MINNOVA INC.

826374

DATE: January 24, 1991

TO: Ian Pirie, Alex Davidson.

COPIES TO: NTS File. 93N/6, 93N/11.

FROM: Dave Heberlein.

SUBJECT: Evaluation of Eastfield Resources' Swan Property
Manson Creek Area

General:

The Swan property was submitted to Minnova by Eastfield Resources Ltd as a potential porphyry copper-gold play. The property hosts a modest sized porphyry system which contains a loosely defined geological reserve of about 36 million tonnes grading approximately 0.2% Cu. Eastfield Resources Ltd. became interested in the Swan occurrence because of historical placer gold production from Kwanika Creek, which flows through the mineralized area.

The Swan property is situated in the Swannell Ranges of north-central B.C., approximately 256km (by road) northwest of Fort St. James. A two wheel drive access road leads on to the claims from the Manson Creek road, providing good access throughout the summer months. Closest logistical support is in Fort St. James.

Claims and Ownership:

Fourteen claims, totalling 166 units comprise the Swan property. The claims are currently under option by Eastfield Resources Ltd. from W Halleran of Fort St. James. Under the agreement, Eastfield Resources Ltd. must spend $2,000,000 in exploration and make cash payments totalling $300,000 over a period of 6 years to earn a 100% interest in the property. This interest is subject to a 2% NSR retained by Mr. Halleran. A joint venture

between Eastfield Resources Ltd. and Northair Mines Ltd. was also in effect during the first year of the program (1989). This agreement has been terminated.

A list of Claims is as follows:

TABLE 1. CLAIM INFORMATION

CLAIM	REC No.	UNITS	REC DATE
KWAH 1	9901	1	10-19-88
KWAH 2	9902	1	10-19-88
KWAH 3	9903	1	10-19-88
KWAH 4	9904	1	10-19-88
KWAH 5	9905	1	10-19-88
KWAH 6	9906	1	10-19-88
SWAN 1	10123	20	02-16-89
SWAN 2	10124	20	02-15-89
SWAN 3	10125	20	02-13-89
SWAN 4	10126	20	02-14-89
SWAN 5	10397	20	05-06-89
SWAN 6	10398	20	05-06-89
SWAN 7	10399	20	05-04-89
SWAN 8	10400	20	05-04-89
TOTAL		166 UNITS	

Property History:

Exploration on Kwanika Creek dates back to the late 1930's following discovery of the Pinchi Lake mercury deposits. Copper and molybdenum mineralization was first recognized in the early 1960's, and the Swan occurrence was staked by Hogan Mines Ltd. in 1965. Initial exploration included cat trenching and two shallow (87 feet) X-Ray drill holes. No results are reported.

In 1966 the claims were optioned to Canex Aerial Explorations Ltd. who carried out a comprehensive program of linecutting, soil geochemistry, magnetic and IP surveys, trenching. and diamond drilling (11 holes, totalling 855m). Results were negative and the option was terminated.

Great Plains Development Company of Canada, Ltd. (now Norcen Energy Resources Ltd.) optioned the Swan in 1969. After additional magnetic surveys, they drilled seven BQ holes (1319m) which resulted in the delineation of a small, low grade copper deposit.

Bow River Resources drilled an additional six percussion holes (548m) in 1972. No results of this work are mentioned in the Eastfield report. Later that year, the property was optioned to Pechiney Development Ltd. They explored to the south of the known mineralization with approximately 40km of mag and IP. Their program culminated with 30 percussion holes (2993m), but did not add to the deposit. The optioned was terminated and Bow River allowed the claims to lapse.

W. Halleran restaked the core of the mineralized zone as the Kwan 1-6 early in 1989. By systematic sampling, he established that the porphyry mineralization is gold bearing. This attracted Eastfield Resources Ltd. who optioned the claims and increased the land holding to its present size.

Geology:

Two ages of granitic intrusions occur in the property area. Mineralization is associated with the earliest: a Jurassic quartz monzonite to syenite, locally referred to as the 'Hybrid Quartz Monzonite' or HQM. Younger granite and granodiorite intrusions of Cretaceous age are barren of mineralization. Both types intrude Triassic Takla Group volcaniclastic sediments that consist predominantly of argillite, siltstone and greywacke.

Cache Creek Group blue-grey limestones, underlie the western part of the property. The Pinchi Fault separates these rocks from the Takla Group. This fault is a major northwest trending structure that is known to host significant epithermal mercury occurrences

in the region.

