ACACIA RESOURCES LIMITED

PARTIAL RELINQUISHMENT REPORT
FOR UNION CONSOLIDATED - SEL.8497

FOR THE PERIOD 20TH APRIL 1994 –
19TH JANUARY 1999

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Drafting: A. Horner
Date: October 1999 Copy No: 1

Map Sheets:
1: 250 000 Pine Creek SD52-8
1: 100 000 Pine Creek 5270

DISTRIBUTION
Copy 1: NT Department of Mines & Energy
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3: Acacia Resources - Darwin
4: Acacia Resources - URGM
5: Acacia Resources - Field
SUMMARY

Acacia Resources Limited is currently exploring Substitute Exploration License (SEL) 8497 - Union Consolidated. Union Consolidated is part of a group reporting area which includes SEL 7707 (Snaddens Creek). SEL 8497 is located approximately 250 km south of Darwin and 2 km west of Acacia Resources 100% owned Union Reefs Gold Mine in the Pine Creek district of the Northern Territory.

In order to comply with statutory requirements, a partial relinquishment was completed on the 19th January 1999. This report summarises the exploration completed by Acacia Resources Limited within SEL 8497 during the period 20th April 1994 to 19th January 1999.

In summary the following work was completed within the relinquished portions of SEL 8497 by Acacia Resources during our five year tenure:

- Regional geophysical interpretation
- Geochemical Surface Sampling including:
  - Surface hand samples 80
  - Auger samples 1316
- Detailed aeromagnetic and radiometric survey
- Aerial photography and structural interpretation
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prior to the 19th April 1994.
1.0 INTRODUCTION

Acacia Resources Limited is currently exploring Substitute Exploration License (SEL) 8497 - "Union Consolidated" situated approximately 225 km south of Darwin (Figure 1). Union Consolidated was granted to Acacia Resources Limited (previously the Shell Company of Australia), on the 20th April 1994 for a period of 3 years. Seven graticular blocks were relinquished from the tenement on the 19th January 1999 and this report summarises the exploration work completed within SEL8497 during Acacia tenure.

2.0 TENEMENT STATUS

Union Consolidated was granted to Acacia Resources Limited (previously the Shell Company of Australia), on the 20th April 1994 for a period of 3 years. This license incorporated previous exploration licenses 7369, 7518, 7757, 7813 and 7814 and comprised 23 blocks. The license was reduced to 17 blocks in March 1995, and a further seven blocks were relinquished on 19th January 1999, as detailed below (Figure 1):

Blocks relinquished: Map No. 14/6-1V 24/50, 24-25/51, 25/52, 25/53
                Map No. 14/6-1  26-27/54

Blocks retained:     Map No. 14/6-1  26-27/55
                Map No. 14/6-11 27-29/56, 28-29/57, 29-30/58, 30/59

The license was due to expire on the 19th April 1997, and a renewal was granted for a further two years. A second, pending renewal application on the remaining 10 blocks was submitted in February 1999.

2.1 Aboriginal Area Protection Authority Clearance

The AAPA issued Authority Certificate No. C98/149, for a period of two years commencing on the 18th December 1998. There are no registered sites of significance within the relinquished portion of the tenement.
3.0 LOCATION AND ACCESS

The centre of SEL8497 is situated approximately 20km northwest of Pine Creek (Figure 1). Union Consolidated adjoins the western boundary of MLN 1109, which includes Acacia Resources’ Union Reefs Gold Mine. The license area runs parallel to the Stuart Highway and may be accessed via a number of sealed and unsealed roads and tracks branching off the highway.

4.0 REGIONAL GEOLOGY

The leases are located in the central portion of the Pine Creek Geosyncline. The geosyncline contains Early Proterozoic metasedimentary rocks resting on a gneissic and granitic Archaean basement (Figure 2). The metasediments represent a preserved basinal sequence up to 14km thick (Needham et al., 1980). These rocks were tightly folded and metamorphosed to greenschist facies (in some places amphibolite) at about 1890 to 1870 Ma (Ferguson, 1980).

