AARDEAU MINING N.L.

OPEN FILE

EL 3618 AND EL 3619

REPORT ON AREAS RELINQUISHED

IN JULY 1985

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September 1985

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FIGURES

SUMMARY

Exploration Licences 3618 and 3619 are held by Aardeau Mining N.L. They are between 40 and 50 air kilometres east of Pine Creek, N.T.

Parts of both licences were relinquished in July 1985 and this report covers those areas relinquished.

The Wandie area is subdued country with low hills rising out of broad alluvial flats. However, the northern portion of EL 3618 is hilly with relief of 100 metres. Rock types are sediments of the Burrell Creek Formation of Early Proterozoic age, which have been intruded by the Mount Davis Granite. This has metamorphosed the sediments in places, to form hornfels. Mineralization occurs as gold in quartz reefs and as base metal sulphides.

A regional pan concentrate survey was conducted over the two Exploration Licences and reconnaissance eluvial soil sampling was also undertaken in areas containing quartz reefs. Results obtained in the areas now relinquished are given in accompanying tables. From these tables it is seen that there are interesting base metal possibilities.

I INTRODUCTION

Exploration Licence 3618 was granted on 14 January 1983 and Exploration Licence 3619 was approved on 31 December 1982. They are now held by Aardeau Mining NL, having been acquired from New Wandie Mines (NT) in June 1983.

It is a requirement of the Department of Mines and Energy that at least 50 per cent of the area of an Exploration Licence be relinquished annually, and this report covers the areas relinquished in July 1985 in accordance with the directive.

Location and Access

The Exploration Licences are situated in the Wandie area, and the old mining areas of Mount Diamond and Mount Davis are found in the northern part of EL 3618. These mine areas are some 12 kilometres southeast of Moline. EL 3619 is around the Wandie gold mining area, and is 16 kilometres south of Moline, which is 49 kilometres northeast of Pine Creek. Pine Creek is 220 kilometres southeast of Darwin and 90 kilometres northwest of Katherine, on the sealed Stuart Highway.

Access from Pine Creek is by a graded road to the old Moline mine, and by a mine road to Wandie, a further 16 kilometres south of Moline. There is a haulage road from the Mount Diamond Mine to the treatment plant at Moline, which is still negotiable, although the mine and plant have been abandoned. There is an access road to Mount Diamond and Mount Davis from a point about 9 kilometres south of Moline on the Wandie Mine road, and a track from Mount Diamond runs south, then eastwards, across the low flats north of the Wandie Creek, almost to the eastern boundary of El 3618.

II TENURE

Exploration Licences 3618 and 3619 are held by Aardeau Mining NL. El 3618 was granted by the Hon. Minister on 14 January 1982 and Exploration Licence 3619 was granted on 31 December 1982.

EL 3618 originally consisted of 24 blocks bounded by latitudes 13°44'S and 13°48'S, and by longitudes 132°13'E and 132°19'E. Twelve blocks have been relinquished, and it now lies between latitudes 13°45'S and 13°48'S, while it is still bounded by longitudes 132°13'E and 132°19'E.

EL 3619 originally comprised 3 blocks adjoining the western boundary of EL 3618. Two blocks have been dropped, leaving 1 block which lies between latitudes 13°47'S and 13°48'S, and between longitudes 132°12'E and 132°13'E.

The area relinquished is shown on Fig. 2.

III PHYSICAL FEATURES

The Wandie area is subdued country with low rounded hills rising out of broad alluvial flats. However, the northern portion of EL 3618 is hilly with relief up to 100 metres. Mount Gardiner and Mount Davis are in these hills, the former reaching 264 metres above sea level.

Wandie Creek runs generally westwards near the southern boundary of EL 3618 in a broad alluvial valley. It is fed by tributaries flowing southwards through EL 3618 and EL 3619.

The climate is distinctly monsoonal with a wet season lasting from about late November until March, while the remainder of the year is dry. Low-lying areas are inundated during the wet season, making it impossible to move vehicles at that time.

IV GEOLOGY

The Wandie area is in the central part of the Pine Creek Geosyncline. Geological Survey officers put the rocks of the area in the Burrell Creek Formation of Lower Proterozoic age (Walpole et al 1968).

Rock types in the Burrell Creek Formation include chert, grey mudstone, siltstone and a greywacke of fine to medium grained texture.

