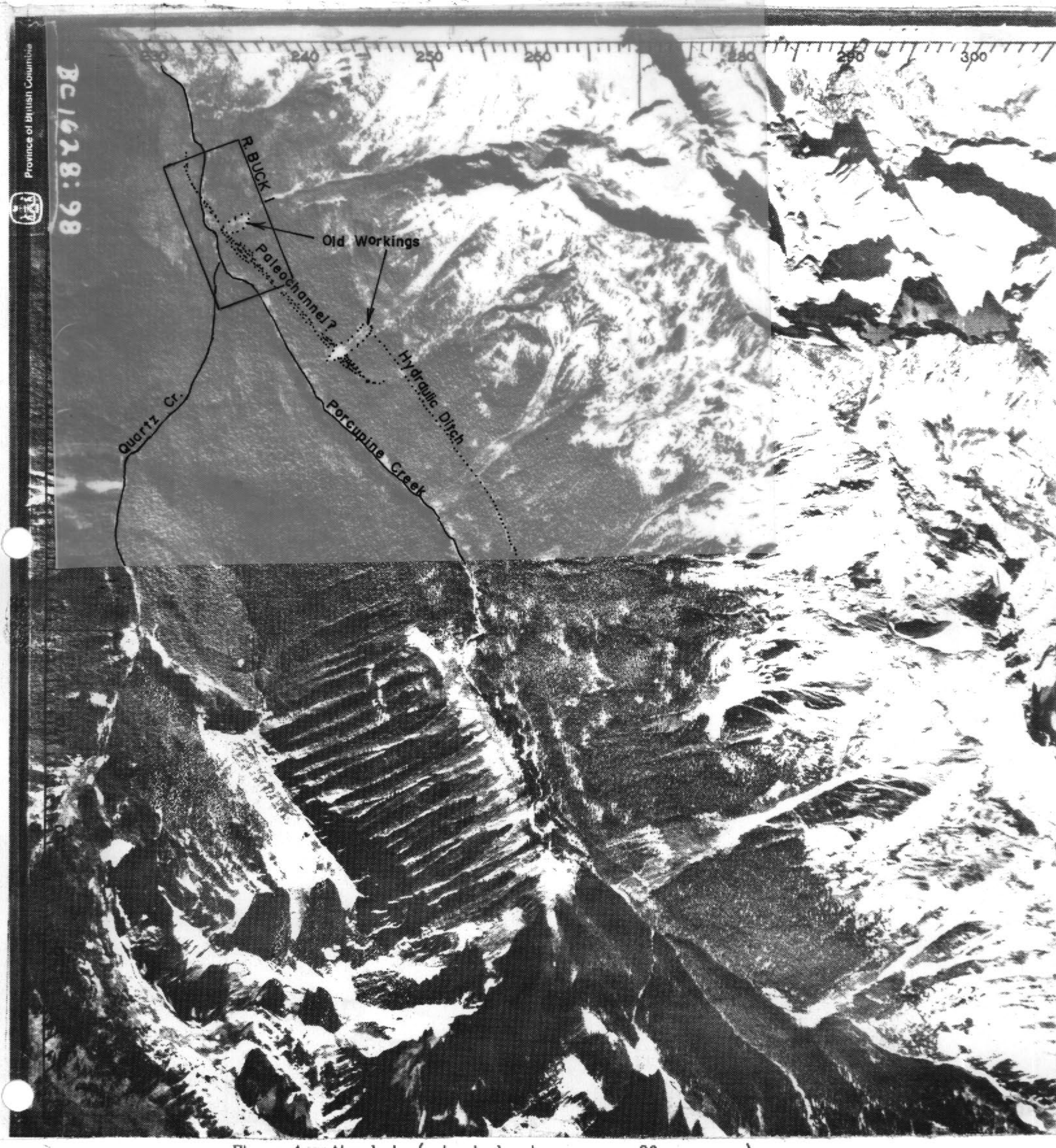

Figure 1. Air photo (prior to logging, approx. 20 years ago)

not possible to dig the pits in the most optimum location. Excavating was carried out by a Case 580 backhoe/loader, and for the most part the pits were excavated to dimensions of roughly 3m x 3m x 3m, or to whatever depth could be attained.