The geosynclinal sequence is intruded by transitional igneous rocks including predeformational dolerite lopoliths and dykes and post deformational granites. Largely undeformed platform cover of Middle and Late Proterozoic, Cambro-Ordovician and Mesozoic strata rest on these with marked unconformity.

Union Consolidated incorporates tightly folded, northwest trending phyllite, chert and banded iron siltstones of Mount Bonnie Formation and interbedded greywacke and silstone of Burrell Creek Formation. Outcrop is prevalent in the northern portion of the lease, and the southern portion of the leases is characterised by shallow cover and deeper weathering.

Snadden’s Creek incorporates west-northwest trending steeply overturned folds of dominantly Mt Bonnie Formation with Gerowie Tuff in the north and Burrell Creek Formation in the southeast. A major fault or shear trending northwest separates Mt Bonnie and Burrell Creek Formation, in the southwestern portion of the lease.
Basement geology is well exposed throughout the lease, with very steep and severe topography in the northern half of the lease.

Dolerite dykes have intruded Mt Bonnie Formation at a low angle to bedding and portions of the Cullen Batholith. The McMinns Bluff and Table Top granites outcrop on the western margin of the leases.

A number of previously defined Au and Sn prospects occur within the Snadden’s Creek lease. A scattering of shallow Sn workings occur within the Mc Minns Bluff Granite and Lower Proterozoic sediments. Gold prospects within the lease, including Best Chance and Hot Rock are characterised smoky quartz vein systems adjacent to faults (Figure 3).

5.0 PREVIOUS WORK

The area covered by the relinquished portions of Union Consolidated has been actively explored using modern exploration techniques since the late 1970’s. Several different companies have held the ground in this time. Below is a summary of the field based exploration completed by the various companies in this time (Table 1). Sample locations and assay results for this work is shown in Figures 3 and 4. Sample locations and assay results are also included in Appendix 2.

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>No. Rockchips</th>
<th>No. Stream Sed Samples</th>
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<tr>
<td>Billiton</td>
<td>1990-1994</td>
<td>25</td>
<td>122</td>
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<tr>
<td>MIM</td>
<td>1996</td>
<td>2</td>
<td>-</td>
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<tr>
<td>Magnum</td>
<td>Unknown</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Geonorth</td>
<td>Unknown</td>
<td>196</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 1 – Summary of work completed within the relinquished portions of SEL8497 prior to the 19th April 1994.
6.0 WORK COMPLETED 19TH APRIL 1994 – 19TH JANUARY 1999

Exploration completed by Acacia since the granting of Union Consolidated in 1994 is summarised below. Sample ledgers and assay results for all samples submitted are included in Appendix 2 (Disk – ASCII comma delimited format). Sample locations and results are shown in Figures 3 and 4 respectively.

6.1 19th April 1994 to 18th April 1995 (Report No. 08.7521)

Geological Mapping & Airphoto Interpretation

Utilising 1:25,000 scale air photographs, acquired through previous explorers a structural and geological interpretation was completed over much of SEL8497. Important structural corridors such as the Pine Creek Shear Zone (which runs up through the eastern margin of the lease) were identified. Exploration for the remainder of the reporting period focused on exploration in these areas.

6.2 19th April 1995 to 18th April 1996 (Report No. 08.7970)

Multiclient aeromagnetic dataset

The 1988 Aerodata multiclient aeromagnetic dataset covering the Pine Creek area was purchased by Acacia in late 1995. This dataset was reprocessed & used to aid further target definition in the area. During reprocessing, pixel sizes were reduced, to give better clarity and enable enhancement of the structural features interpreted from the previous processing.

Data compilation and review

A comprehensive literature review of previous explorers activities was completed during this reporting period. Data entry was completed into micromine for all available open file geochemical data from the Pine Creek, Union Reefs and parts of the Burrundie 1:50,000 scale map sheets.
6.3 19th April 1996 to 18th April 1997 (Report No. 08.7862)

Geochemical Soil Sampling and Gridding

Approximately 5.6 line kilometres of regional gridding was completed within the relinquished portions of SEL8497. The regional exploration grid originates from a surveyed baseline bearing 331.5° magnetic with cross lines bearing at 61.5° and gridded using compass and chain.

