SUB-RECORDER	LOG NO:	RD.
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GEOLOGY AND SOIL GEOCHEMISTRY SMOKE, TRAK, CREEK SIDE ET AL. MINERAL CLAIM GROUP SLOCAN MINING DIVISION PAYNE MOUNTAIN SANDON, B.C. NTS 82 K/3 W AND 3 E LATITUDE 50°01'30"N, LONGITUDE 117°15'W

Prepared for

MINOTAUR EXPLORATIONS LTD.

ARCTEX ENGINEERING SERVICES

Locke B. Goldsmith, P.Eng., P.Geo. Consulting Geologist

January 29, 1992



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GEOLOGY AND SOIL GEOCHEMISTRY SMOKE, TRAK, CREEK SIDE ET AL. MINERAL CLAIM GROUP SLOCAN MINING DIVISION PAYNE MOUNTAIN SANDON, B.C.

SUMMARY

Geological mapping has identified a drill target within a fracture zone which is situated 175 metres into the footwall and parallel to the formerly productive Payne vein. A reserve of high-grade silver-lead-zinc could be identified by diamond drilling.

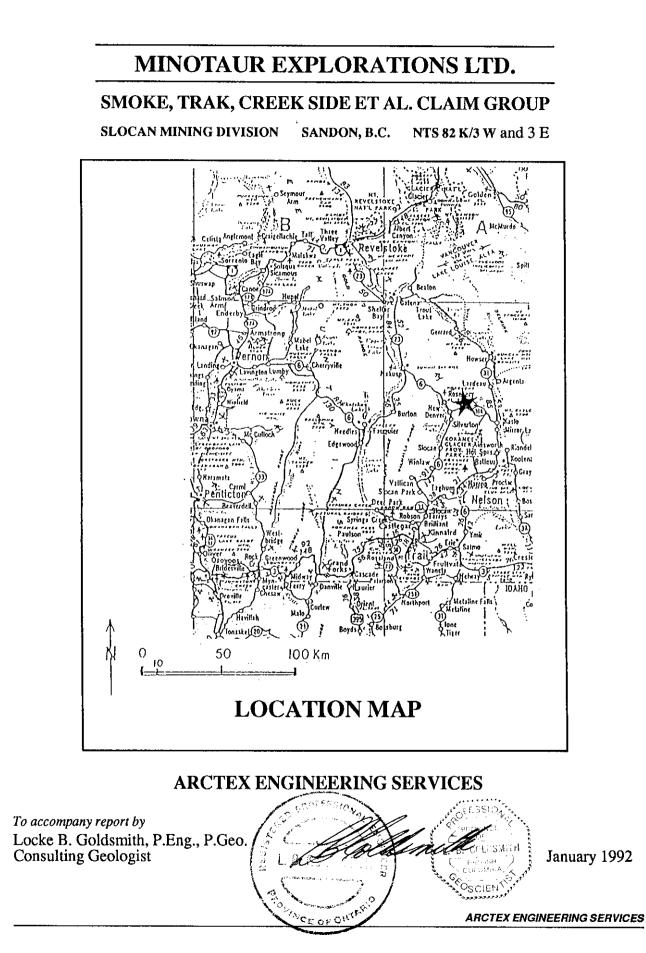
A budget of \$50,600 for approximately 300 metres of drilling and peripheral services is estimated.

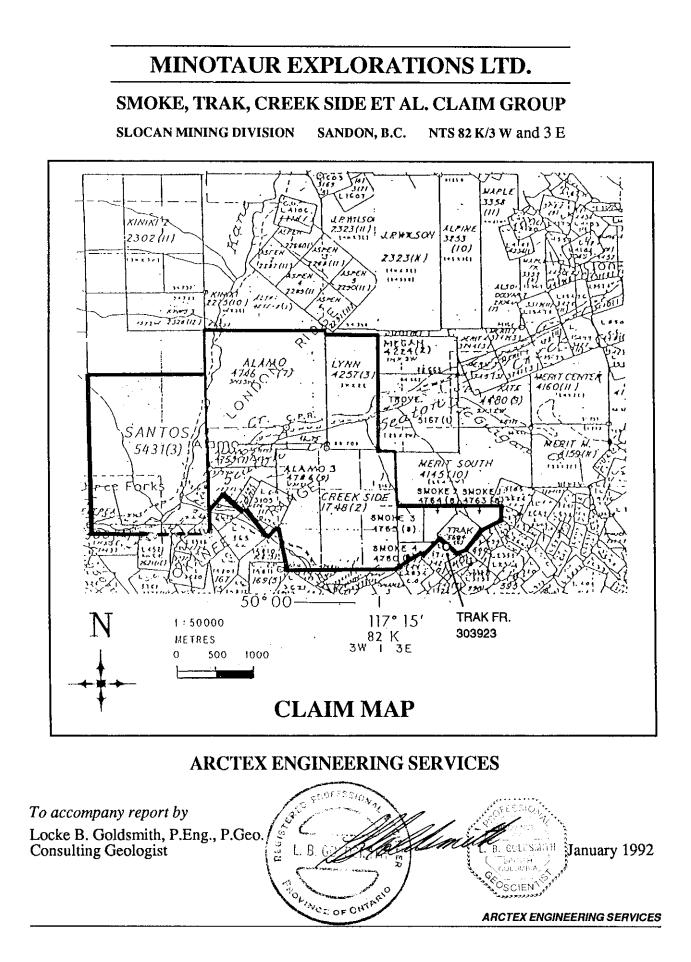
PROPERTY, LOCATION, ACCESS

The claim group covers the western ends of London Ridge, Seaton Creek and Kane Creek valleys, the northern tip of Payne Ridge, and extends across Carpenter Creek in the southwest corner of the Creek Side claim. Highway 31A, which joins New Denver and Kaslo, crosses the Alamo and Lynn claims in Seaton Creek valley. The gravel road which trends southeasterly from Highway 31A at Three Forks to Sandon provides access through the southern portion of the property. A logging road extends from Highway 31A into the northern part of the Alamo claims. Dirt roads in the Smoke claims lead to the Payne Mine from Sandon. Elevations range from 760 m (2500') near Three Forks to 1940 m (6350') on Payne Ridge in the southeast corner of the Smoke 1 claim.

The contiguous group consists of 15 claims and fractions totalling 49 units, less indentations around the outer boundary for a net of approximately 44 units (1100 hectares). Recording data are as follows:

Claim Name	Size in Units	Lot Number	Record Number	Record Date
Lynn	6	· · · · · · · · · · · · · · · · · · ·	4257(3)	Mar.21, 1984
Alamo	9		4746(7)	Jul. 9, 1985
Alamo 2	2		4759(7)	Jul. 30, 1985
Alamo 3	2		4786(9)	Sep. 3, 1985
Creek Side	9		1748(2)	Feb. 18, 1981
Ouray	1	3109	1676(1)	Jan. 17, 1981
Ouray Fr.	1	1017	1676(1)	
Nellie Fr.	1	3108	1677(1)	**
Smoke 1	1		4763(8)	Aug. 2, 1985
Smoke 2	1		4764(8)	11
Smoke 3	1		4765(8)	"
Smoke 4	1		4780(8)	Aug. 30, 1985
Santos	12		5431(8)	Aug. 21, 1987
Trak	1		5684(5)	May 9, 1988
Trak Fr	1		303923	Sept. 11, 1991





HISTORY

No history of production is known. Only short adits and small trenches have been observed. Recorded work prior to 1986 has been mainly soil geochemistry and geological mapping by various operators from 1980 to 1985; VLF-EM was conducted by Sookochoff in 1980 and 1981. From 1986 through 1988 soil geochemistry, geological mapping, and trenching have been completed on various parts of the claim group by the author of this report. Titles of reports which document all of the above work with company names where available are included on the References pages.

Maps of the Creek Side detail area and Smoke-Trak area have been amended by the addition of soil geochemistry and geological mapping which was undertaken during September and October 1991.

