C.R.A. EXPLORATION PROPRIETARY LIMITED

Ref. No. N.T. 55

SUBJECT: NAMOONA AREA, NORTHERN TERRITORY - SUMMARY AND CONCLUSIONS.

OPEN FILE

AUTHOR: G. W. Patterson

MINES BRANCH
GEOLOGICAL LIBRARY

THIS MAGAZINE IS NOT TO BE REMOVED OR DESTROYED

CR1959-0006
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Sect.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary and Conclusion</td>
<td>1</td>
</tr>
<tr>
<td>Recommendations</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Location and Access</td>
<td>1</td>
</tr>
<tr>
<td>Geology and Mineralisation</td>
<td>1</td>
</tr>
<tr>
<td>Namoona Prospect</td>
<td>1</td>
</tr>
<tr>
<td>Minglo Prospect</td>
<td>1</td>
</tr>
<tr>
<td>Geochemical Anomalies</td>
<td>1</td>
</tr>
<tr>
<td>References</td>
<td>1</td>
</tr>
<tr>
<td>List of Plans</td>
<td>1</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Namoona Area, N.T. - A.P. 448, Sketch Plan Showing Mineral Occurrences.</td>
</tr>
<tr>
<td>3</td>
<td>X27/470 Namoona, N.T. Showing Costeans and Drill Holes (Northern Sheet).</td>
</tr>
<tr>
<td>3</td>
<td>X27/460 Plan Namoona Prospect, N.T. Showing Costeans and Drill Holes (Southern Sheet).</td>
</tr>
<tr>
<td>3</td>
<td>X27/471 Namoona, N.T. Showing Costeans and Drill Holes (Southwestern Sheet).</td>
</tr>
<tr>
<td>3</td>
<td>X27/467 Waggon Drill Hole Assays, Namoona Prospect, N.T.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>X27/461 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 1)</td>
</tr>
<tr>
<td>4</td>
<td>X27/464 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 2)</td>
</tr>
<tr>
<td>4</td>
<td>X27/462 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 3)</td>
</tr>
<tr>
<td>4</td>
<td>X27/463 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 4)</td>
</tr>
<tr>
<td>5</td>
<td>X27/465 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 5)</td>
</tr>
<tr>
<td>5</td>
<td>X27/473 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 6)</td>
</tr>
<tr>
<td>5</td>
<td>X27/474 Namoona Prospect, N.T. Costean Mapping and Sampling Detail (Sheet 7)</td>
</tr>
<tr>
<td>5</td>
<td>X27/468 Cross Sections, Namoona Prospect, N.T.</td>
</tr>
<tr>
<td>6</td>
<td>N.T. 3 Mingio Prospect - A. to P. 448 - Geological Plan and Sections.</td>
</tr>
<tr>
<td>6</td>
<td>N.T. 126 Namoona Lead Prospect - Plan Showing Areas Covered by Geochemical Prospecting Survey - 1955 with additional Sampling - 1964.</td>
</tr>
<tr>
<td>7</td>
<td>N.T. 129 Geochemical Survey North Grid Namoona Lead Prospect, N.T.</td>
</tr>
<tr>
<td>8</td>
<td>N.T. 61 Geochemical Survey South Grid Namoona Lead Prospect, N.T.</td>
</tr>
<tr>
<td>9</td>
<td>N.T. 7 Namoona, N.T. A.P. 488 - Sketch Plan Showing Outcrops of Ferrug. Gossans.</td>
</tr>
</tbody>
</table>
A number of costeans, 16 diamond drill holes (total footage 1,377) and 60 wagon drill holes (total footage 2,352) in the 28-mile length of lead showings at Namoona did not prove payable quantities of lead ore.

Geochemical sampling in the vicinity of Coirwong Creek, 2 miles northwest of the Namoona prospect, indicated 2 anomalies where high grade lead mineralisation could occur beneath the soil cover. No work has been done on this area apart from two costeans and some wagon drill holes (total footage 466) between the two anomalies.