Soil sampling was completed on the newly gridded areas with a total of twenty five (25) spot soil samples taken. Where the depth of cover became too deep an auger rig was used to obtain a suitable sample media. In all sixty seven (67) auger based samples were collected. These samples were taken on roughly 25m x 200m centres.

Two rockchip samples were taken from subcropping quartz veins within the relinquished portion of the lease.

No anomalous gold results were recorded from any of the samples submitted for analysis.

Aerial Photography and Digital Elevation Modelling

Airesearch Mapping was contracted to fly 1:25,000 scale colour aerial photography over all Acacia’s Pine Creek tenements during 1996, including SEL 8497. In-house processing of the aerial photography included; scanning, generating a digital copy of the photographs, and integrating the data into Acacia’s GIS database.

Digital Elevation Models (DEM) were created from data acquired from ABAKOS in Brisbane. ABAKOS scanned 1:50,000 topographic maps and vectorised the contours to produce the digital data.
6.4 19th April 1997 to 18th April 1998 (Report No. 08.9604)

**Geochemical Surface Sampling and Gridding**

Additional geochemical sampling in the relinquished portion of SEL8497 required the construction of a baseline and gridding of crosslines for a total of 35.6 line km. The baseline was orientated at 331.5° and marked with dumpy star pickets at 100m intervals between 18400N and 25800N (grid north). Crosslines were gridded on 400m spaced lines with 25m spaced aluminum dumpy pegs.

A total of three hundred and seventeen (317) soil samples were collected in the southern area of the grid before the onset of the wet season. The samples were collected by hand (12 samples) and mechanical auger (305 samples) from the B2/C horizon. If the soil profile was stripped, samples were collected from bedrock. Sample weights of 1.5 to 2kg were collected every 25m along 200m spaced grid lines and sieved to -5mm. The soil samples were dispatched to Assaycorp Laboratories in Pine Creek and analysed for low level Au by Fire Assay and Cu, Pb, Zn and As by AAS.

In all eleven (11) samples returned results > 4ppb Au. The best results returned were adjacent anomalous values of 89 and 97ppb Au. These values form the northern extension of a NW trending 50-100ppb soil anomaly that occurs in the adjacent Elizabeth lease (SEL 7984).
Detailed aeromagnetic and radiometric survey

Universal Tracking Systems (UTS) were contracted to fly a detailed aerial magnetic and radiometric survey over a portion of the Acacia managed tenements in the Pine Creek region, of which the eastern margin of Union Consolidated was included.

The total area covered during the survey was ~ 127 km² for ~ 2540 line km on an orientation of 060°. The flight lines were 50m apart with a mean terrain clearance of 20m. Tie lines were flown at 500m spacing. In-line sampling was specified at 4 - 5 metres or less with a required magnetometer sensitivity of less than 0.001nT and an instrumental noise envelope not exceeding 0.2nT. Navigation was by real time differential GPS to achieve accurate lateral and height positioning. A spectrometer with a detector size of 33 litres was included in the survey equipment but radiometric data was not collected from every site.

Test lines were flown at the start and finish of daily data collection to demonstrate validity and repeatability of Gamma Ray data. Specific regulations were made about calibrating, checking, and correcting the magnetometer, spectrometer, background radiation, and ground elevation throughout the period of data collection. A magnetic ground base station with a resolution of 0.5nT was central to the survey, and synchronised with flying time so as to correct for diurnal variations.

Hungerford Geophysical Consultants was contracted to process the raw data and conduct a revised geophysical interpretation of the Pine Creek area, incorporating both the new detailed survey and the multiclient data sets. Flight line, contour and profile diagrams are included as Figures 5, 6 and 7.
6.5 19th April 1998 to 19th January 1999 (Report No. 08.10038)

**Geochemical Soil Sampling and Gridding**

Crossline infill gridding for a total of ~7 line km was completed in the relinquished portion of SEL8497 during the 1998/1999 reporting period. This gridding was completed in the vicinity of the anomalism (97ppb) detected in the 1997/1998 program discussed above. This infill gridding closed the grid spacing between 20400N and 21200N down to 200m.