The Swan occurrence is a typical Quesnel Trough porphyry system. It is hosted by (and most likely genetically related to) the HQM intrusive; a mottled, medium to fine grained porphyry body that is exposed for over 600m along the banks of Kwanika Creek. Mineralization consists predominantly of a pyritic stockwork zones that contain varying amounts bornite, chalcopyrite and molybdenite. Most intense mineralization and highest copper grades (up to 0.446% Cu) occur in areas of intense potassic and phyllic alteration within the limits of the HQM. Outside the intrusive, grade and sulphide content diminish rapidly into narrow zone of strong propylitic alteration.

Exploration Potential:

The Swan porphyry system has seen a considerable amount of exploration to date. This work has identified a zone of copper mineralization approximately 600m in length, up to 200m in width and to a depth of 100m. Copper intersections of up to 0.247% over 120m have been obtained from the core of the zone. The whole zone averages approximately 0.16% Cu (or $3.68/tonne in the ground); none of the old core was assayed for gold.

Extents of the copper mineralization have been fairly well defined by geological mapping, drilling and IP surveys. Best copper grades occur in a central zone of phyllic alteration flanked to the north and south by strong zones of potassic alteration. Limits of the potassic and phyllic zones are outlined by the 10mV/V chargeability contour. The shape of this feature suggests that the zone is restricted in an east-west direction. To the south, the mineralization and alteration rapidly attenuate over a distance of 200m. No other mineralized zones are known on the property.

A strong chargeability anomaly (to 19.6mV/V) was identified by Eastfield Resources Ltd., 2300m to the south of the occurrence between lines 2550S and 2750S at 1400W. This anomaly is similar in strength and geometry to the one over the occurrence and is interpreted by Eastfield to be a possible continuation of the mineralized zone. The two anomalies are separated by a broad zone of low chargeability and flat resistivity which apparently correlates with an overburden filled trough.

This interpretation is based on overburden measurements taken from Pechineys' percussion logs. If valid and the thickened overburden is masking the IP response, there is potential for mineralized zone to be continuous between the two anomalies. Geology in the occurrence area suggests that this is not the case. The mineralization and alteration clearly die out in a southerly direction.

If the southern anomaly represents an new zone, it is almost certainly restricted in size, as the anomaly dimensions are very similar to those over the Swan. A porphyry system of this extent is not economic.

Extensive rock, soil and silt sampling by Eastfield Resources Ltd. showed that the Swan Occurrence is anomalous for gold. Gold values from rock samples show a strong correlation with copper, suggesting that it occurs with chalcopyrite, not pyrite. As with copper, the highest gold values (to 1081ppb) occur within the phyllic zone, however values from 100 to 200 ppb show up throughout the potassic and propylitic zones.

Conclusions and Recommendations:

1. The Swan occurrence is a most likely a small alkalic porphyry copper-gold system. Copper mineralization coincides with phyllic and potassic alteration zones.

2. The mineralized zone has been fairly well delineated by previous drilling, IP and geological mapping. A **loosely** defined reserve of 36 million tonnes of 0.16% Cu is present.