In turn, each pit was dewatered, and by means of an aluminium step ladder pit sections were logged and five-gallon pail samples were taken over each interval. The Pit Sections are drawn above the map depicting the geophysical survey (Appendix G) and the pit logs are listed in Appendix F. The samples were sluiced individually and their various mineralogical characteristics and gold content were noted. Finally, sluicing was done on the muckpiles excavated from each hole, as a form of bulk sampling but as mentioned earlier, not all the material could be processed as the field season came to an end earlier than planned. Pits # 2 and #5 were completed (and reclaimed), Pits #1 and #3 were half-completed, but Pit #4 was not started. In general, however, there was enough information gained from the sluicing that was done to draw conclusions. The sluicing system utilized a layout of flumes so that both oversize material off the grizzly, as well as washed sand and waste water were returned to the excavation, thereby simultaneously backfilling while processing the material, as well as eliminating the discharge of dirty water to the environment (see photo, next page).

Figure 2. Sluicing Method

(4) RESULTS AND DISCUSSION

(a) Results

The VLF receiver showed variations in readings consistent with the previous survey and a response over test pits where gold was found before to provide convincing evidence of the validity of measurements. However, on excavation of the test pits, it could be seen that the gold was limited to both the top half-metre and the bottom half metre, with up to two metres of relatively barren material (though of the same appearance and composition) in between. This layer introduced a component of dilution amounting to 60% or more, severely impacting the viability of this deposit. Results are tabulated below:

PIT	LENGTH	WIDTH	DEPTH	m^3 VOLUME	m^3 MINED	RECOVERED g.Au	g/m^3
1	3.6	2.0	2.8	13.7	4.5	0.6	0.13
2	3.5	3.6	3.0	22.0	20.0	1.7	0.09
3	5.8	3.4	3.7	44.3	11.0	0.6	0.06
4	4.0	3.0	3.1	11.7	-	-	-
5	2.5	2.0	2.4	7.1	7.1	0.2	0.03
				======	======	====	=====
TOTAL:				53.8	42.6	3.1	0.07

Though extremely discouraging, the gold that was recovered was tantalizing because it was very coarse and occurred in rich pockets that unfortunately did not show up with great regularity. Microscopic examination of the concentrates with the visible gold removed revealed the presence of a high concentration of very fine, micron-sized gold particles that would definitely return multiple-ounce gold assays.

(b) Geological Interpretation and Placer Potential

Interpretation of this placer gold deposit is complicated by the fact that it originated as a result of two distinct geological processes, and is therefore a composite of two types: 1) eluvial, and 2) glaciofluvial.

The glaciofluvial deposit occurs near surface (immediately below the organic A-horizon), and represents a period of high sedimentation, the sediment having been derived from the glacier (as indicated by the wide range of clast lithologies) and likely deposited in a high-energy aggradational setting, either a subglacial meltwater conduit or an ice-marginal meltwater channel. The topography is hummocky, which suggests stagnating ice blocks were associated with the deposition of the glaciofluvial gravels during deglaciation. The layer at the surface containing the gold also contains coarse boulders, probably deposited during high-flow events prior to the final abandonment of the glaciofluvial system.

The lower gold-rich deposit, immediately above the disintegrated phyllite that underlies most of the valley bottom, however, likely represents an eluvial deposit derived from an easily-eroded, but widespread lode gold deposit that formed as a result of hydrothermal activity related to the emplacement of buried igneous intrusions. The upper gold-rich layer is likely a re-worked form of the eluvial deposit, and is consequently of lower grade as a result of the introduction of glacially-derived sediment.

It is possible that the excavations did not intersect the lower gold-rich layer at its thickest, and it is probable that the economic deposits are of small extent. The middle, barren layer of clayey till, over 1 metre in thickness, critically impacts the viability of the deposit as a commercial venture. In the past, these difficulties were overcome by the ability to process very large quantities of sediment by hydraulic methods, but these methods are no longer practical. In short, although gold is present, and sometimes in high concentrations, the viability of this deposit is dependent on the ability to efficiently mine large quantities of material, and this is made more difficult by the presence of very large boulders, and clay.

5. BIBLIOGRAPHY

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2. KNIGHT, John. (1995) "The Use of the Characteristics of Gold for Exploration in Glaciated Mountainous Areas, with an example from the Kootenay District, SE B.C.", in EMPR Paper 1995-2, DRIFT EXPLORATION IN THE CANADIAN CORDILLERA, pp. 127-133.

3. LEVSON, V.M. and GILES, T.R. (1993) GEOLOGY OF TERTIARY AND QUATERNARY GOLD-BEARING PLACERS IN THE CARIBOO REGION, B.C. (93A, B, G, H) EMPR Bulletin 89, pp. 51-2, 84.