The lead in the Namoona prospect has been shown to consist of narrow high grade seams of galena and cerussite in siltstones. There do not appear to be any areas of widespread low grade mineralisation.

Prospecting and detailed mapping of ferruginous gossans of the Brock's Creek type in a 75 square mile area some distance northwest of Namoona did not reveal any base metal mineralisation.

A shaft sunk on the Kingo lead prospect 5 miles west of Namoona indicated an overall grade of not less than 12% lead in a 10 foot wide fault breccia. The mineral is anglesite after galena with some unaltered sulphide. The prospect may be regarded as a good gouger's proposition.

**RECOMMENDATIONS**

in view of the large amount of drilling and costeanning carried out on the Namoona Prospect and the sporadic nature of the mineralisation, further work in this prospect cannot be recommended.

The geochemical anomalies northwest of Namoona, since they are virtually untested, must be regarded as lead prospects worthy of further investigation. Check geochemical sampling and extraction of lead by an improved technique has confirmed the position and size of the most northwesterly anomaly.
The existing geochemical grid could easily be extended to cover a wider area. Complete testing would involve coteeanning, wagon drilling and diamond drilling as was done at the Namoona prospect. However, some valuable knowledge could probably be gained from hand dug pits (these would have to be at least 6 feet deep since a pit sunk on Anomaly A did not strike rock at this depth).

INTRODUCTION

The Namoona lead prospect was discovered by Enterprise Exploration Company prospectors in September 1954. It consists of a few small showings of galena and cerussite in poorly outcropping grey siltstone.

Geological mapping was commenced by B. P. Thomson (1) and bulldozer coteeanning and sampling were carried out simultaneously, supervised by H. Brennan. The prospect was eventually drilled by wagon drill and diamond drill.

An Authority to Prospect (A.P. No. 448) of about 525 square miles was obtained over the surrounding country and in the course of prospecting another lead showing was discovered at Minglo, 5 miles southwest of Namoona.

The geological mapping was carried out by B. P. Thomson, W. B. Thomas and C. Sleis. Prospecting was done by H. Brennan, P. Guidicetti, A. H. Connell and some native boys. H. V. Wilkins supervised drilling and carried out some sampling.

A geochemical survey of an area, about 5 miles long by 2 miles wide, was conducted northwest of the Namoona prospect by a Bureau of Mineral Resources team under A. H. Debmaas.

To enable further testing of geochemical anomalies a small area of 10 square miles (A.P. No. 656) was obtained for 6 months in 1956. Some check sampling was carried out, but the existing grid was not extended.
LOCATION AND ACCESS

The Namoona area is situated about 40 miles northwest of Pine Creek. (Pine Creek is 157 miles southeast of Darwin, on the Stuart Highway and North Australian Railway). It can be reached by road from Pine Creek via Goodparla Station or from Grove Hill (on the railway 40 miles northwest of Pine Creek) via Mt. Masson.

The road through Goodparla is the better track, in regular use by the United Uranium N. L. as access to the El Sharana Mine. The 20 miles (approx.) from Goodparla to Namoona is negotiable only in dry weather. During the wet season the entire road is liable to be cut off by the Mary River 25 miles from Pine Creek.

The road through Grove Hill is negotiable only in the dry season and is negotiable only by 4-wheel drive vehicle beyond the Mary River Crossing.

GEOLOGY AND MINERALISATION

The rocks in which the mineralisation occurs are siltstones and greywackes of the Nasser Formation of the Lower Proterozoic. This formation has been mapped by the B. K. R. as stratigraphically lower than the Golden Dyke Formation, which is the host of the Nus Jungle mineralisation.

The regional trend of the area is northwest and the lead mineralisation, as well as the ferruginous gossans, conforms to this trend.

The extensively outcropping Cullen Granite occurs 3 miles southwest of the Namoona prospect.