GEOLOGY AND MINERALIZATION

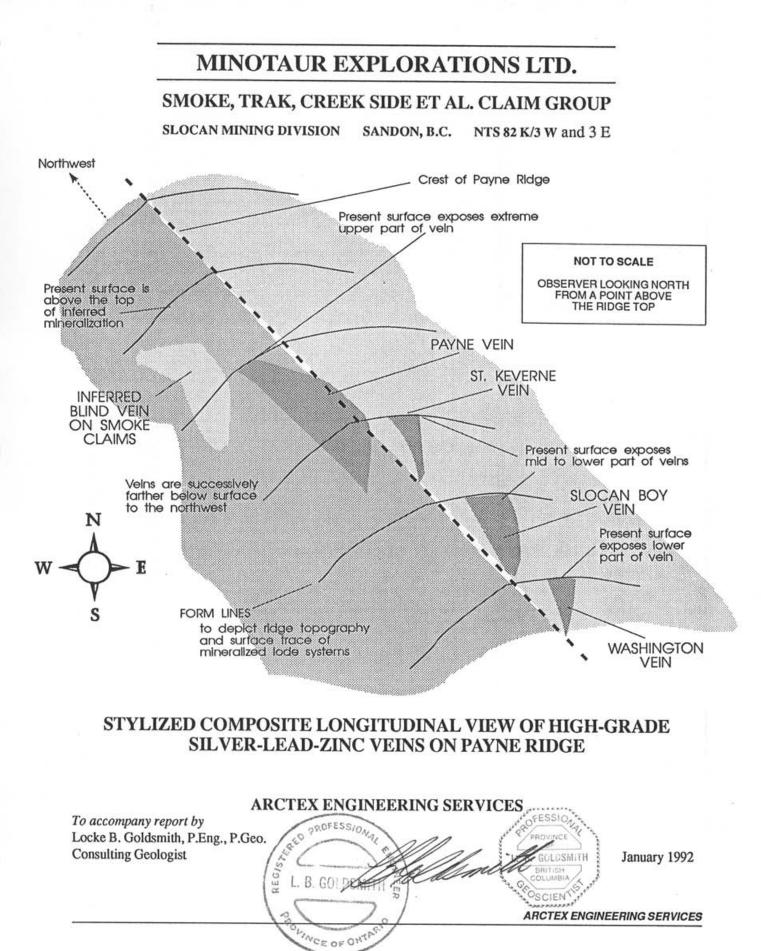
The claims are underlain by clastic sediments of the Triassic-Jurassic Slocan Group. Bedding and foliation strike northwesterly with variable dips which are predominantly southwesterly. Granitic dykes and small stocks intrude the sediments. Fracture directions trend northeasterly and northwesterly. Formerly productive northeast-trending fissure-filling veins, which include the Payne, Monitor, Cork, and Victor (Violamac) deposits, occur to the southwest of the claims.

Detailed geological mapping has been completed on the Smoke and Trak claims and the area around the Payne Mine. The competent argillite and limestone rocks which host the Payne vein have been traced into the Smoke claims. Splays of a fracture zone have been observed parallel to the Payne vein in non-competent shale and shaly argillite in and near adits on the Trak claim.

Attitudes of foliation (which in some outcrops may also be bedding) on opposite sides of the Payne vein structure show deflections. Similar deflections can be seen in several locations on the Smoke and Trak claims where a fracture zone is either observed or inferred (see Interpretive Geology Map, in pocket of this report).

Production from the Payne Mine is listed in MINDEP files of the University of British Columbia as:

Tons	Ag	Pb	Zn
	oz/ton	%	%
121,921	30.7	15.7	1.57



This figure includes a considerable amount of low-grade ore which was mined towards the end of the mine life. Early silver grades were approximately 180 oz/ton.

SOIL GEOCHEMICAL SURVEY

The following table displays statistical data concerning metal abundance derived from lognormal probability plots. Years of soil sampling results over Slocan Group rocks have been compiled into this information.

	Ag ppm	Pb ppm	Zn ppm
Background	<2.3	<38 }	Possibly two populations
Threshold	2.3 to 4.9	38 to 150 J	populations
Anomalous	>4.9	>150	>980

A long, narrow spade was used to collect samples from a depth of 0.15 to 0.35 m below surface. This depth generally corresponds with the "C" soil horizon. Samples were packaged in wet-strength manila envelopes. Geochemical analyses were carried out by Chemex Labs of Vancouver, B.C. Analytical procedures and results are included in the Appendix.

Smoke and Trak Claims

The grid was extended across the Payne Mine workings to provide comparative data. Anomalous values are present adjacent to the workings, but the geochemical indications do not persist more than a few metres to either side of the stopes or the trace of the vein.

A threshold pattern of silver and lead on the Trak claim which trends northwesterly appears to be underlain by shale (often graphitic) and shaly argillite. This unit may have contributed metals for remobilization into fissure veins. A few threshold lead values are present within argillite and limestone on the presumed trace of a mineralized structure.

Creek Side Claim

The grid was extended southerly to check the possible extension of elevated geochemical values which were obtained in earlier surveys. No additional anomalies were located.

DISCUSSION

The Interpretive Geology Map (pocket in back of report) and the Stylized Composite Longitudinal View (page 6) should be examined in conjunction with this synthesis.

Productive veins which have been mined on Payne Ridge occur approximately 150-200 metres apart. Within and near the map area these are the Payne, St. Keverne, Slocan Boy, and Washington. Continuing southeasterly, the Sapphire, Majestic, and Hallmac are also spaced at approximately 200 metres. The target area is 175 metres northwest of the Payne vein. The elevations of each deposit in the area of interest appear to be descending towards the northwest.

Outcrop of high-grade mineralization along the Payne structure was only about 40 metres in length. On the second and third levels the length of ore increased to approximately 150 metres, and persisted downward to as low as the 10th level, a dip length of some 325 metres. Widths varied to a maximum of 12 metres, averaging perhaps 3 metres. It is suggested that the next mineralization to the north should apex somewhat lower than the top of the Payne vein. Competent argillite and limestone beds trend along the ridge top and are wallrocks to each of the deposits. Periodicity of the productive veins/fissures strongly suggests that the next mineralization should be contained within the target area.

A fissure or fissures with silver-lead-zinc mineralization are exposed in the Ocean adits to the southwest of the Smoke et al. claims. Host rocks are fissile shales which did not maintain open spaces to allow filling with metallics. If projected northeasterly along the typical trend of lode structures in the camp, the fissure zone passes close to adits on the Trak claim and through the target area. Flexures in foliation attitudes are noted on opposite sides of this zone in several locations.

Geochemical signatures are weak in the target zone, but a few lead values may mark the location of a subcropping lode.

It is inferred that high-grade silver-lead-zinc is present at shallow depths within this zone.

CONCLUSIONS

Direct and indirect evidence has led to the conceptualization of a target at shallow depth which can contain important high-grade reserves of silver-lead-zinc.

RECOMMENDATIONS

A preliminary diamond drilling program of approximately four holes totalling 300 metres should be commenced.

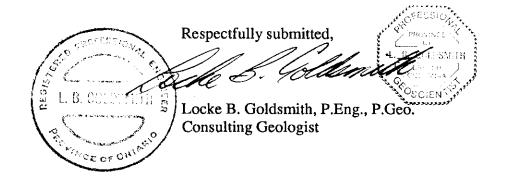
COST ESTIMATE

Diamond drilling, 300 m at \$100/m	30,000
Water truck and driver	3,000
Dozer	1,000
Assays	500
Vehicle, Fuel	2,000
Room, board	2,000
Engineering, supervision	5,500
Report	2,000
•	46,000
Contingencies at 10%	4.600
Total	50,600

Total

50,600

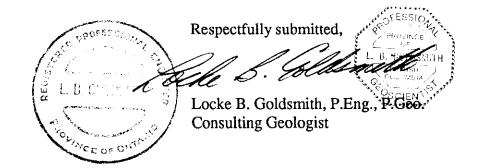
\$ 50.600



Vancouver, B.C. January 29, 1992

ENGINEER'S CERTIFICATE LOCKE B. GOLDSMITH

- 1. I, Locke B. Goldsmith, am a registered Professional Engineer in the Province of Ontario, and a Registered Professional Geologist in the Province of British Columbia and in the State of Oregon. My address is 301, 1855 Balsam Street, Vancouver, B.C.
- 2. I have a B.Sc. (Honours) degree in Geology from Michigan Technological University, a M.Sc. degree in Geology from the University of British Columbia, and have done postgraduate study in Geology at Michigan Tech and the University of Nevada. I am a graduate of the Haileybury School of Mines, and am a Certified Mining Technician. I am a Member of the Society of Economic Geologists, the AIME, and a Fellow of the Geological Association of Canada.
- 3. I have been engaged in mining exploration for the past 34 years.
- 4. I have authored the report entitled, "Geology and Soil Geochemistry, Smoke, Trak, Creek Side et al. Mineral Claim Group, Slocan Mining Division, Payne Mountain, Sandon, B.C.", dated January 29, 1992. The report is based upon fieldwork and research supervised by the author.
- 5. I have no ownership in the property, nor in the stocks of Minotaur Exploration Ltd.
- 6. I consent to the use of this report in a prospectus, or in a statement of material facts related to the raising of funds. Geochem sheets in the Appendix could be omitted from a prospectus because all values are plotted on maps.