4. WOODWARD, Lee A. (1994) " Relation of gold placers in Montana to bedrock geology -- Implications for lode exploration." in *Proceedings* Metallogeny of the Belt-Purcell Basin: Southern B.C. and Northern U.S. Rockies", Sept.30 - Oct. 5, 1994, Cranbrook, B.C. , pp. 45-60.

APPENDICES

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PROSPECTORS ASSISTANCE PROGRAM
PROSPECTING REPORT FORM (continued)

B. TECHNICAL REPORT

- One technical report to be completed for each project area.
- **Refer to Program Requirements/Regulations, section 15, 16 and 17.**
- If work was performed on claims a copy of the applicable assessment report may be submitted in lieu of the supporting data (*see* section 16) required with this TECHNICAL REPORT.

Name WILLIAM WELSH Reference Number 95/96 P006

LOCATION/COMMODITIES

Project Area (as listed in Part A) QUARTZ CREEK MINFILE No. if applicable 082N 018

Location of Project Area NTS 82N/6W Lat 51°-25' N Long 117°-20' W

Description of Location and Access CLAIM IS LOCATED 30 km WNW OF GOLDEN, B.C. ACCESS IS VIA T-C Hwy. 40 km WEST OF GOLDEN, THEN 10 km SOUTH ON QUARTZ CREEK FOREST ACCESS ROAD.

Main Commodities Searched For Au

Known Mineral Occurrences in Project Area PLACER Au

WORK PERFORMED

1. Conventional Prospecting (area) HAND PANNING OVER PROSPECTIVE NEW CLAIM
2. Geological Mapping (hectares/scale)
3. Geochemical (type and no. of samples)
4. Geophysical (type and line km) VLF-EM 2.5 line-km
5. Physical Work (type and amount) PROCESSING (SLUICING) 42.6 m^3 GRAVEL
6. Drilling (no,. holes, size, depth in m, total m) 5 TEST PITS - 3m × 3m × 3m
7. Other (specify) SAMPLING & TESTING OF INTERVALS IN TEST PITS

SIGNIFICANT RESULTS

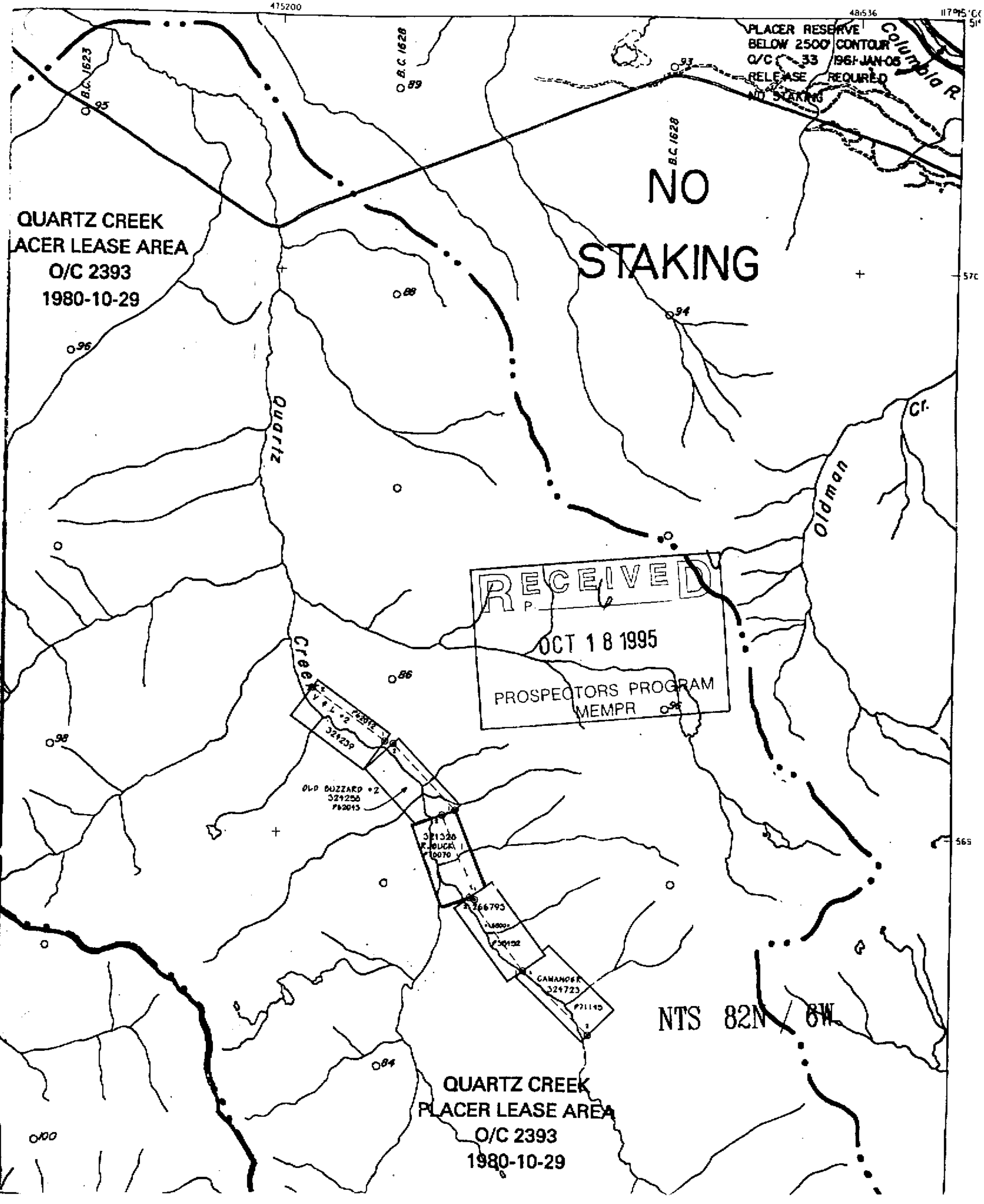
Commodities Au Claim Name R. BUCK I (321328)