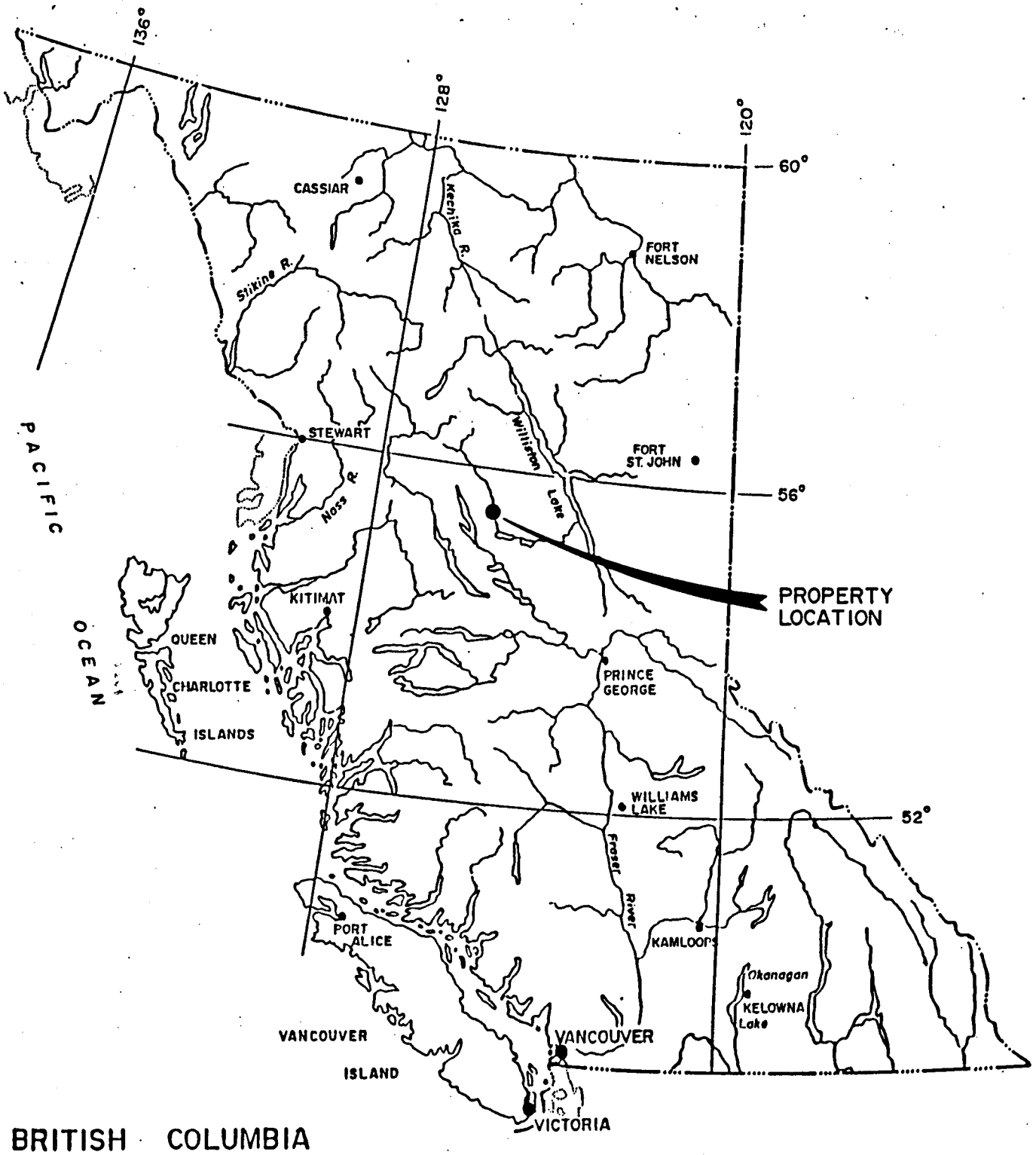
3. There appears to be little potential for significant extensions to the Swan zone. The 10mV/V chargeability anomaly precisely outlines the extent of the mineralization. The area of the anomaly has been thoroughly drill tested to a depth of 100m.

4. A similar strength chargeability anomaly 2.3km south of the Swan occurrence may be an extension of the porphyry system. It is not likely, however that the copper mineralization is continuous between the two areas.

5. Gold values in the copper zone average 314 ppb. If these numbers are representative of the whole zone, then gold contributes approximately $3.50/tonne to the value of the deposit. Not enough to make something this small viable.