The Burrell Creek Formation has been intruded by the Mount Davis Granite in the northern part of EL 3618. This granite is generally medium-grained to coarse-grained pink granite, largely porphyritic in texture, with large orthoclase phenocrysts. There are also pink and greenish adamellites, and microgranitic and aplitic dykes can be found in places.

The sediments of the Burrell Creek Formation have suffered contact metamorphism from the Mount Davis Granite, with the formation of an extensive hornfels zone in EL 3618, south of the granite. This is up to 2 to 3 kilometres in width.

The Burrell Creek sediments have been subjected to some regional metamorphism with the formation of phyllites in places, This occurred before the emplacement of the Mount Davis Granite.

The sedimentary sequence has been folded along NW to NNW axes. The beds are very steep to steep and form tight anticlines and synclines.

Fig. 3 is a regional geological map of the area in which the two Exploration Licences occur.

V REGIONAL GEOCHEMICAL SURVEY

A pan concentrate survey was conducted over EL 3618 and EL 3619 as it has been found in other parts of northern Australia to be more useful than ordinary stream sediment sampling. Eluvial samples were taken from residual soil over areas of quartz mineralization, and they were also concentrated to obtain a heavy fraction.

For the stream sediment sampling, two pans (8040cc) sieved to pass ¼ inch were collected from each sampling site. Eluvial samples were collected at quartz outcrops and float areas. One sieved pan (4020cc) was collected from each of the eluvial sample sites.

The drainage sediments and eluvial samples were deslimed and concentrated by a 'gold separator', which is a circular concentrating table similar in principle to the Wilfley Table. The desliming and concentration of the drainage and eluvial samples were done in the field. Fine grinding and analysis were undertaken by Pilbara Laboratories in Townsville. The analytical methods and lower limit of detection of the elements determined are given below;

Table 1. Laboratory Procedures

Element	Analytical Method	Lower Limit of Detection
Gold	FA-50, AA Finish	0.005 ppm
Silver	Acid attack, AAS	0.3 ppm
Copper	Acid attack, AAS	2.0 ppm
Lead	Acid attack, AAS	5.0 ppm
Zinc	Acid attack, AAS	2.0 ppm
Arsenic	Hydride generation	2.0 ppm

The precision of the analytical methods is reported to be within plus or minus 15 per cent maximum.

Sample sites in the area relinquished are shown in Fig. 4. Values in parts per million for the elements determined on the pan concentrates are given in Table 2, while results of the eluvials and rock samples appear in Table 3.

Some of the rock samples contain relatively high lead, zinc and arsenic, indicating the presence of sulphide minerals. Sample No AR 2854 is a copper ore specimen from the old Mount Diamond mine area.

VI CONCLUSION

The Department of Mines and Energy requires that at least 50 per cent of the area of an Exploration Licence be relinquished annually. The blocks chosen for relinquishment contain less favourable potential than those which have been retained for further work, but they do contain interesting indications of base metals.

VII REFERENCE

WALPOLE, B.P., DUNNE, P.R. and RANDAL, M.A., 1968. Geology of the Katherine-Darwin Region,N.T., Bur. Miner. Resour., Aust. Bull. 82