Vancouver, B.C. January 29, 1992

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COST STATEMENT: 1991-1992 PROGRAM

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Wages		
L.B. Goldsmith: Sept. 7, 1/2 10, 11, 12, 1/213, 1/214, 15, 1/425, 1/426, 1/229, Oct. 5, 1/26, 13, 1/418, 1/419, 1/420, 1/827, 1/8 Jan. 7, 1/88, 1/89, 1/824,		
1/429, 1/8 Feb. 3, 1/44 total 111/2 days at \$470.00/day		5,296.50
G. Bennett: 1/2 Sept. 10, 11, 12, 1/213, 1/214, 25 26, 1/227, 1/228, 1/2 Oct. 6—total 7 days at \$233.50/day		1,634.50
Transportation		
Two 4x4 vehicles 1562.05 divided by 18.25 days = \$85.59/vehicle/day		1,562.05
Accommodation, Meals		
1855.26 divided by 18.25 days = \$101.65/person/day		1,855.26
Dozer		
JD450 at \$70/hour, 4 hours		280.00
Analyses		
123 samples cost \$788.22 = \$6.41/sample		788.22
Supplies		
Topofil, flagging, sample bags		267.85
Report		
Typing, drafting, prints, materials		<u>2,612,91</u>
	Total	14,297.29

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APPENDIX

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Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221

To: ARCTEX ENGINEERING SERVICES

506 - 540 BURRARD ST. VANCOUVER, BC V6C 2K1

A9122019

Comments: CC: L.B. GOLDSMITH

CERTIFICATE

A9122019

ANALYTICAL PROCEDURES DETECTION LIMIT UPPER NUMBER SAMPLES CHEMEX LIMIT METHOD DESCRIPTION CODE Pb ppm: HNO3-aqua regia digest 2n ppm: HNO3-aqua regia digest Ag ppm: HNO3-aqua regia digest AAS-BKGD CORR 1 1 10000 4 59 10000 5 59 AAS AAS-BKGD CORR 0.2 100.0 6 59

ARCTEX ENGINEERING SERVICES

Project: MINO P.O. # :

Samples submitted to our lab in Vancouver, BC. This report was printed on 23-SEP-91.

SAMPLE PREPARATION						
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION				
201 238	59 59	Dry, sieve to ~80 mesh NITRIC-AQUA REGIA DIGESTION				



Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 To: GOLDSMITH, MR. L. B.

301 - 1855 BALSAM ST. VANCOUVER, BC V6K 3M3

Comments:

C	ERTIF	CATE A9122764	ANALYTICAL PROCEDURES					
GOLDSMITH, MR. L. B. Project:			CHEME CODE	X NUMBEF	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
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	SAM	PLE PREPARATION						
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION						
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A9122764



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212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 To: ARCTEX ENGINEERING SERVICES

506 - 540 BURRARD ST. VANCOUVER, BC V6C 2K1 Page Number :1 Total Pages :2 Certificate Date: 23-SEP-91 Invoice No. :19122019 P.O. Number :

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Project : MINO Comments: CC: L.B. GOLDSMITH

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506 - 540 BURRARD ST. VANCOUVER, BC V6C 2K1 Page Number :2 Total Pages :2 Certificate Date: 23-SEP-91 Invoice No. :19122019 P.O. Number :

Project : MINO Comments: CC: L.B. GOLDSMITH

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212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221

301 - 1855 BALSAM ST. VANCOUVER, BC V6K 3M3

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Analytical Chemists * Geochemists * Registered Assayers

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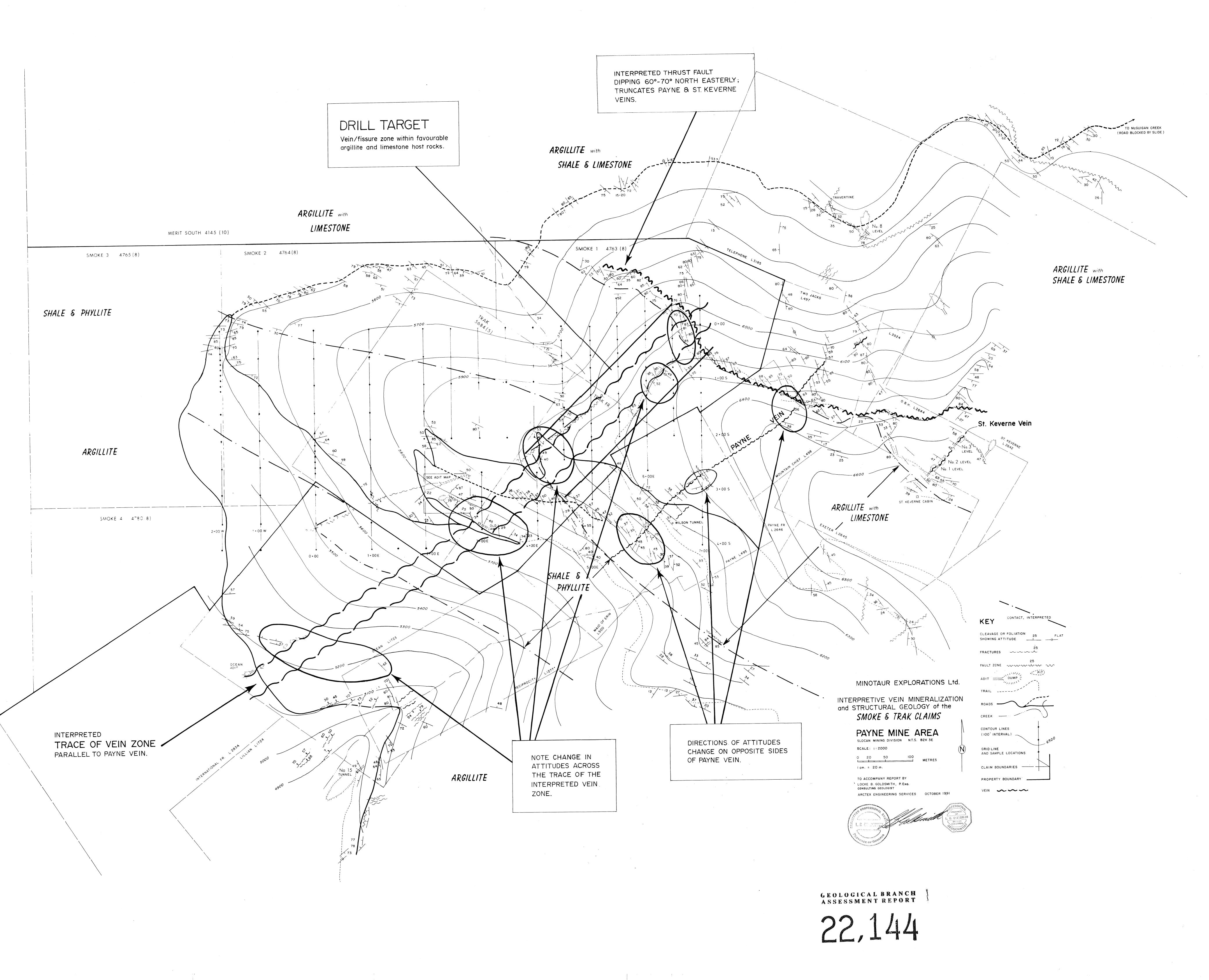
To: GOLDSMITH, MR. L. B.