Location (show on map) Lat 51°-25' N Long 117°-20' W Elevation 1615 m

Best assay/sample type 0.13 g/m^3

Description of mineralization, host rocks, anomalies BEST GOLD CONCENTRATIONS WERE FOUND IN THE FORM OF AN ELUVIAL DEPOSIT, APPROXIMATELY 2.5 m BELOW SURFACE. A VLF ANOMALY MOST LIKELY REFLECTED THE QUARTZ CREEK THRUST FAULT, NOT NECESSARILY RELATED TO A DISCRETE BURIED CHANNEL THAT WAS BEING SOUGHT.

Supporting data must be submitted with this TECHNICAL REPORT



475200
481536
PLACER RESERVE
BELOW 2500' CONTOUR
O/C 33 1961-JAN-06
RELEASE REQUIRED
NO STAKING
Columbia R.
B.C. 1623
B.C. 1628
B.C. 1628
QUARTZ CREEK
PLACER LEASE AREA
O/C 2393
1980-10-29
NO
STAKING
Quartz
Creek
Oldman
Cr.
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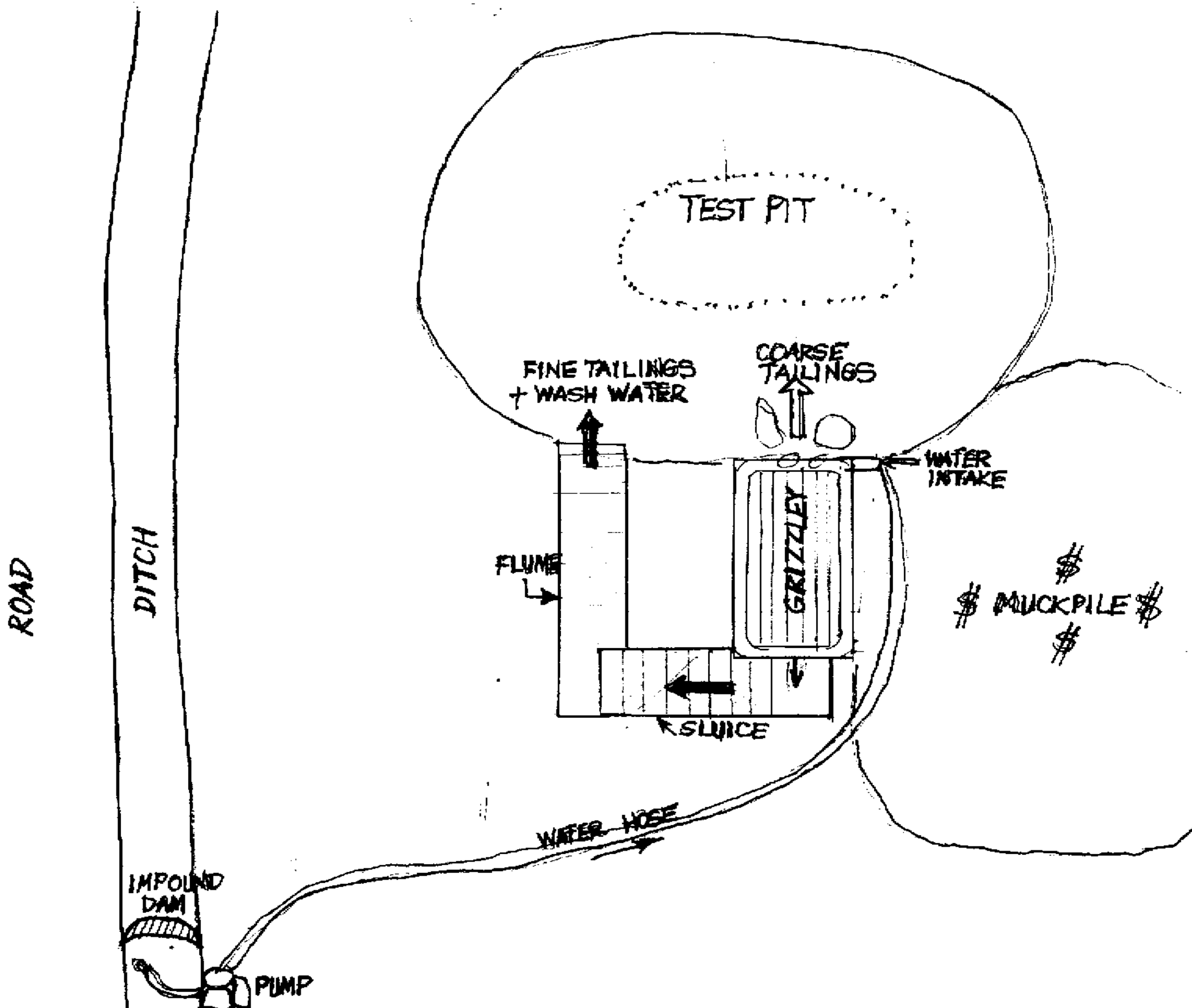
OLD BUZZARD #2
324256
P62013
324239
321326
266793
CAMANCHE
324723
P71145
NTS 82N / 6W
QUARTZ CREEK
PLACER LEASE AREA
O/C 2393
1980-10-29



SCHEMATIC DIAGRAM OF "PRE-PRODUCTION" TEST PIT

NOTE — VIRTUALLY ENTIRE VOLUME OF EXCAVATED MATERIAL IS RETURNED TO TEST PIT.

— DIRTY WATER WILL BE CONFINED IN TEST PIT

SIGNED,

PROFESSIONAL ENGINEER · PROVINCE OF BRITISH COLUMBIA · B.J. WELSH

B.J. Welsh, P. Eng.
Mar. 23, 1995

GEOPHYSICAL DATA -- VLF SURVEY

Sabre Model T102 VLF Reciever
Station: Seattle

100 m line spacing, road as baseline