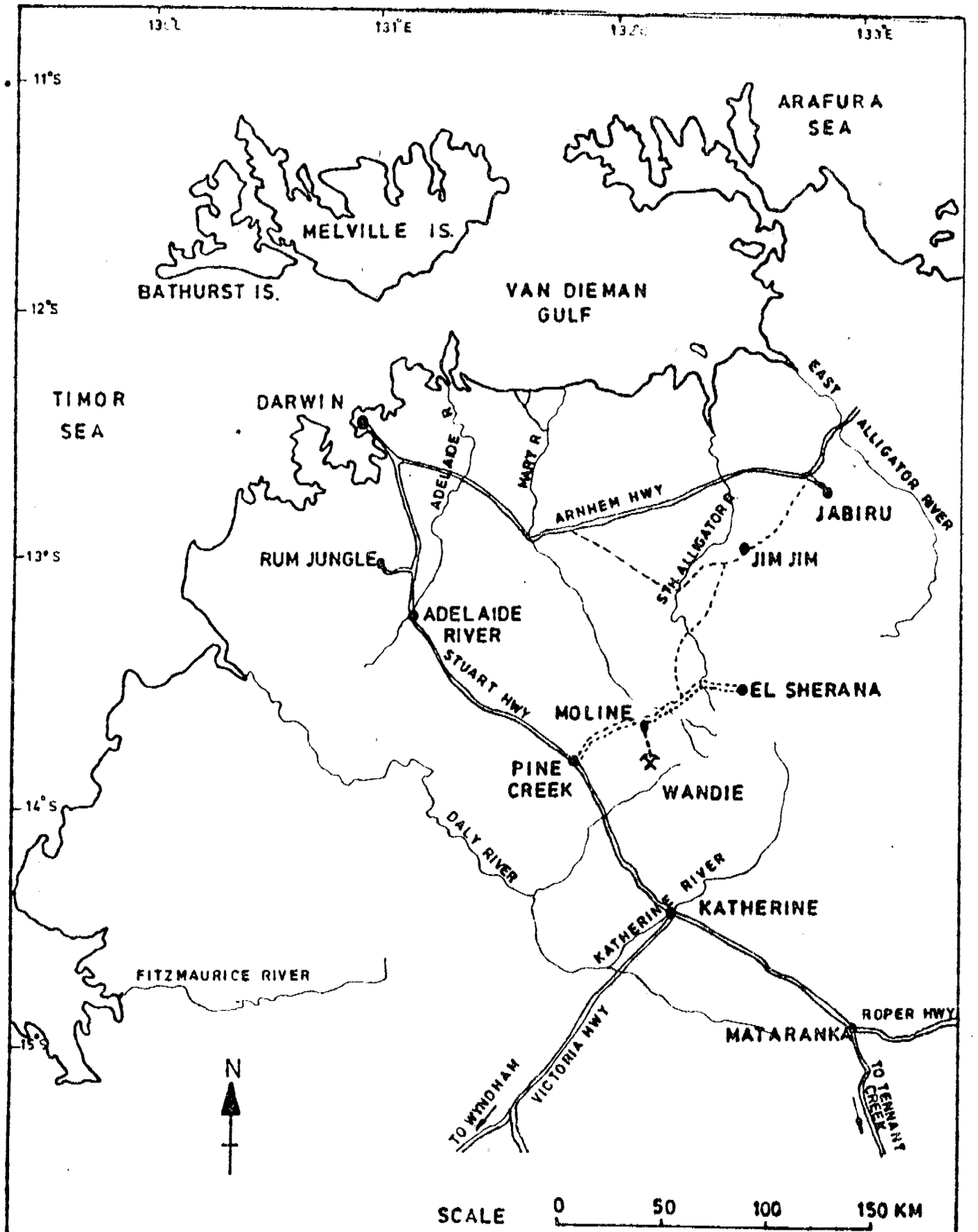
TABLE 2. DRAINAGE SEDIMENT PAN CONCENTRATE SAMPLE RESULTS

Sample No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm
WPC 3	1.75	0.3	10	16	14	15
WPC 4	0.517	-0.3	8	110	45	43
WPC 11	0.322	-0.3	13	21	8	49
WPC 12	0.318	-0.3	11	20	10	35
WPC 13	1.25	-0.3	10	24	13	10
WPC 15	0.172	-0.3	10	112	9	60
WPC 18	0.098	-0.3	140	88	25	130
WPC 20	0.735	-0.3	42	94	65	240

TABLE 3. ELUVIAL AND ROCK SAMPLE RESULTS

Sample No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm
AR 2853	0.057	-0,3	52	141	7	71
AR 2854	0.149	124	4.19%	495	1250	82
AR 2861	0.126	-0,3	7	6	7	-2
AR 2862	0.056	-0.3	11	10	26	15
AR 2885	0.074	-0.3	19	84	43	75
AR 2887	5.35	-0.3	17	60	42	92
AR 2888	-0.005	-0.3	58	268	154	47
AR 2889	0.478	-0.3	8	92	20	75
AR 2890	1.53	-0.3	10	16	16	8
AR 2893	0.127	0.7	90	288	285	1670
AR 2894	0.285	-0.3	11	114	54	260
AR 2895	2.60	-0.3	13	29	22	31

- before a number denotes less than



AARDEAU MINING NL

EL 3618 & EL 3619

WANDIE GOLD MINE

LOCATION MAP

PREPARED BY T.U.JOHN AND ASSOCIATES PTY. LTD.