5. The existing mineralized zone is too small and of too low grade to be of interest.

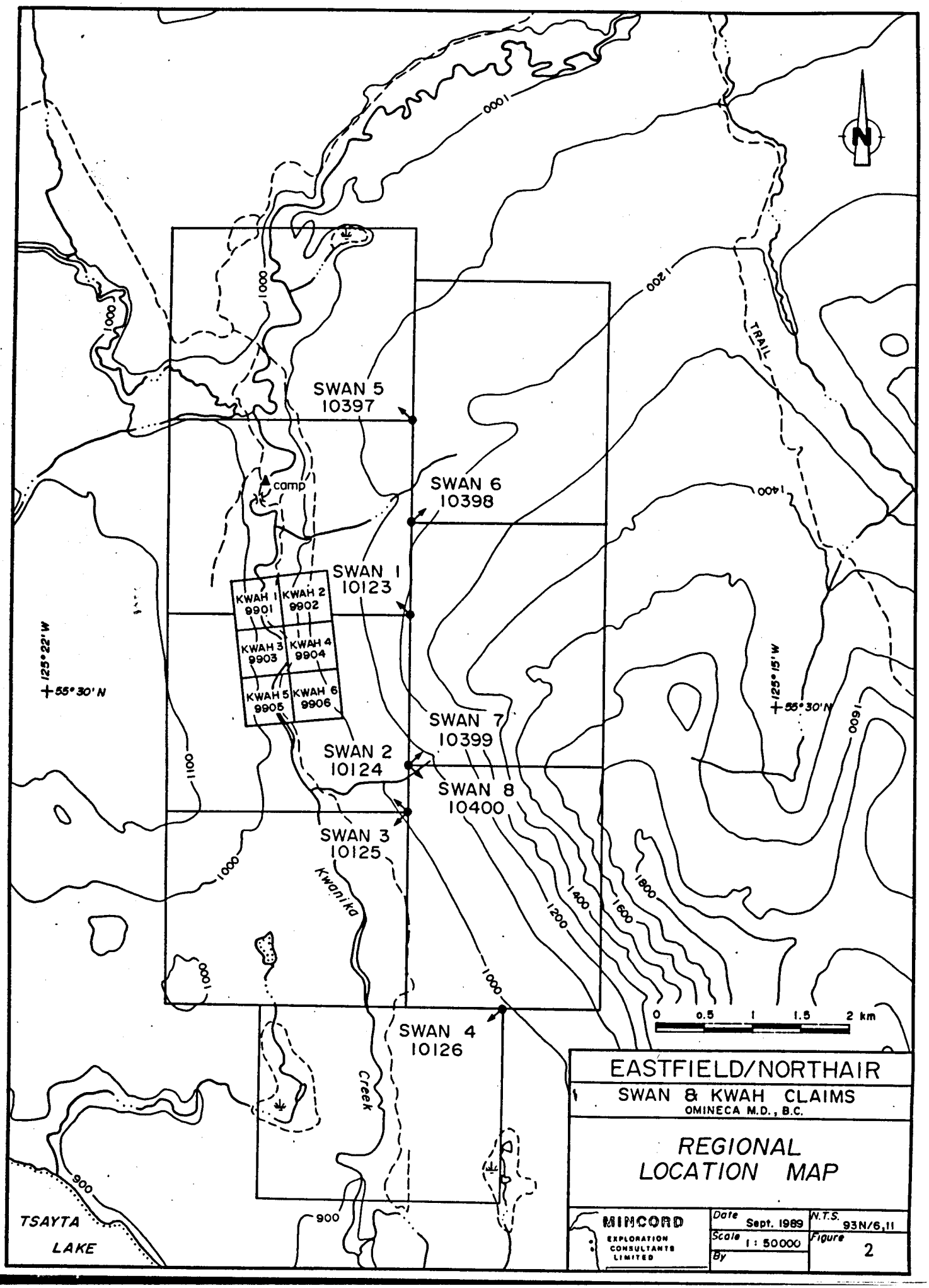
The property is not recommended for acquisition.