301 - 1855 BALSAM ST. VANCOUVER, BC V6K 3M3

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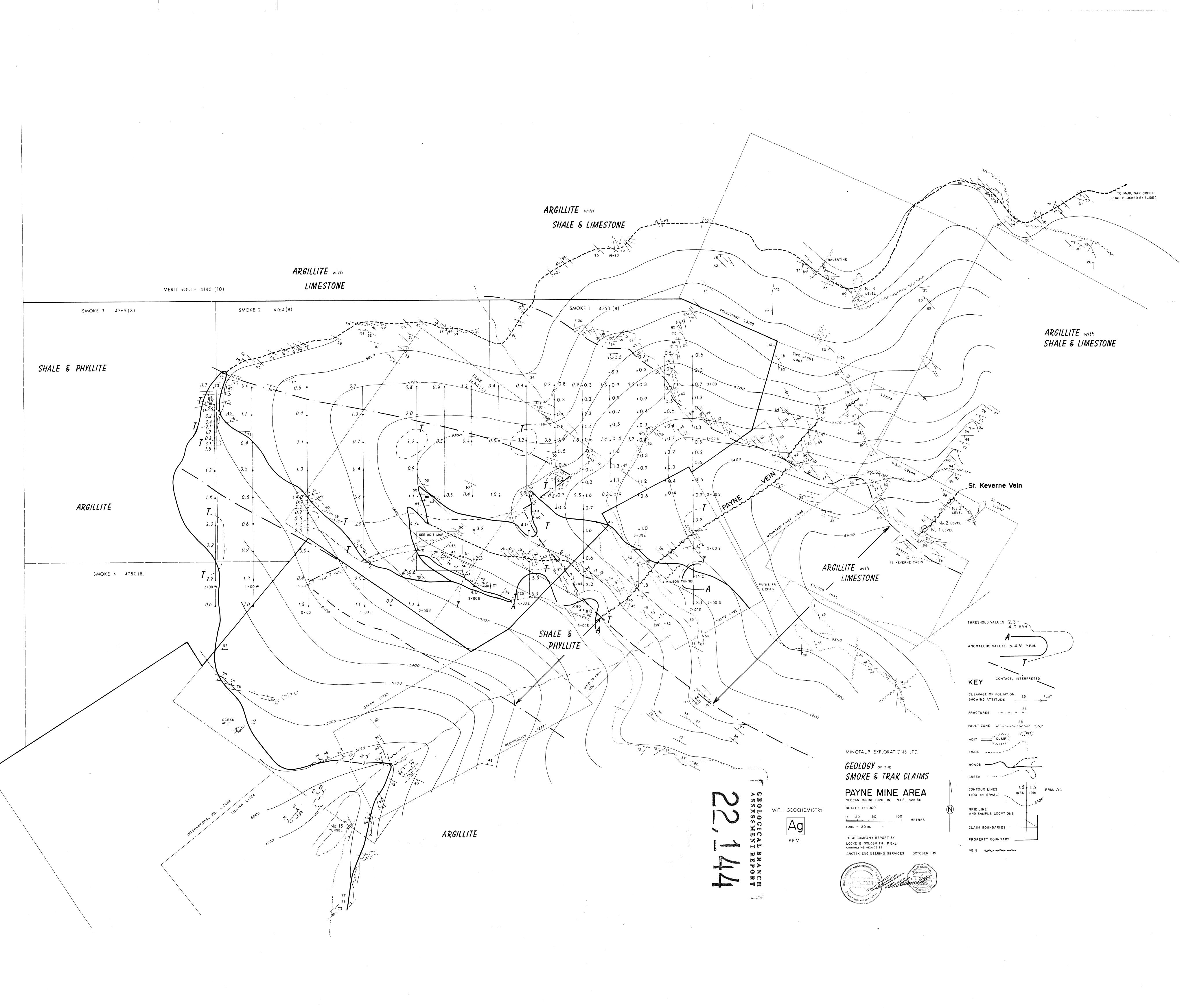
OTE: THIS IS A	CORRECTED CO	PY FOR AG		, <u></u>	C	ERTIFICATI	E OF ANAL	YSIS	A91227	64
SAMPLE	PREP CODE	Cu ppm	Pb ppm	Zn ppm	Ag ppm Aqua R					
6+00E 1+755 6+00E 2+00S 6+50E 0+25N 6+50E 0+50N 6+50E 0+50N 6+50E 0+00S	201 238 201 238 201 238 201 238 201 238 201 238	14 28 46 21 38	12 14 17 17 7	96 144 122 80 75	1.2 0.6 0.6 0.5 0.3					
6+50E 0+25S 6+50E 0+50S 6+50E 0+75S 6+50E 1+00S 6+50E 1+25S	201 238 201 238 201 238 201 238 201 238 201 238	25 30 11 14 7	16 35 16 9 12	86 96 75 40 33	0.5 0.6 0.4 0.7 0.2			Ŧ		
6+50E 1+50S 6+50E 1+75S 6+50E 2+00S 7+00E 0+25N 7+00E 0+50N	201 238 201 238 201 238 201 238 201 238 201 238	8 10 19 14 25	13 26 26 20 20	35 58 100 82 87	0.3 0.4 0.4 0.3 0.6					
7+00E 0+00S 7+00E 0+25S 7+00E 0+50S 7+00E 0+75S 7+00E 0+75S 7+00E 1+00S	201 238 201 238 201 238 201 238 201 238 201 238	25 17 17 44 13	22 16 16 16 16 12	140 126 100 148 78	0.7 0.3 0.5 0.3 0.5					
7+00E 1+25S 7+00E 1+50S 7+00E 1+75S 7+00E 2+00S	201 238 201 238 201 238 201 238	12 24 29 13	7 19 18 30	50 83 98 69	0.2 0.6 0.5 0.7					
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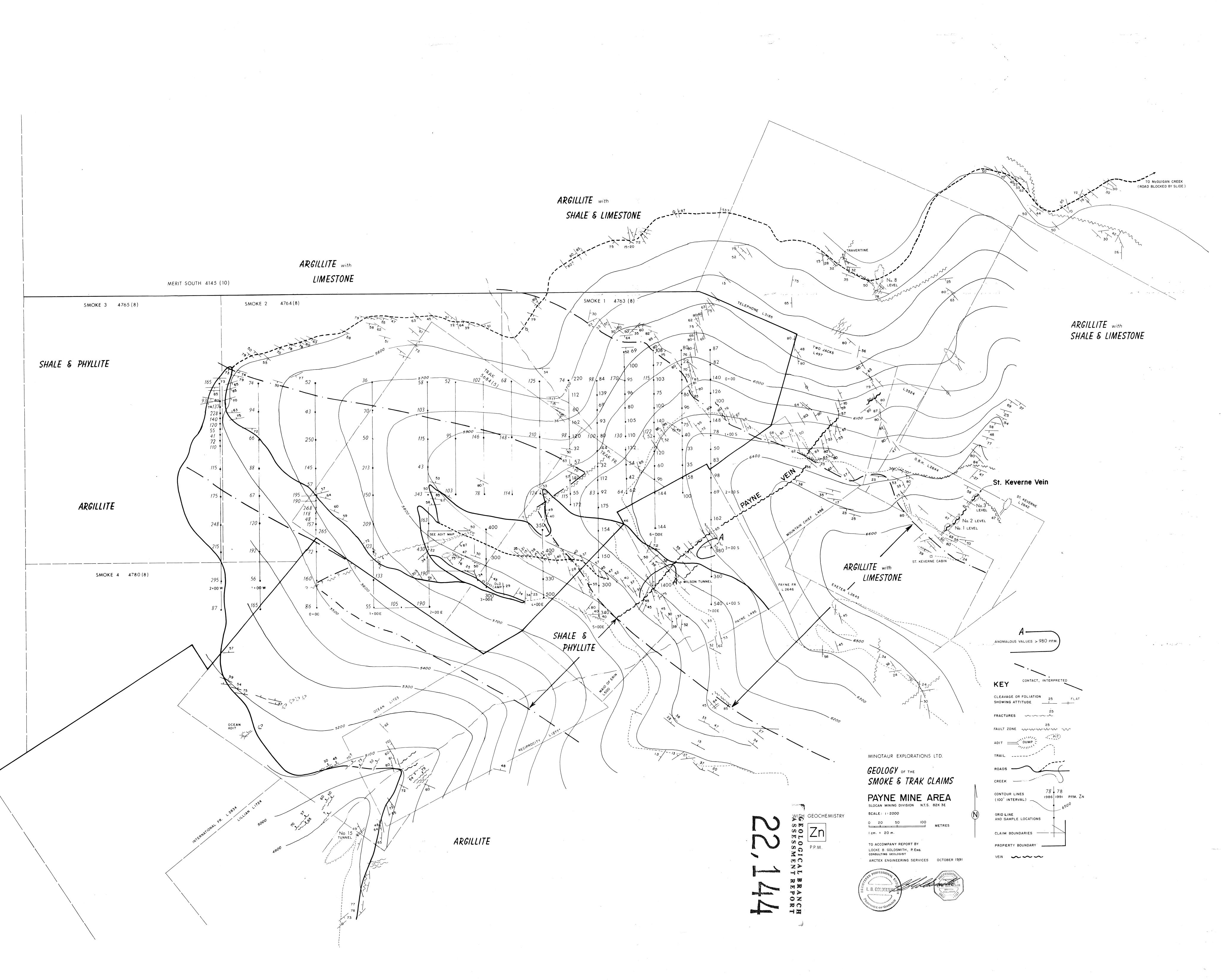
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GEOLOGICAL BRANCH ASSESSMENT REPORT 22,144

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MINOTAUR EXPLORATIONS LTD.