25 m stations (+)ve = East
(-)ve = West

LINE	OFFSET	RAW DATA NULL	RAW DATA Field Str	FILTERED NULL	FILTERED Field Str.	
0 + 00	-100	4	32.50		100%	
	-75	2	33.00	11	102%	
	-50	-1	34.00	13	105%	<---- X-over
	-25	-4	33.50	-1	103%	
	00	-8	33.00	-20	102%	
	+25	4	32.50	-20	100%	
	+50	4	33.00	-12	102%	
	+75	12	33.00	4	102%	
	+100	8	32.50		100%	
	+125	4	32.50		100%	
1 + 00	-100	-1	34.00		106%	
	-75	4	34.00	-1	106%	
	-50	0	34.50	-10	108%	
	-25	4	35.00	-14	109%	<---- X-over
	00	10	32.00	0	100%	
	+25	8	32.00	4	100%	
	+50	6	34.00	2	106%	
	+75	8	33.00	8	103%	
	+100	4	33.00	10	103%	
	+125	2	32.00		100%	
	+150	0	32.00		100%	
2 + 00	-100	0	33.00		108%	
	-75	-6	34.50	-10	113%	<----
	-50	2	32.50	-22	107%	
	-25	2	33.00	-18	108%	
	00	16	34.00	12	111%	<---- X-over
	+25	6	33.00	18	108%	
	+50	0	32.00	2	105%	
	+75	4	32.50	2	107%	
	+100	0	30.50	2	100%	
	+125	2	31.00		102%	
2 + 65	-50	0	34.50		100%	
	-75	0	37.50		109%	
3 + 00	-100	4	36.50		101%	
	-75	-4	37.50	2	104%	
	-50	0	39.00	-12	108%	
	-25	-2	39.00	-28	108%	
	00	10	40.00	-18	111%	<---- X-over
	+25	16	37.00	10	103%	
	+50	10	37.00	16	103%	
	+75	6	37.00	12	103%	
	+100	4	39.00		108%	
	+125	0	37.00		103%	
3 + 25	00	8	36.00		100%	
	+25	-10	37.00		103%	
3 + 50	00	4	36.00		100%	
3 + 75	-25	-6	38.00		106%	
	00	2	39.90		111%	
	+25	6	41.50		115%	<---- X-over
	+50	14	39.00		108%	