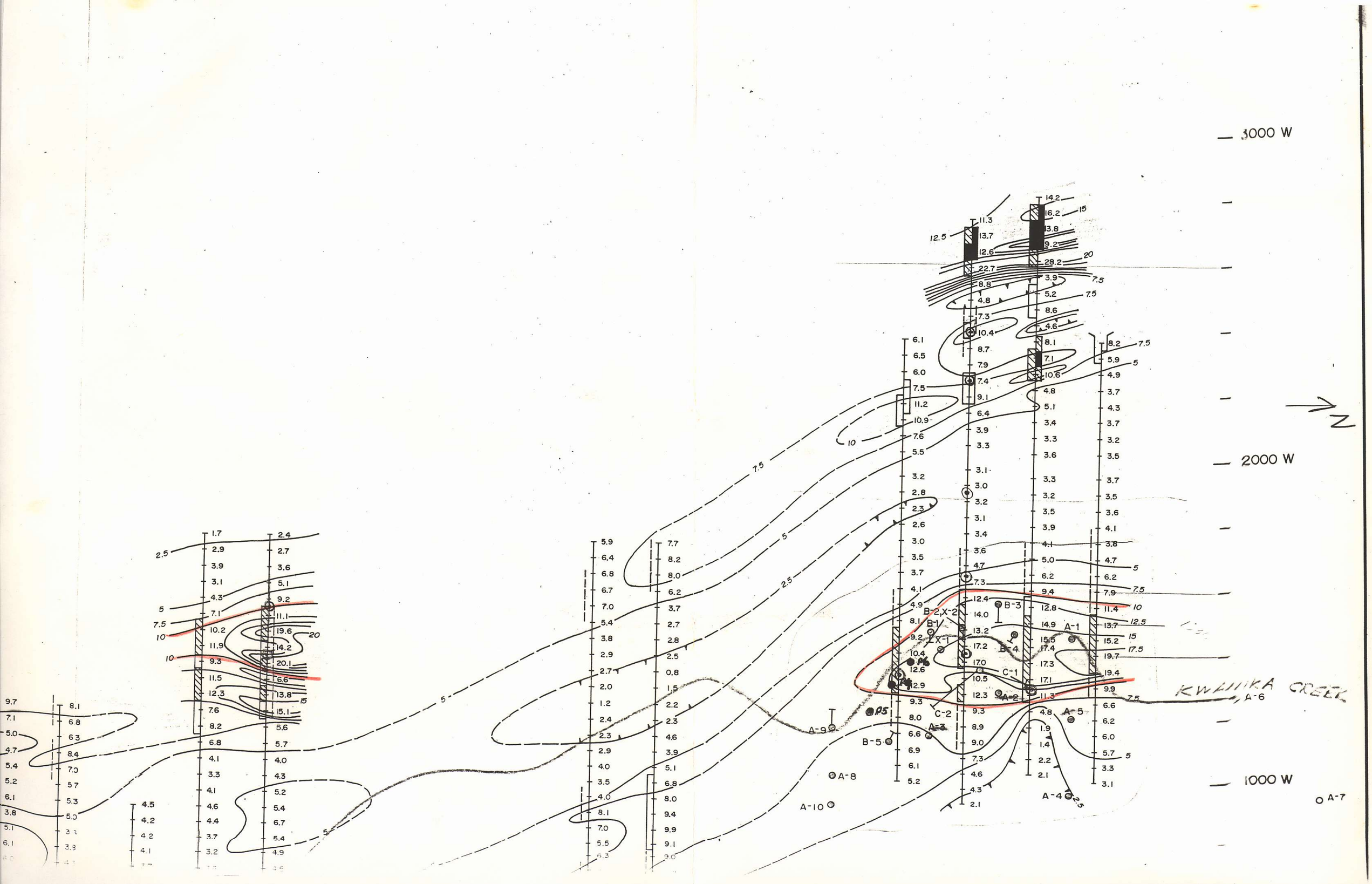


BRITISH COLUMBIA

Scale 1 : 7,500,000 approx.

EASTFIELD/NORTHAIR		
SWAN & KWAH CLAIMS OMINECA M.D., B.C.		
GENERAL LOCATION MAP		
MINCORD EXPLORATION CONSULTANTS LIMITED	Date Sept. 1989	N.T.S. 93N/6,11
	Scale see above	Figure 1
	By	


SWAN 5
10397
SWAN 6
10398
SWAN 1
10123
SWAN 7
10399
SWAN 2
10124
SWAN 8
10400
SWAN 3
10125
SWAN 4
10126
camp
KWAH 1
9901
KWAH 2
9902
KWAH 3
9903
KWAH 4
9904
KWAH 5
9905
KWAH 6
9906
125°22' W
55°30' N
125°15' W
55°30' N
TRAIL
Kwanika
Creek
TSAYTA
LAKE
1000
1200
1400
1600
1800
900
N
0 0.5 1 1.5 2 km
EASTFIELD/NORTHAIR
SWAN & KWAH CLAIMS
OMINECA M.D., B.C.
REGIONAL
LOCATION MAP
MINCORD
EXPLORATION
CONSULTANTS
LIMITED
Date Sept. 1989
Scale 1 : 50000
By
N.T.S. 93N/6,11
Figure 2