GEOLOGY OF ADITS ON SMOKE & TRAC CLAIMS

PAYNE MINE AREA

SLOCAN MINING DIVISION N.T.S. 82K 3E

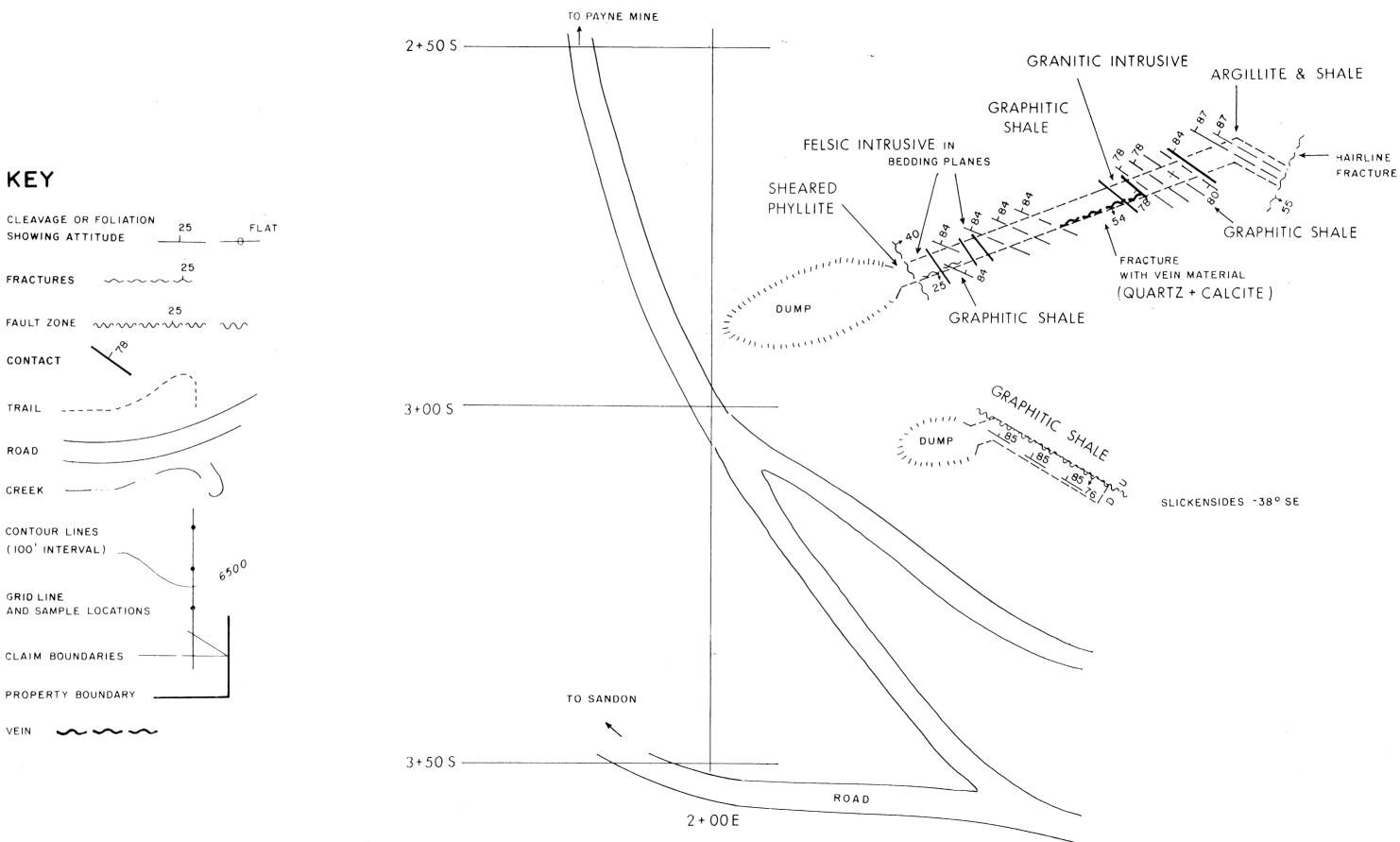
SCALE: 1:2000

0 5 10 15 25 METRES 1 cm = 5 m. 1:500

(N)

TO ACCOMPANY REPORT BY LOCKE B. GOLDSMITH, P. ENG. CONSULTING GEOLOGIST

ARCTEX ENGINEERING SERVICES OCTOBER 1991

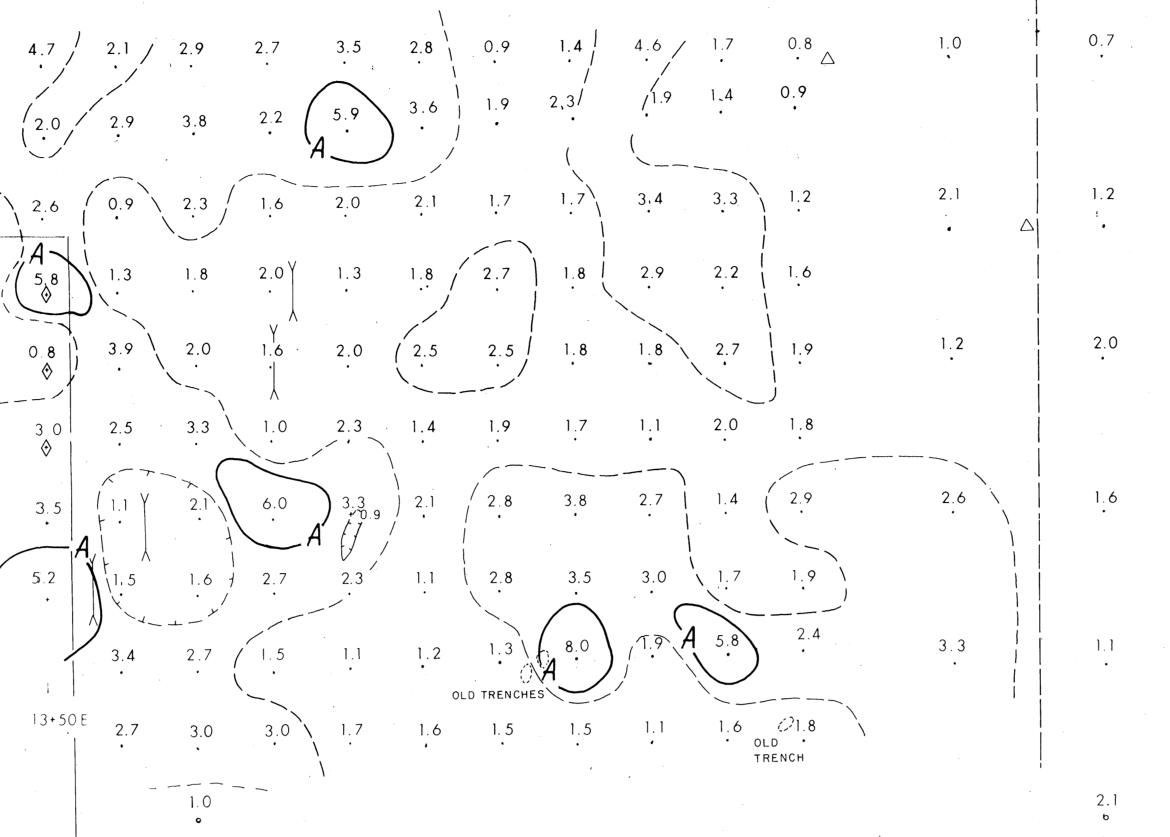


1.7 0.7 | • 1.1 0.7 1.1 `_2.4 2.3 2.6 / 1.8 / 1.5 • 3+00 N — + / says 12+00E / 1.1 • 1.4 1.5 0.7 1.9 • \ \ \ 0.9 0.8 2+50N — $0.4 \quad 1.9$ 0.2 0.2 $1.8 \quad 2.1$ $2.6 \quad A \quad 27.0$ 0.6 (0.9 0.8 1.1 0.6 + + 0.3 0 2 · 25N 11 · 75E 0 9.5 0.5 0.7 (4.4 (PREVIOUS 0.9 0.9 0.3 0.6 1.4 * 1+95 N 10+55E (0.2 m chip) 2+00 N -0.7 + 1+85N (grab) 10+50E (grab) 0.1 32 / 17 17 4.2 3.0 2.5 3.3 $\begin{pmatrix} 9.0 \\ . 0 \end{pmatrix} = 1.6 \quad 0.4 \quad 0.4$ 0.1 1.3. 7.5 0,2 * 1+70 N 11+70 F float 11 + 70 E 1.6 3.3 1 2.2 2 2.4 2.3 3.5 / 0.1 0.1 / 3.4 167 0.5 1+50N -• 1+00 N ----10 AN 1 13+00E 10 + 50 E 12+00E 12+50 E 11 + OO E 11+ 50 E 1981 soil 1987 soilsample 1987 rock sample sample sites anomalous 00.7 * 0.7 values 1987 0.7 >4.9 ppm estimated ALL VALUES SHOWN ARE PPM ROAD ______ MINOTAUR EXPLORATIONS LTD. RIDGE TOP riangleALAMO CLAIM GROUP: CREEK SIDE DETAIL THREE FORKS B.C. 82K/3 SLOCAN MINING DIVISION PIT C Soil and Rock Geochemistry (LOCATED) 0 12.5 25 \mathbb{N} SAMPLE LOCATIONS; 0 🖣 987 l cm. = 12.5 m. PP.M. 1:1250 \mathbb{N} Ag TO ACCOMPANY REPORT BY S GLUMP FEATURE Y L.B. Goldsmith, P.Eng. CONSULTING GEOLOGIST E O ARCTEX ENGINEERING SERVICES NAT JANUARY 1988 AMENDED DECEMBER 1988 AMENDED JANUARY 1992 0Z L. B. GOLDSMIT 20 可聞 t Alexandri and the L SOIL COLOUR **B B B B B** G 3+00N BROWN B B B B B G GREY TO BLACK B (G G B B B (G G B B G G G G B G G G G G G G G R B 2+00 N GREY TO G R R R G G BLACK REDDISH BROWN

11 + 00 E 12+00E

No.