FIG. 1

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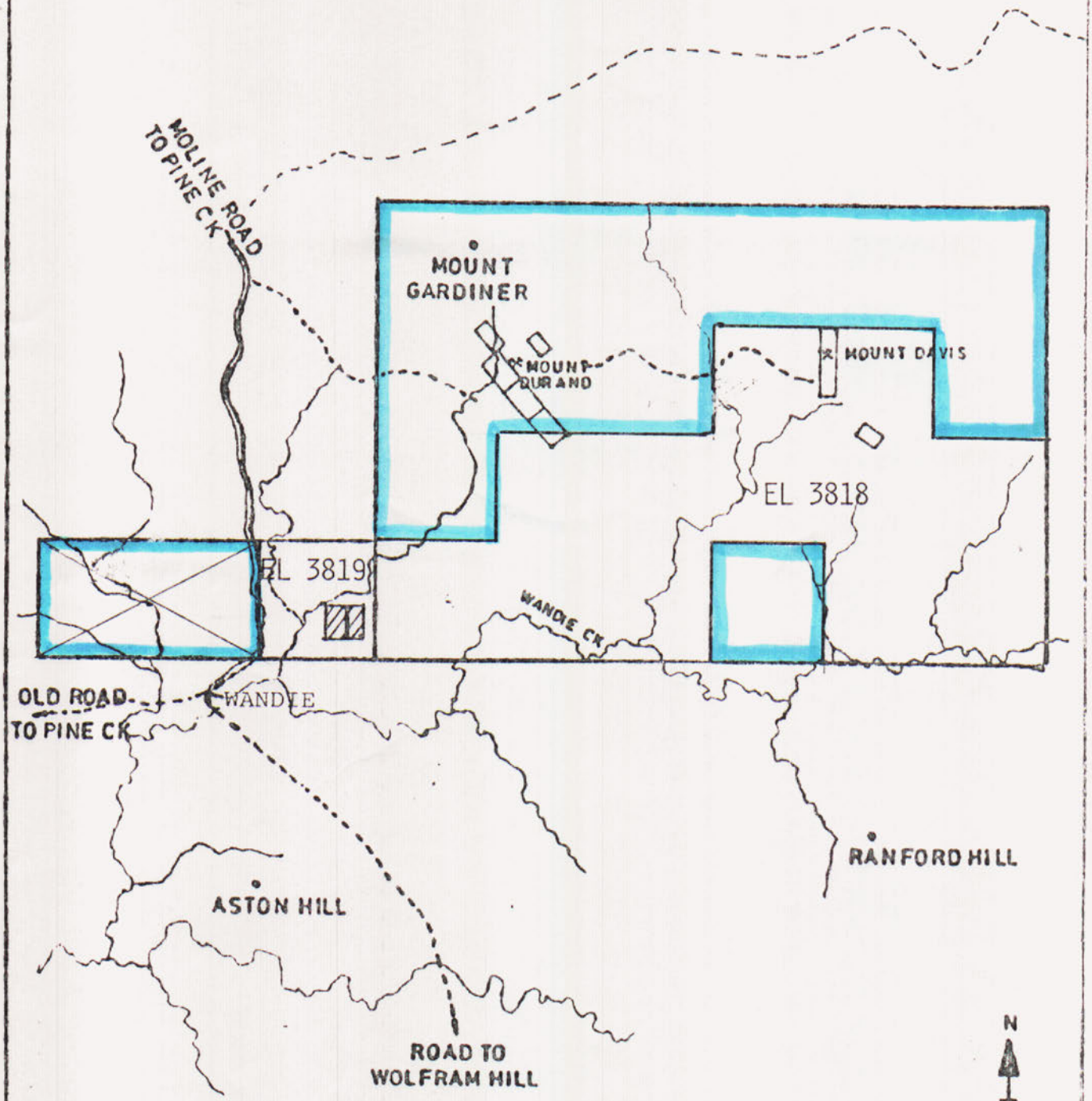

LEASES HELD BY OTHERS

MCN241 & MCN242 HELD BY AARDEAU MINING NL.