4 + 00	-75	-4	37.00		100%	
	-50	-10	38.50	-12	104%	
	-25	-4	38.50	-24	104%	
	00	2	38.00	-14	103%	<---- X-over
	+25	8	38.00	4	103%	
	+50	4	37.00		100%	
	+75	2	37.00		100%	
5 + 50	-100	0	33.00		100%	
	-75	-2	33.00	-6	100%	
	-50	0	33.50	-14	102%	
	-25	4	34.50	-8	105%	
	00	8	35.50	6	108%	<---- X-over
	+25	4	34.00	6	103%	
	+50	2	33.50	0	102%	
	+75	4	33.50		102%	
	+100	2	33.00		100%	
7 + 00	-100	4	32.00		100%	
	-75	4	33.00	14	103%	
	-50	-2	33.00	2	103%	
	-25	-4	34.00	-20	106%	<---- X-over
	00	4	34.00	-18	106%	
	+25	10	33.50	2	105%	
	+50	8	32.50	10	102%	
	+75	4	32.50		102%	
	+100	4	32.50		102%	
8 + 00	-100	6	32.00		100%	
	-75	8	32.00	18	100%	
	-50	0	33.00	16	103%	
	-25	-4	33.50	-6	105%	<---- X-over
	00	-4	33.00	-18	103%	
	+25	6	33.00	-6	103%	
	+50	4	32.50	4	102%	
	+75	4	32.50	6	102%	
	+100	2	32.00	-2	100%	
9 + 00	-100	8	32.50		100%	
	-75	4	32.50	12	100%	
	-50	4	34.00	16	105%	
	-25	-4	33.50	-2	103%	<---- X-over
	00	-4	33.00	-18	102%	
	+25	6	33.00	-8	102%	
	+50	4	32.50	0	100%	
	+75	6	32.50		100%	
	+100	4	32.50		100%	
10 + 00	-100	0	32.00		103%	
	-75	4	31.50	14	102%	
	-50	-4	31.50	8	102%	
	-25	-6	31.00	-10	100%	
	00	-2	32.00	-8	103%	
	+25	2	33.00	2	106%	<---- X-over
	+50	-2	33.00		106%	
	+75	0	32.00		103%	

100 stations X 25m = 2.5 line-km.

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TEST PIT CROSS-SECTIONS

PIT #1

From	To (m)	Description
0.0	0.3	organic - peat moss
0.3	0.9	red sandy-stony loam, free draining, rounded clasts, mostly quartzite
0.9	2.3	red-brown clay matrix, pebble- to cobble-sized clasts, various lithology.
2.3	2.8	brown clay matrix, abundant angular white quartz pebbles, magnetite and Au present.
eoh		cemented sandy gravel hardpan at bottom, backhoe can't rip;

PIT #2

From	To (m)	Description
0.0	0.4	organic - peat moss
0.4	0.9	red sandy-stony loam, free draining, rounded clasts, mostly quartzite
0.9	2.6	red-brown clay matrix, pebble- to cobble-sized clasts, various lithology. (limestone, dolomite, quartzite, conglomerate--not found locally)
2.6	3.0	grey clay matrix, abundant angular white quartz pebbles, grading into weathered grey phyllite, Au-rich
eoh		phyllite too hard to dig.

PIT #3

From	To (m)	Description
0.0	0.3	organic - peat moss
0.3	0.5	red-brown silty clay, rounded cobbles. Some greyish, more clay-rich lenses, rich in Au, pyrite, and magnetite
0.5	3.1	red-brown clay matrix, pebble- to cobble-sized clasts, various lithology. (limestone, dolomite, quartzite, slate), abundant coarse pyrite cubes, Au-poor.
3.1	3.7	grey clay matrix, abundant angular white quartz pebbles, grading into weathered grey phyllite, Au-rich
eoh		phyllite too hard to dig.