1748 (2) CREEK SIDE CLAIM



SAMPLING 1.7 ° 0.8 0+00 -----0

1.8 0.9 0 0 0.7 0.8 1+00 S ----0 0

1.5 ° 0.6

2+00S ----0.5 0 3.2 3+00 S ____ 0

0

0 0.7 4+00 S ____ 0

0.5

14 + 00 E

0.3 2.5 0

0<u>.</u>2 0.4 °

0.5

15+00 E

0.7 0 1.7 °

2.2

1.9

0

0.6

0

1.2 °

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1.0

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16+00 E



3.8

1.9

0

3,7

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1.7

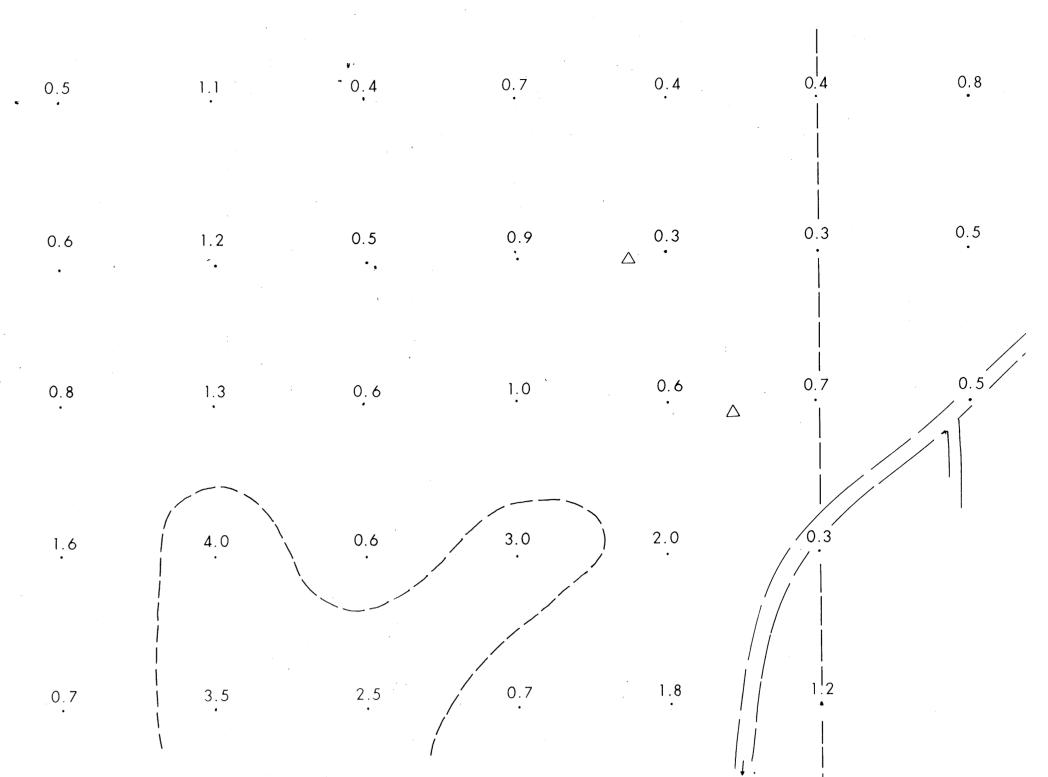
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2.5

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4765 (8) SMOKE 3



4 Km. 2.0 0 1

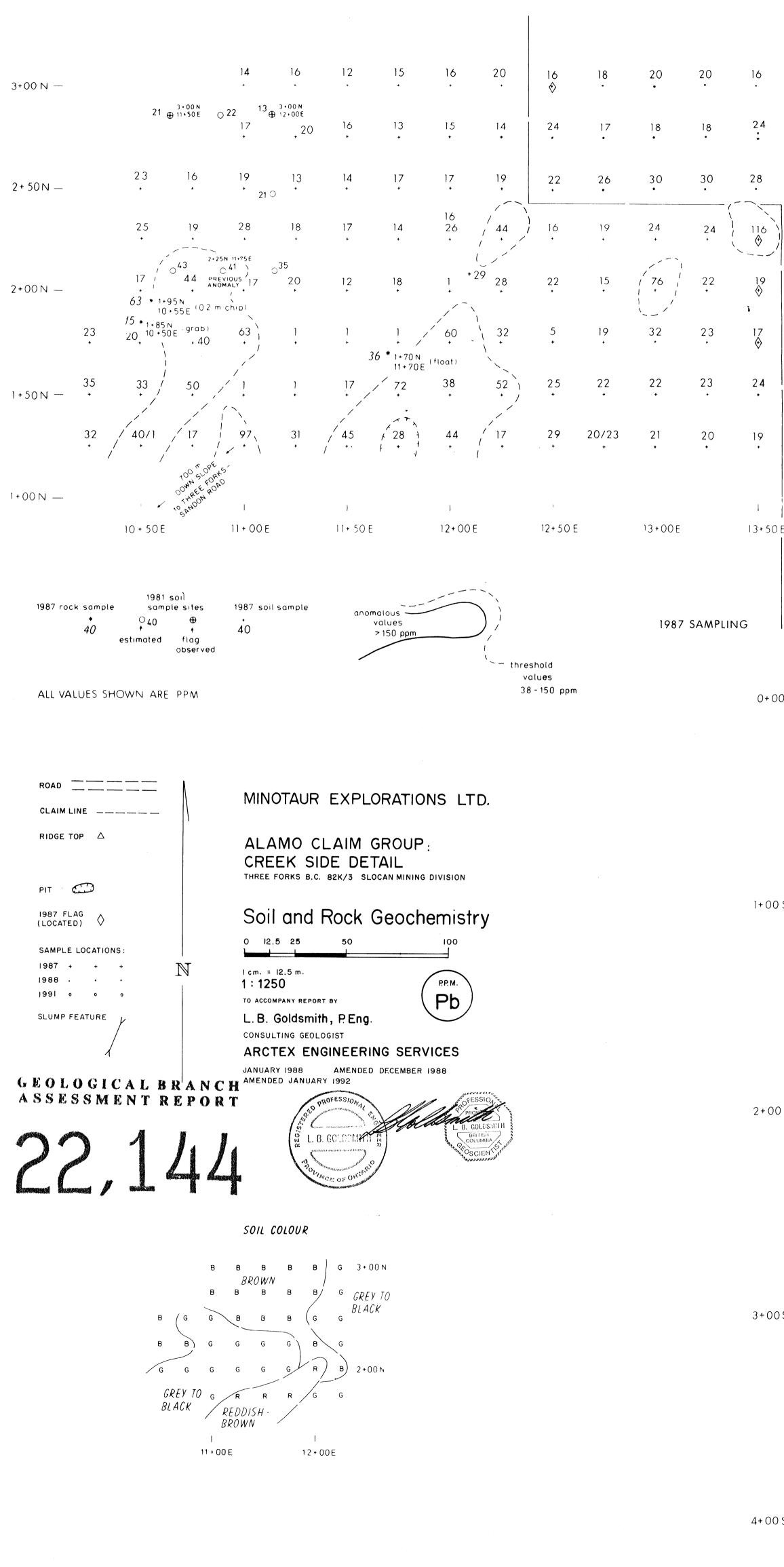
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20+00 E 19+00 E 1.9 0 0.3 0

2.0 ° 2.0 ,

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0.7 ° 1 18 + 00 E



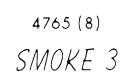
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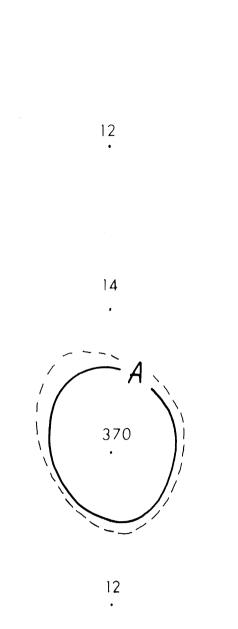
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1748 (2) CREEK SIDE CLAIM