MINE ROAD

TRACK

AREAS RELINQUISHED

SCALE 1:100,000 0 1 2 3 4KM

AARDEAU MINING NL

EL 3618 & EL 3619

WANDIE GOLD MINE

TENEMENT LOCATION MAP

FIGURE 2.

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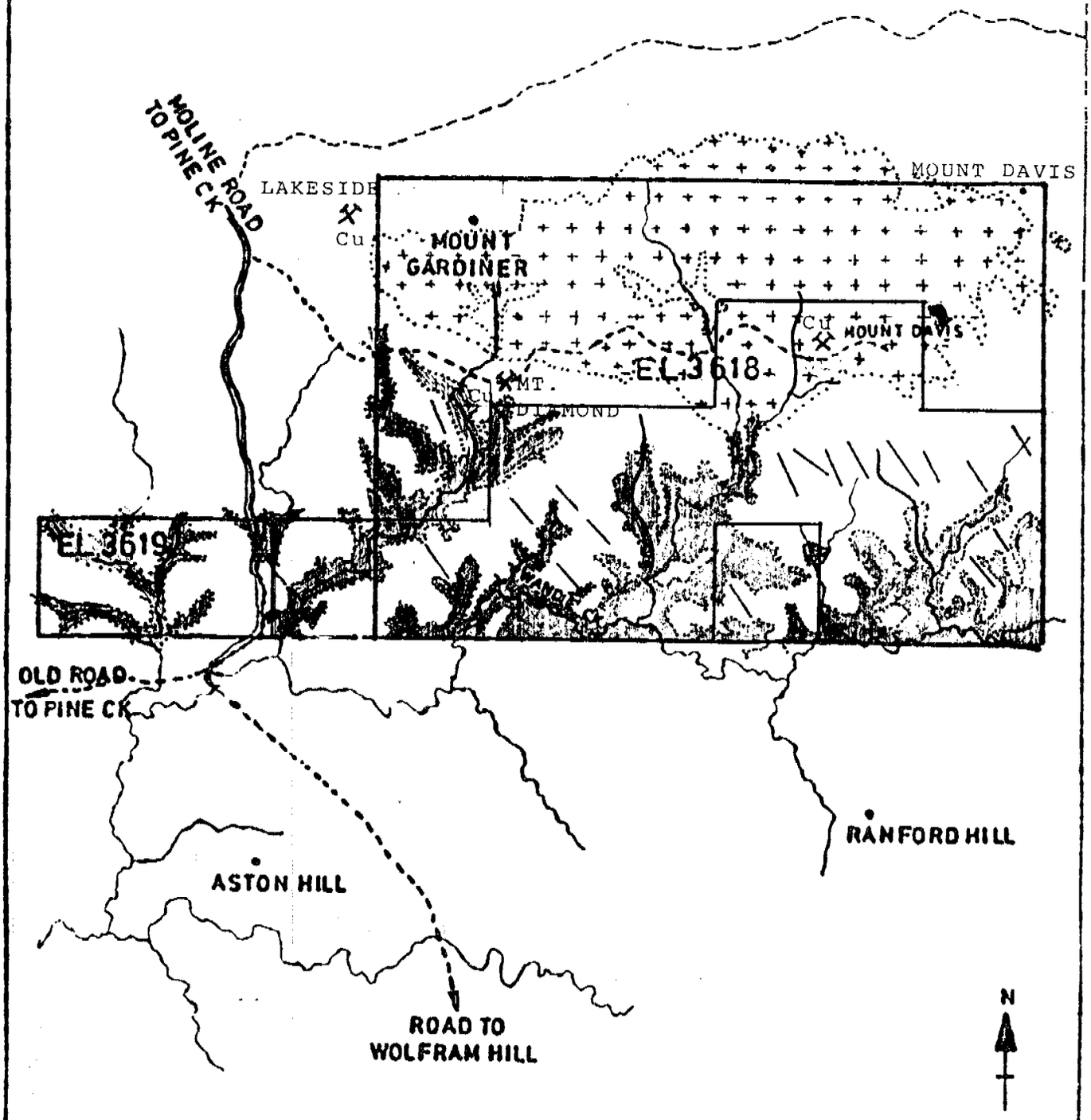

Alluvium

Mount Davis Granite

Burrell Creek Formation

Trend Lines

SCALE 0 1 2 3 4KM

AARDEAU MINING NL

EL 3618 & EL 3619

WANDIE GOLD MINE

GEOLOGICAL MAP

FIGURE 3.