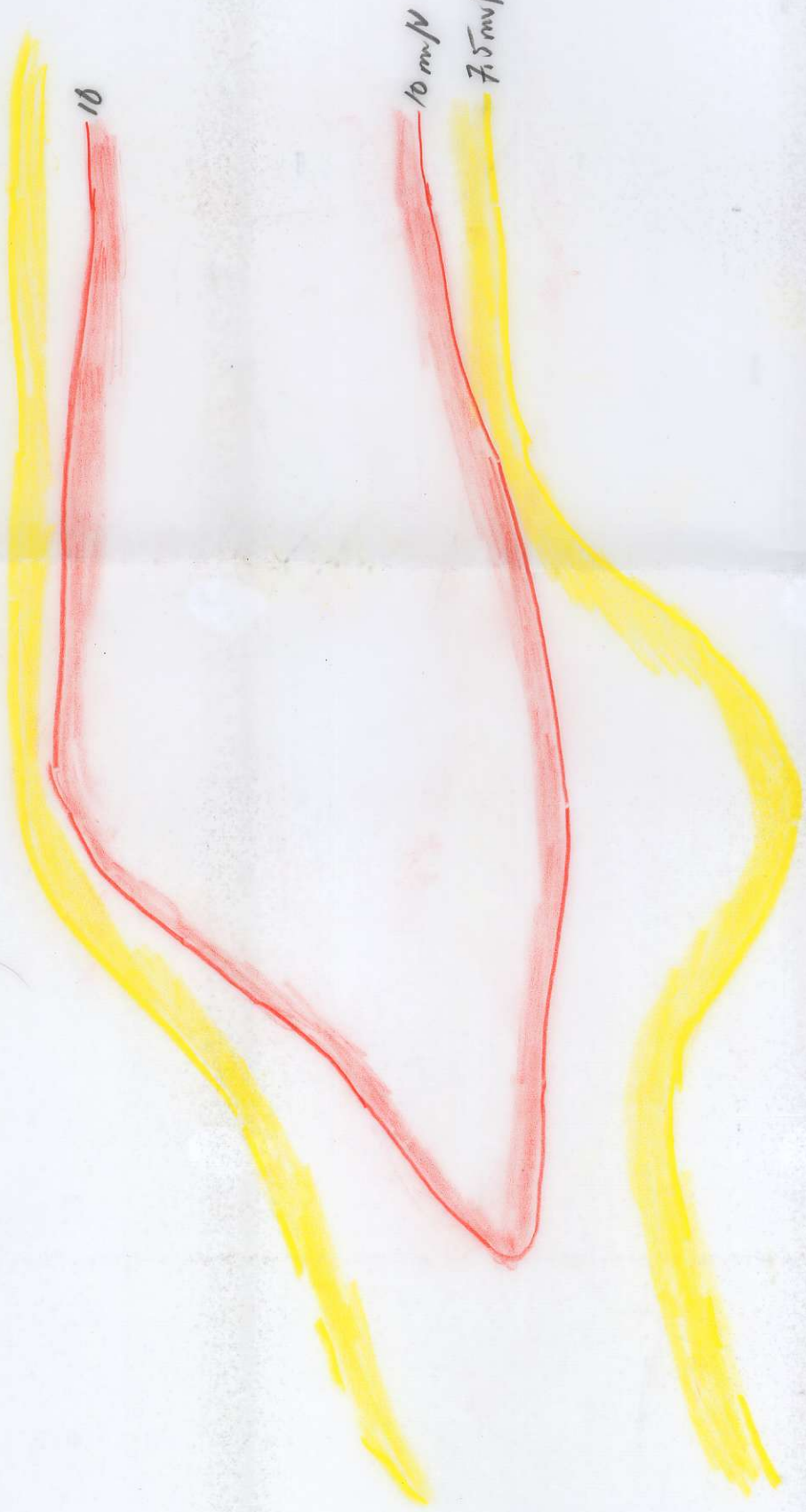

3000 W
2000 W
1000 W
N
KWANIKA CREEK
B-1
B-2,X-2
X-1
B-3
B-4
A-1
A-2
A-3
A-4
A-5
A-6
A-7
A-8
A-9
A-10
C-1
C-2
P5
P6

N

SCALE 1:5000

DAN 01-22-1991

SWAN OCCURRENCE
CHARGEABILITY CONTOURS



SWAN OCCURRENCE
CHARGEABILITY CONTOURS

N

SCALE 1:5000

DRN 01-22-1991.

Py-Cp

10'-0.11%Cu

A-1

Cp-Py

Py

B-4

410'-0.166%Cu

(30'-0.386%Cu)

Cp-Py

A-2

150'-0.118%Cu

B-3

10'-0.14%Cu

Cp-Py

C-1

C-2

Cp-Py

B-2

37'-0.247%Cu

(60'-0.446%Cu)

Py-Cp

B1

Py,Cp

300'-0.256%Cu

(150'-0.43%Cu)

Cp-Py

A-3

166'-0.232%Cu

(50'-0.40%Cu)

A-5

50'-0.16%Cu

A-4

B-5

Cp

Cp-Py-Mt

Py

A-8

10'-0.12%Cu

A-10

(Abandoned)

A-9

10'-0.12%Cu

Py-Cp

Mo-Cp-Py

Py, He

5+00 W.
2/46/11/4

7 +00 N.
5+00 W.
1/52/8/6

0+95 N.
1+00 E.
3/66/6/42

2+00E.
2/67/4/4

3+00E.
3/65/7/112

4+00E.
3/68/1/14

5+00E
3/72/9/9

6+00E.
3/69/6/16

7+00E.
3/65/7/25

8+00E.
3/59/6/16

9+0
4

89-7
1/39/

Kawo

G-89-2 6/2984/9/76

G-89-1 1/274/80/116

6/49/6/27 89-54

2/3455/24/119 89-55

89-30a 6/505/16/288

89-30 11/38/10/79

89-29a 8/21/10/36

89-29 13/52/27/72

3/130/4/4 89-56

4/4161/119/67 89-57

3/235/6/8 89-58

3/192/10/16 89-59

4/797/6/29 89-60

19/635/3/95 89-2

2/216/10/142 89-3

14/800/11/86 (TIB)