Lead mineralisation occurs variously as galena, anglesite and cerussite and can be regarded as primarily lead. There is a little sphalerite and pyrite and the ferruginous Brock's Creek type gossans seen in the northwestern part of the area are probably due to pyrite.
NAMOONA PROSPECT

The Namoona Prospect is impressive by virtue of its length (about 2½ miles) and the great number of lead showings at or near the surface.

The richest mineralisation occurs near the southern end where a 9-foot width (with visible galena) encountered in 100 N costeans assayed 10% lead. All of the wagon and diamond drilling was concentrated in this part of the prospect, but no significant width of lead mineralisation was encountered on any of the holes. (See plans Nos. X27/460, 461, 462, 463, 464, 465, 467, 468, 470, 471, 473, 474).

Costeaming was carried out at right angles to a main baseline running in a northwesterly direction for 6,200 feet. Another short baseline running in the same direction commenced about 1,700 feet southwest of the southern end of the main baseline. It is 1,000 feet long and has three costeans along it.

In all about 40 costeans were cut, all by bulldozer. The surface showings can therefore be said to have been thoroughly tested.

Assays of all the mineralisation sampled are not available, but the major proportion of the values is shown in the costean and drill plans.

MINGLO PROSPECT

The Minglo Prospect is an interesting galena-anglesite occurrence about 5 miles southwest of Namoona. It has been described by W. N. Thomas (3), who recommended developmental opencutting to enable thorough appraisal of the ore potential.

The ore occurs in a fault breccia, which is about 10 feet wide in the shaft. The shaft was sunk to 27 feet and short cross-cuts into both walls have exposed a 16 foot width of mineralisation (reactions obtained with KI test).
The average grade of material excavated from the shaft has been estimated at 26% lead. Since the shaft tested only half the true width of the breccia, the overall grade would therefore be not less than 12%.

Plan No. N. T. 3 shows the surface geology and cross-section of the prospect.

Some radioactivity was located in the vicinity of the lead showing, the most radioactive spots being 140 feet and 150 feet respectively south of the shaft. A sample from one of these assayed approximately 3 lbs./ton U_3O_8.

**GEOCHEMICAL ANOMALIES**

The geochemical work carried out by A. H. Debnam (B. M. R.) in 1955 indicated two anomalies, on either side of Coirwong Creek. These anomalies, occupying rectangular areas 1,000 feet by 3,200 feet and 1,000 feet by 2,400 feet respectively, were designated A and B by Debnam. (See Plan No. N. T. 58).

Anomaly A occurs where soil cover is deep and the terrain very flat. Debnam considers that there would be a minimum of soil migration and that the mineralisation should occur directly beneath the anomaly.

There is some outcropping lead mineralisation (cerussite) on anomaly B and Debnam has expressed the view that the fourth order anomaly extending to the northwest and southeast may be a surface expression of similar mineralisation.

G. W. Patterson.

Darwin
February, 1959.

**REFERENCES**


GEOLOGICAL PLAN
Scale 1" = 20'

LEGEND
- Massive - galena and anglesite
- Blocky graphitic slate
- Talcy schist and kaolin
- Fault - Breccia Zone

CROSS SECTION SOUTH WALL OF SHAFT - LOOKING SOUTH
- Limonitic and hematitic brown pug with fragments of massive black slate and slugs of galena and anglesite
- Approx limits of breccia zone
- White pug kaolin and talc
- Blocky black slate - mineralized
- Strike at right angles to fault

CROSS SECTION SOUTH WALL OF PIT - LOOKING SOUTH
- Bedding in contorted grey black brecciated slates
- Fractures in silicified black slate breccia
- Slugs of galena and anglesite

GEOLOGICAL PLAN & SECTIONS.

Enterprise Exploration Co. Pty. Ltd.

MINGLO PROSPECT
A-P 448

Scale
As shown
Date
May 1959
Plan No
N.T. 3.