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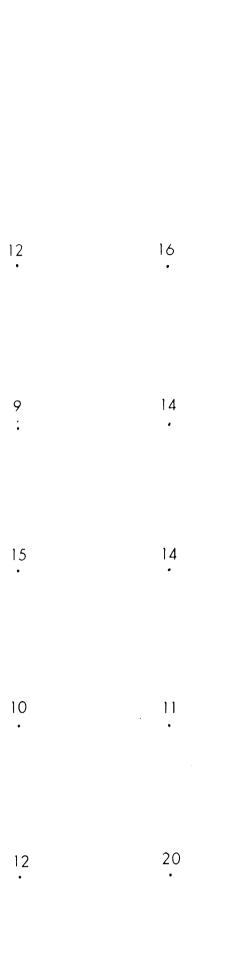
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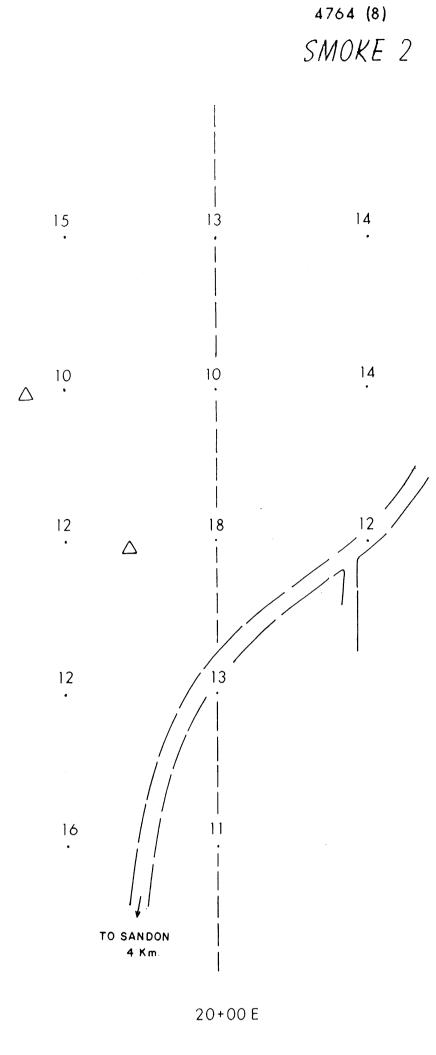




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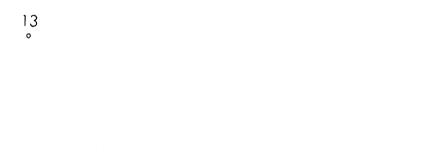






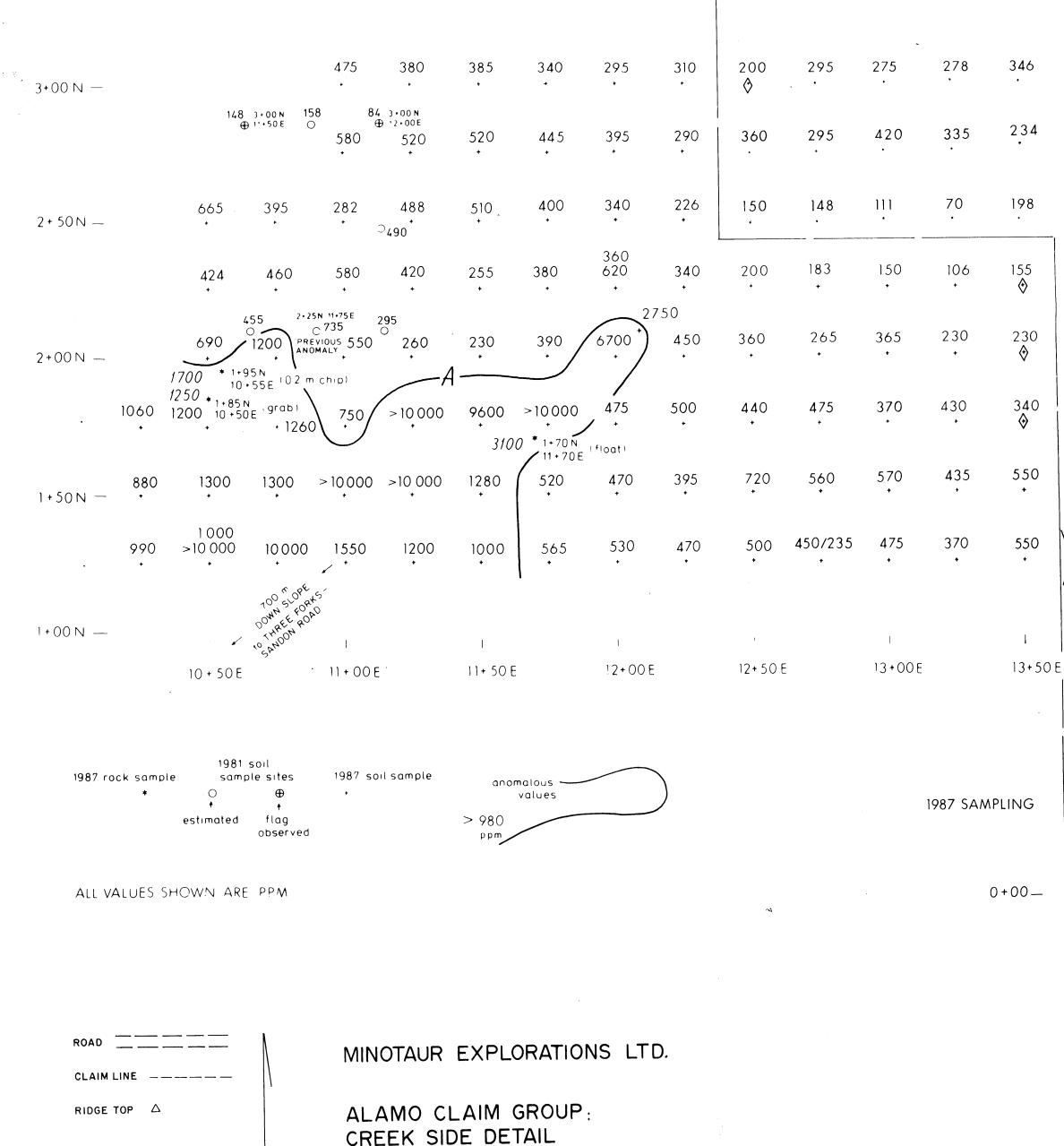


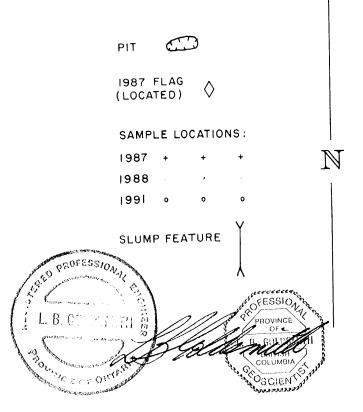






18 + 00 E





CREEK SIDE DETAIL THREE FORKS B.C. 82K/3 SLOCAN MINING DIVISION

Soil and Rock Geochemistry 50 0 12.5 25

PPM.

Zn

l cm. = 12.5 m. **1:1250** TO ACCOMPANY REPORT BY L.B. Goldsmith, P.Eng. CONSULTING GEOLOGIST

ARCTEX ENGINEERING SERVICES JANUARY 1988 AMENDED DECEMBER 1988 AMENDED JANUARY 1992

GEOLOGICAL BRANCH ASSESSMENT REPORT

SOIL COLOUR 22, B B B B B G 3+00 N BROWN B B B B B/ G GREY TO BLACK G G G G G G R GREY TO G R R R G BLACK REDDISH -BROWN 2+00 N l 11 + 00 E 12+00E

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3+005 ---

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)	155 ♦	188	290	360 ^Y	212	268 •	285	135 •	180 •	160	184		ι 	
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	340 ♦	415	332 •	لا 183	330 •	255	280	212	190	208	195			
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A۸	MPLING												·	
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1748 (2) CREEK SIDE CLAIM

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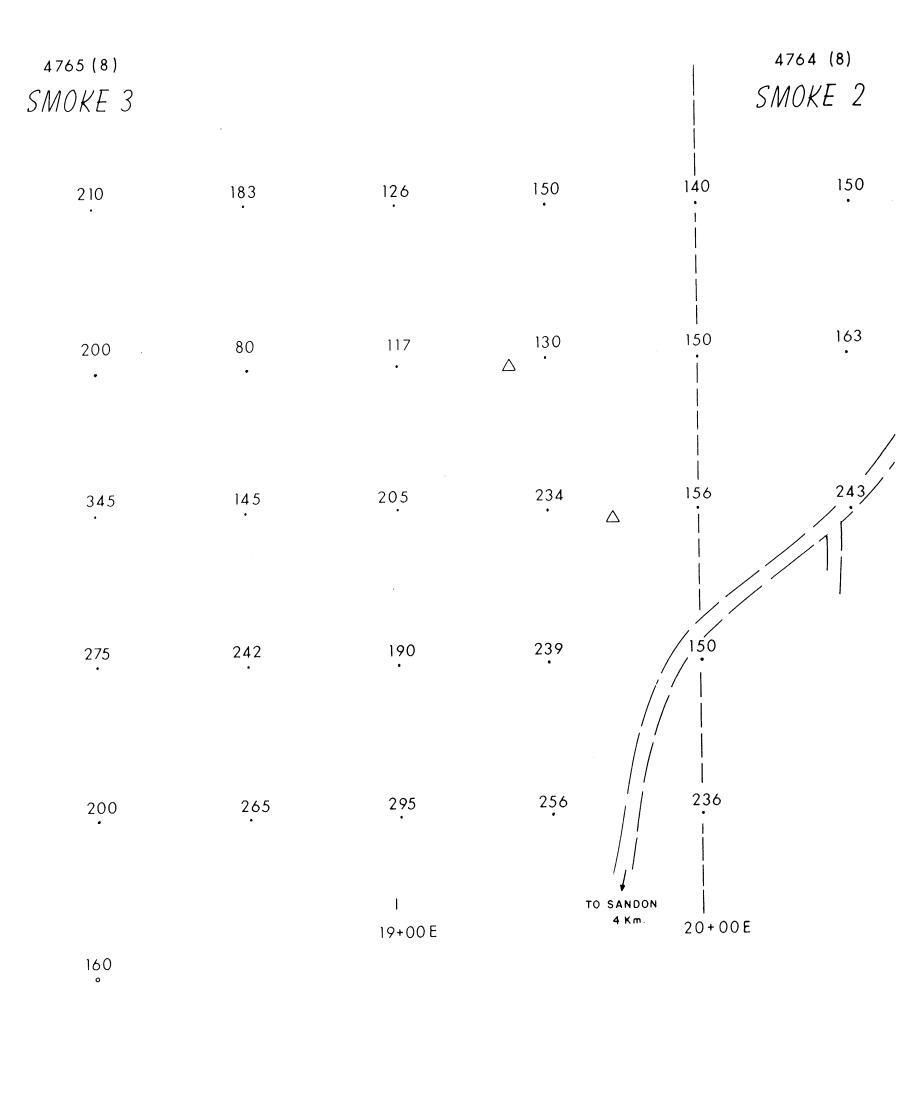
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15+00E