74/722/13/56 (TIA)

122/2601/17/63
26/264/103/24
4/255/53/10
21/3665/1012/6
13/76/15/7
2/661/199/28 89-4a

89-4f

52/3693/278/134 89-4g

1988/457/3/282 89-5c

3/1260/14/9 89-5b

4/875/8/32 89-66

106/5005/16/85 89-5a

89-61
10/1031/57/12

89-28 7/966/368/20

89-27f 2/1795/42/1081

89-27e 6/529/10/30

89-27d 14/646/7/31

89-27c 13/5257/562/96

89-27b 15/796/25/78

89-27a 2896/23/ 99

89-27 12/3043/60/133

48/3956/11/61 89-27h

5/97/4/9 89-27g

56/442/6/111 89-6a

251/157/4/75 89-6b

1846/7120/7/63 89-7a

69/2155/3/80 89-7b

51/4067/7/107 89-8

11/9704/8/51 89-50

24/8349/19/216 89-9

11/6640/3/56 89-10

89-26b 10/116/22/126

89-26a 81/347/3/12

89-26 30/10,597/14/117

89-25a 10/291/9/6

89-25 8/405/9/13

89-62
14/2427/5/25

89-63
25/4356/3/101

69/1138/2/368 89-53

2/498/53/26 89-11

31/1039/19/53 89-12

8/384/5/30 89-64

14/1926/13/112 89-65

5/2166/4/112 89-13a

25/1959/10/155 89-13b

6/1889/12/87 89-13c

8/1809/34/120 89-52

38/1902/39/135 89-13d

89-34
13/386/97/15

89-24f 1111/2071/787/10

89-24e 1190/5765/1636/25

89-35
1/81/11/4

89-24d 5/143/6/17

89-24c 2025/670/145/16

89-24b 49/900/325/12

1/328/28/16 89-36a

89-24a 64/129/8/4

1/19/2/18 89-36

1000

0+30 S.
1+00 E.
2/47/7/3

2+00 E.
2/48/9/7

3+00 E.
2/46/9/3

89-1
1/9/15/3

4+00 E.
2/59/7/2

5+00 E.
2/56/7/106

6+00 E.
2/65/9/4

7+00 E.
2/59/7/7

5+00E.
2/5/8/9

6+00E.
2/46/4/21

7+00E.
2/53/5/25

8+00E.
3/53/7/6

4+00 E.
2/45/9/22

3+30 S.
5+00 E.
2/66/6/5

3+00 E.
1/33/7/1

3+30 S.
4+00 E.
2/65/9/12

2/57/13/5

3+30 S.
3+00 E.

1+95 S.
2+00 E.
2/37/8/2

5+30 S.
3+00 E.
2/82/13/8

4+00 E.
2/52/13/4

5+00 E.
2/57/11/1

6+00 E.
3/68/8/3

7+00 E.
4/97/9/8

8+00 E.
3/78/6/14

9+00
2/71/8

6+40 S.
5+00 E.
1/72/10/5

7+75 S.
5+00 E.
2/29/7/1

7 +00 N
(North trib.)
4/5/6/4

7+00 N
5/77/12/7

9+30 S.
8+00E.
4/69/12/4

9+30 S
5+00 E.
3/55/10/104

6+00 E.
4/64/8/6

3/62/20/12
6+00 W.

4/57/18/5
11+00 S.
5+00 W

5+00 W.
2/46/11/4

7 +00 N.
5+00 W.
1/52/8/6

0+95 N.
1+00 E.
3/66/6/42

2+00 E.
2/67/4/4

3+00 E.
3/65/7/112

4+00 E.
3/68/1/4

5+00 E.
3/72/9/9

6+00 E.
3/69/6/16

7+00 E.
3/65/7/25

8+00 E.
3/59/6/16

89-7
1/39/

K w a

G-89-2 6/2984/9/76

G-89-1 1/274/80/116

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13/76/15/7
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52/3693/278/134 89-4g