PIT #4

From	To (m)	Description
0.0	0.4	organic - peat moss
0.4	0.6	light brown-grey ash layer.
0.6	2.5	red-brown clay matrix, pebble- to cobble-sized clasts, various lithology. (limestone, dolomite, quartzite)

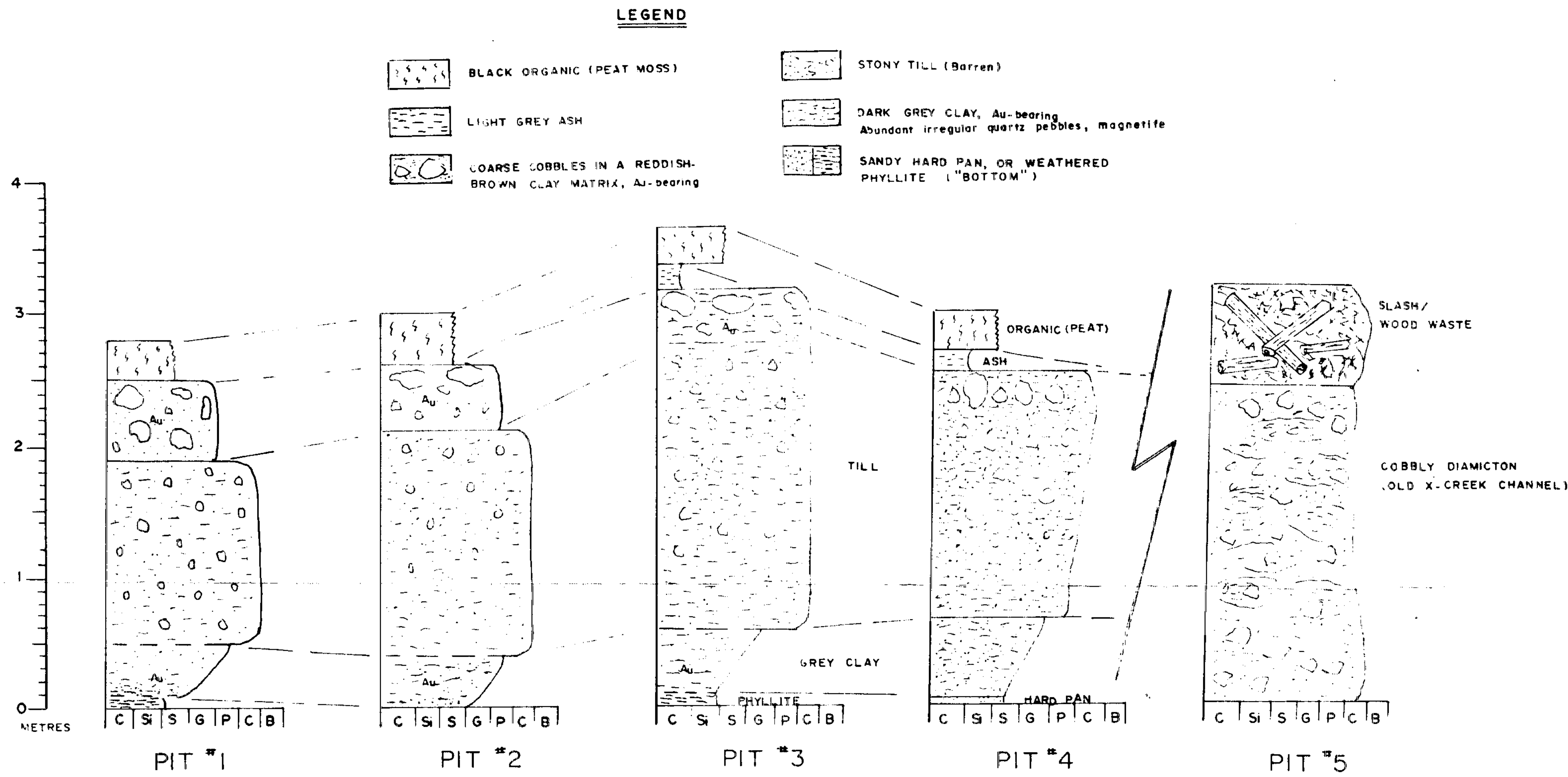
2.5	3.1	grey clay matrix, abundant angular white quartz pebbles, grading into weathered grey phyllite, Au-rich
eoh		phyllite too hard to dig.