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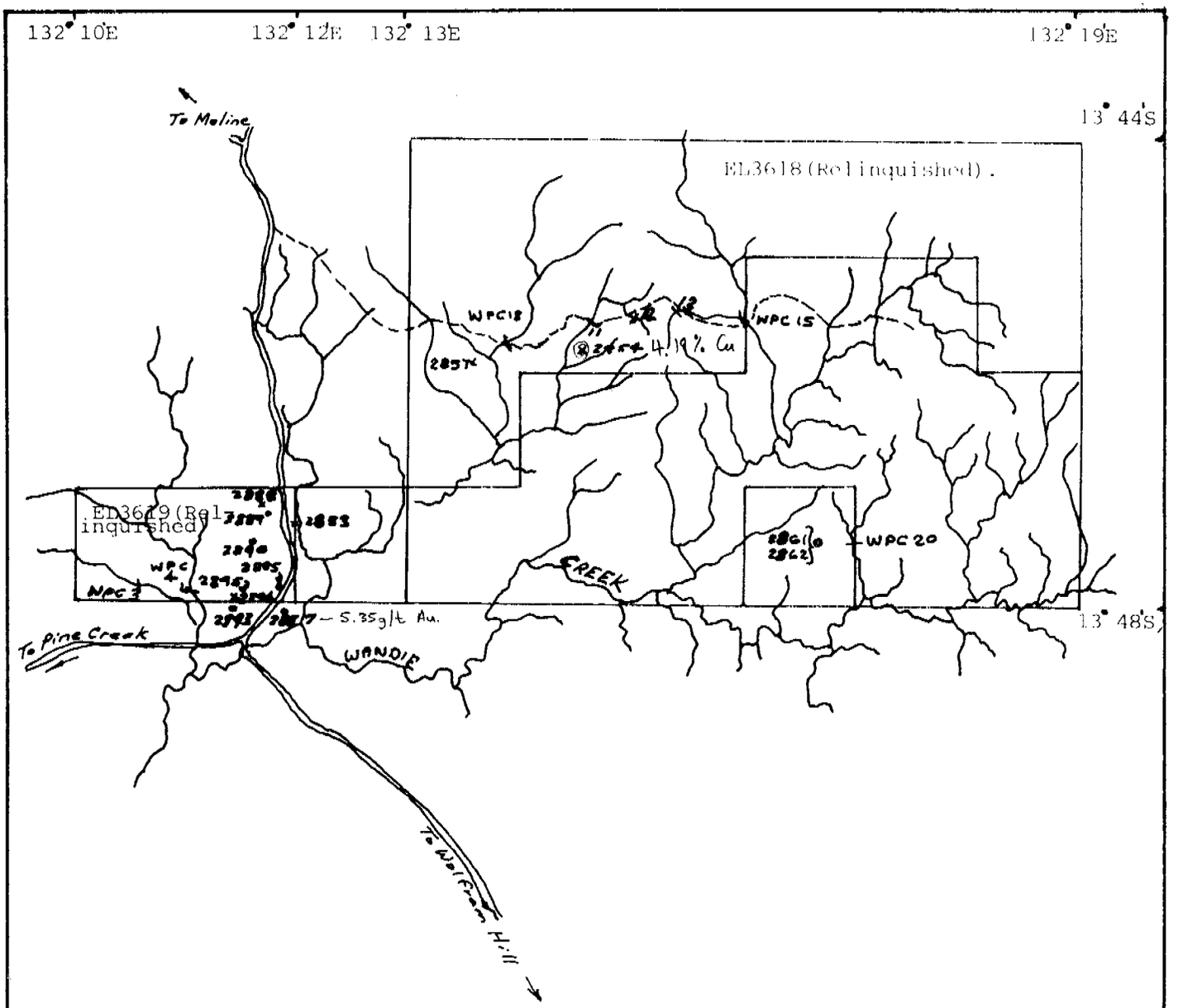

WPC 18 — Drainage Pan Concentrate Site

2889 • Eluvial Sample Site

2888 × Rock Sample Site

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AREA RELINQUISHED

FIGURE 4.

PAN CONCENTRATE SAMPLES
ELUVIAL AND ROCK SAMPLES

LOCATION MAP

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