1988/457/3/282 89-5c

3/1260/14/9 89-5b

89-6l
10/1031/57/12

4/875/8/32 89-66

106/5005/16/85 89-5a

89-28 7/966/368/20

89-27f 2/1795/42/1081

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69/2155/3/80 89-7b

51/4067/7/107 89-8

11/9704/8/51 89-50

24/8349/19/216 89-9

89-26b 10/1186/22/126

11/6440/3/56 89-10

89-26a 81/3427/3/12

89-26 30/10,597/14/117

89-25a 10/291/9/6

89-25 18/405/9/13

89-62
14/2427/5/25

89-63
25/4356/3/101

69/1138/2/368 89-53

2/498/53/26 89-11

31/1039/19/53 89-12

8/384/5/30 89-64

14/1926/13/112 89-65

5/2166/4/112 89-13a

25/1959/10/155 89-13b

6/1889/12/87 89-13c

8/1809/34/120 89-52

38/1902/39/135 89-13d

1000

89-1
1/9/15/3

0+30 S.
1+00 E.
2/47/7/3

2+00 E.
2/48/9/7

3+00 E.
2/46/9/3

4+00 E.
2/59/7/2

5+00 E.
2/56/7/106

6+00 E.
2/65/9/4

7+00 E.
2/59/7/7

89-4f

5+00 E.
2/5/8/9

6+00 E.
2/46/4/21

7+00 E.
2/53/5/25

8+00 E.
3/53/7/6

4+00 E.
2/45/9/22

3+30 S.
5+00 E.
2/66/6/5

3+00 E.
1/33/7/1

3+30 S.
4+00 E.
2/65/9/12

1+95 S.
2+00 E.
2/37/8/2

2/57/13/5

3+30 S.
3+00 E.

5+30 S.
3+00 E.
2/82/13/8

4+00 E.
2/52/13/4

5+00 E.
2/57/11/1

6+00 E.
3/68/8/3

7+00 E.
4/97/9/8

8+00 E.
3/78/6/14

9+00
2/71/8

6+40 S.
5+00 E.
1/72/10/5

7+75 S.
5+00 E.
2/29/7/1

89-34
13/386/97/15

89-24f 1111/2071/787/10

89-24e 1190/5765/1636/25

89-35
1/81/11/4

89-24d 5/143/6/17

89-24c 2025/670/145/16

89-24b 49/900/325/12

89-24a 64/129/8/4

1/328/28/16 89-36a

1/19/2/18 89-36

9+30 S
5+00 E.
3/55/10/104

6+00 E.
4/64/8/6

7+00 N
(North trib.)
4/5/6/4

7+00 N
5/77/12/7

9+30 S.
8+00 E.
4/69/12/4

3/62/20/12
6+00 W.

4/57/18/5
11+00 S.
5+00 W.

Kwanika

9+25W

0+00

2+00S

4+00S

6+00S

3b
ep,ch/,kspar,hem,sc,///,
□ 250°/64°; 126°/68°,
● 238°-290°/?, Py,Cpy

070°/60°

210°-220°/60°

A-1
a,sc,ep,ch/

3b
kspar,✳,Cpy,Py

3b
kspar,ch,ep,Cpy

3b
kspar,ep,ch,□,Cpy,Py

3a
Py,● 215°/?

105°
70°

3b
ep,kspar,ch,●,Cpy,Py

3a

350°/66°
220°/62°
037°/60°
304°/85

A-5

A-4

Py,sc,a,////
B-4

3b
● 101°/70°

3b
Cpy,Py,hem,ch,ep,
kspar,///,● 040°/?

3b
Cpy,Ba,///,ep,ch,kspar
B-3

3b
//, a, Py

040°/?

A-2

C-1
C-2

100°/60°
80°

3b
Cpy,Py,sc, a/,□,●
B-2,
X-2

3b
Py,sc

X-1

3b
Py,Cpy,Mo,●,sc,hem

3b
///,Py,Cpy
B-1

3b
sc,Py,Cpy

3b
sc,Py

3b
Cpy,Py,sc,ep

3b
Py

021°/46°
352°/74°
15°

B-5

3b
Cpy,Py,kspar,ch,ep

3b
ch,hem,●,//

3b
a,✳,kspar,////,Cpy,Py,Bx

3b
ch,hem/,Py

3b
ch,✳,sc,///,a,Bx,
●,□,Cpy,Py

A-9

A-8

A-10

3b
////,Bx210°-220°/80°,a,
ch,sc,Py,Cpy,kspar,●

5
mappable rubble

5
Mo,Cpy,Py,a,
//,ep,hem,□,sc

5
//,sc,hem,Py

6b

5
Py,hem,sc

contact 105°,hem,●,□

5
hem

5
/,hem,●

5
sc,Py

5
///,hem,●

2a

2a
□

A-3

1000