PIT #5

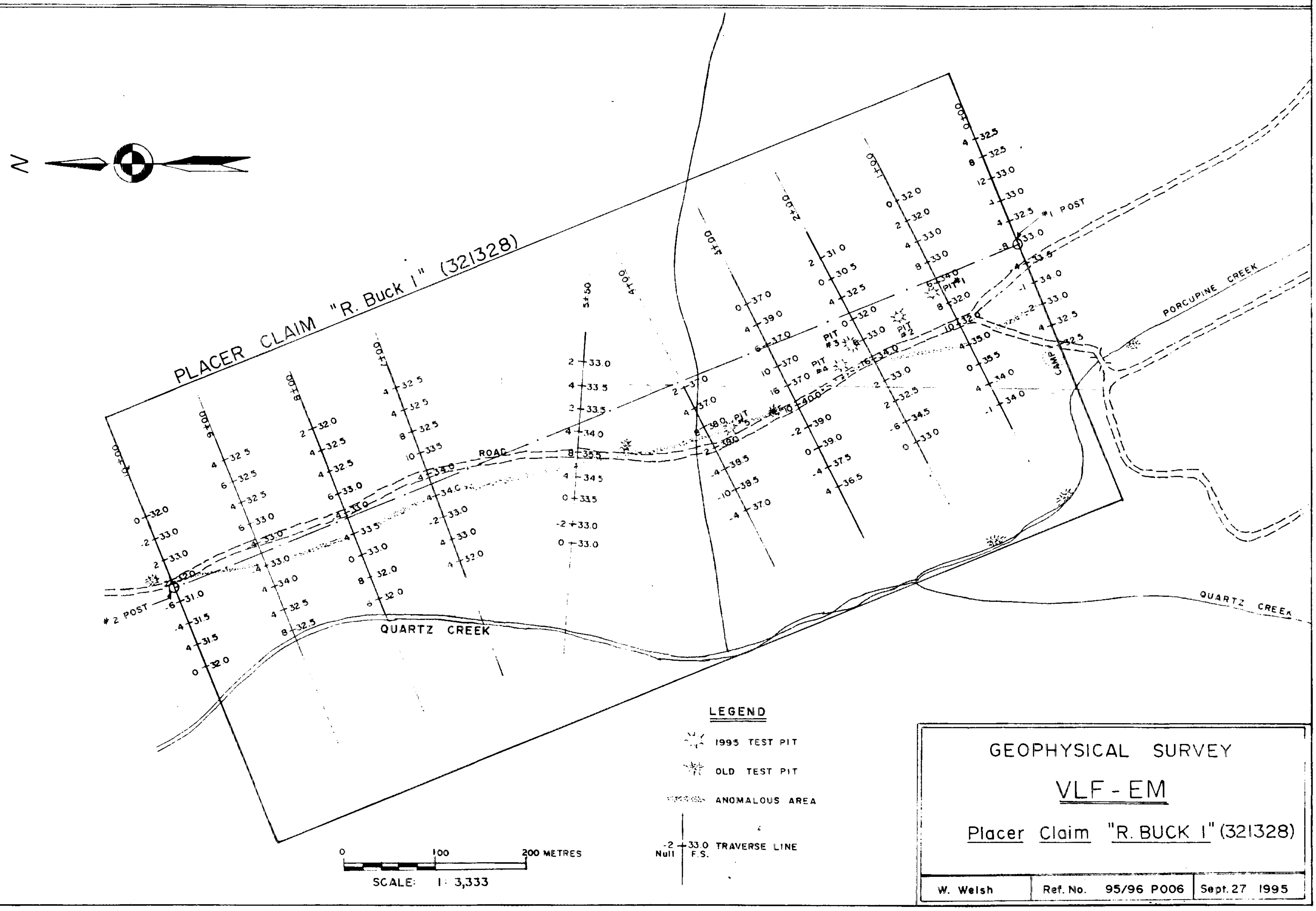
From	To (m)	Description
0.0	0.8	organic - slash pile/wood waste
0.8	3.2	braided river gravel
eoh		

TEST PIT CROSS-SECTIONS

(see locations below)



C = clay
Si = silt
S = sand
G = granule
P = pebble
C = cobble
B = boulder



GEOPHYSICAL SURVEY

VLF - EM

Placer Claim "R. BUCK I" (321328)

W. Welsh	Ref. No. 95/96 P006	Sept. 27 1995