16+00 E



230 ° •

134 0

300 ° 470 ٥

410 ٥

430 i 18+00 E

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L. B. GO: DOM:

GEOLOGICAL BRANCH ASSESSMENT REPORT

3+00 N — 3+00 N ⊕ 11+50 E ○ 3+00 N ⊕ 12+00E + ٠ + • -2+50N — + • + + + 309 2+25N 11+75E C PREVIOUS 13+50E 2+00N — 1 + 75 N 13+50 E -T1012 + + + ***** 1+70 N argillite with O^{\dagger} strong quartz-limonite float 11 + 70 E hematitic phyllite breccia

1+50N — SLUMP FEATURES + + + 50° + dark grey phyllite 1+00 N ----1 1 • 10 + 50 E 11+00E 11+ 50 E 13+00E 12+00E 12+50 E •

70° 1981 soil 50° <u>____t</u>___ 1987 rock sample sample sites 1987 soil sample Ð attitude of foliation attitude of dyke **†** ~~~~~^{90°} estimated flag outcrop ----->` observed fault zone showing attitude UPPER TRIASSIC TO LOWER JURASSIC SLOCAN GROUP

• SOIL COLOUR ALAMO CLAIM GROUP CREEK SIDE DETAIL B B B B B G 3+00N Three Forks BC 83K 3 Slocan M.D BROWN в в в ^в ^G GREY TO FIG. 7 GEOLOGY B (G G B B B (G G To accompany report by B B) G G G G B G PAUL KALLOCK GEOLOGIST & L. B. GOLDSMITH PENG G G G G G G G R B 2+00 N N CONSULTING GEOLOGIST GREY TO G R R R G G ARCTEX ENGINEERING SERVICES BLACK REDDISH -BROWN JANUARY 1988 AMENDED JAN. 1992 1:1250 11 + 00 E 12+00E 0 12 5 25 50 METRES 100 MINOTAUR EXPLORATIONS LTD.

1748 (2)

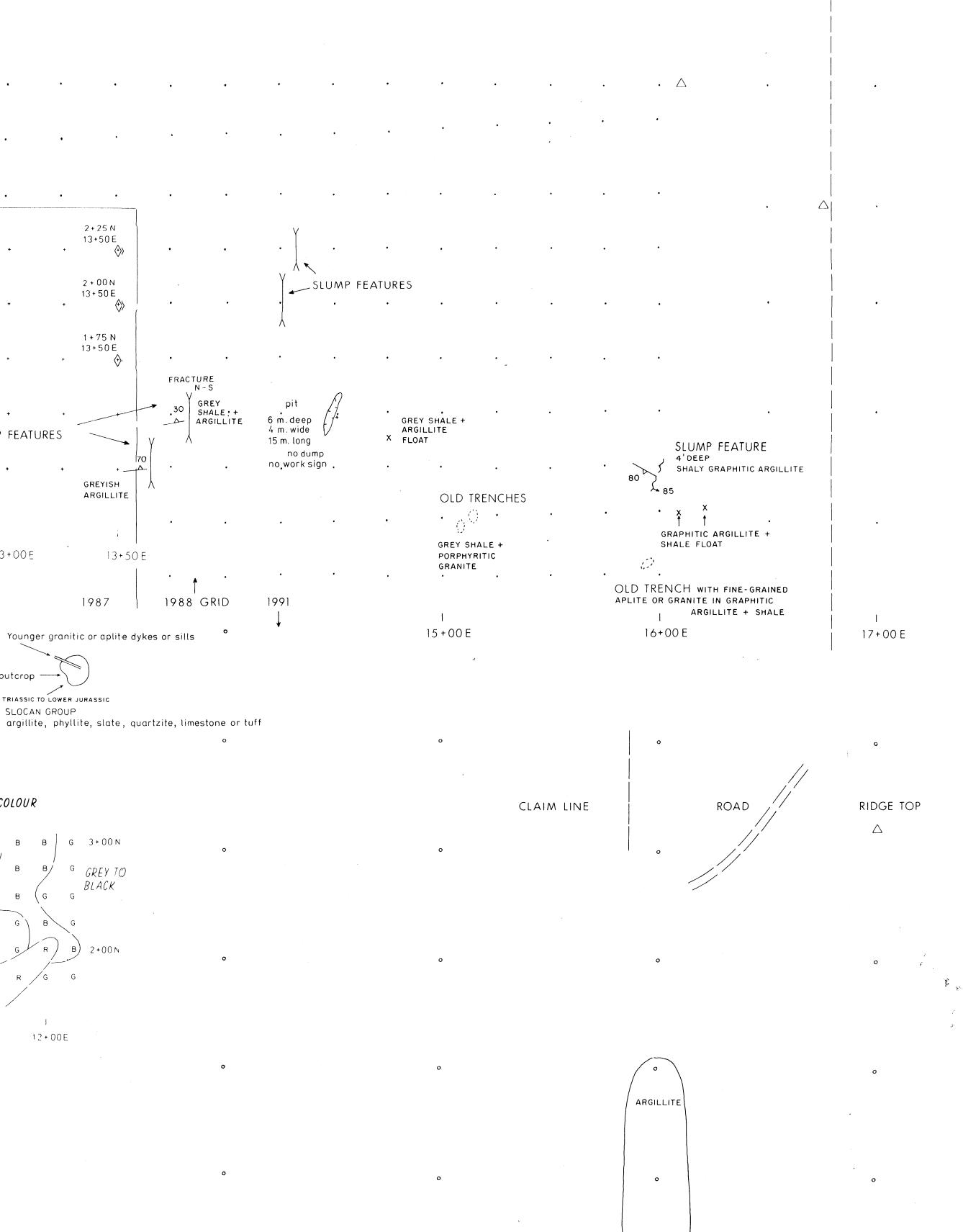
CREEK SIDE CLAIM

4765 (8) SMOKE 3

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TRENCH

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1 18+00 E 19+00 E

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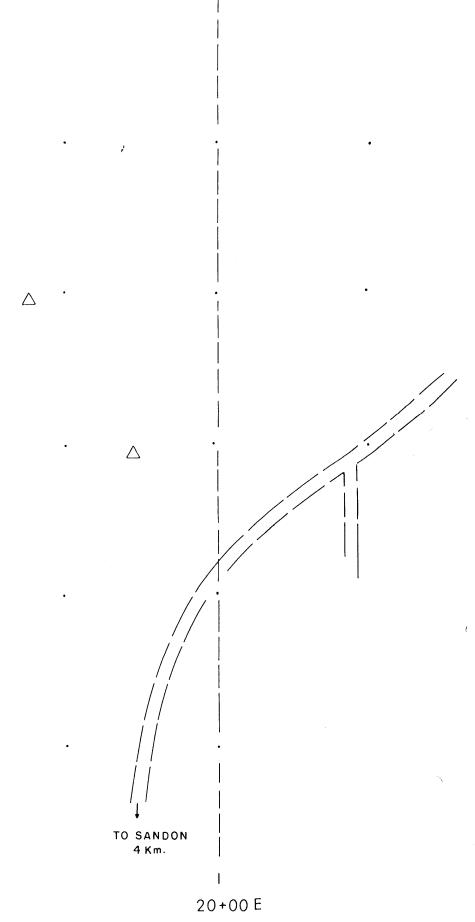
LOCATED 1987 FLAG PIT \diamond ----- 1 + 00 S 0

0

GRAPHITIC AND MICACEOUS SHALY ARGILLITE

----- 2 + 00 S 0

GRAPHITIC SHALY ARGILLITE



4764 (8)

SMOKE 2

1988 SOIL SAMPLES

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