Gridding completed in the 1997 field was also resurrected for the purposes of completing the geochemical soil sampling program interrupted at this time by the onset of the wet season.

A total of nine hundred and eighty seven (987) geochemical surface samples were collected during the 1998/1999 field season. The samples, which were collected from the B2/C horizon, were collected by hand (43 samples) or mechanical auger (944). If the soil profile was stripped, samples were collected from bedrock. Sample weights of 1.5 to 2kg were collected every 25m along 400 or 200m spaced grid lines and sieved to -5mm. The soil samples were dispatched to Assaycorp Laboratories in Pine Creek and analysed for low level Au by Fire Assay.

Results from the infill program confirmed the previously defined anomaly, but a field inspection of the area confirmed the anomalous values were sourced from alluvial material. Results from the northern program were disappointing, with a best result of 20ppb Au in the northeast corner of the lease. Most results were less than 5ppb Au. Most of the results from the southern program were also less than 5ppb Au, with isolated peaks of 450, 66, 60 and 55ppb Au.
Regional Geophysical Compilation

In late 1998 Hungerford Geophysical Consultants were contracted to merge and level the multiple aeromagnetic and radiometric data sets that Acacia has acquired to allow easier comparison of the images across the boundaries of the different surveys. The following processing was applied to merge the detailed aeromagnetic and multiclient datasets:

- Regrid all surveys to 15m grid cell size.
- Add 47210nT to the UTS grid (if required)
- Boolean join of the multiclient and UTS grids
- Smooth the merged grid with a 3 x Hanning filter

Revised reduced to the pole and first vertical derivative plots were produced and a revised geophysical compilation utilising recently acquired regional gravity data, multiple detailed and multiclient aeromagnetic data sets and IP surveys acquired between 1992 and 1997, was completed.

7.0 ENVIRONMENTAL ISSUES

All regional and grid-based exploration was conducted in a fashion that restricted environmental disturbance to a minimum. Parts of the current access roads were regraded prior to the commencement of field work. All steel grid pegs have been removed from the relinquished portions of the tenement.

An Environmental Register has been compiled for all previous and current exploration disturbances carried out in the license area and is included as Appendix 4.
8.0 REFERENCES

Giles, D., July 1994: The Shell Company of Australia Ltd. Final Report for McKinlay River South EL7369 (08.7035)

Giles, D., July 1994: The Shell Company of Australia Final Report for Union Reefs West EL7757 (08.7034)

Giles, D., July 1994: The Shell Company of Australia Final Report for McKinlay River West EL7814 (08.7033)

Giles, D., July 1994: The Shell Company of Australia Final Report for Union Reefs South EL7578 (08.7032)

Giles, D., July 1994: The Shell Company of Australia Final Report for Mt McLachlan EL7813 (08.7031)


APPENDIX I

ACACIA GEOLOGICAL LOGGING CODES
## Acacia Exploration

### Geological Logging Codes

<table>
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<th>RETURN (RTN)</th>
<th>TEXTURE Ctd. (TEXT)</th>
<th>REGOLITH (REGO)</th>
<th>ROCKTYPE Ctd. (MAJ, MIN, MIN2)</th>
<th>ALT TYPE (ALTER)</th>
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<td>TR Transported</td>
<td>Metamorphic Ctd.</td>
<td>AB Albite</td>
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<td>WATER (H2O)</td>
<td>CR Cretulated</td>
<td>TL Laterite</td>
<td>QMS Quartz Mica Schist</td>
<td>AD Andalusite</td>
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<tr>
<td></td>
<td>MY Mylonitic</td>
<td>US Upper Saprrolite</td>
<td>QT Quartzite</td>
<td>AM Amphibole</td>
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<tr>
<td></td>
<td>PB Porphyroblastic</td>
<td>RX Redox Front</td>
<td>SC Schist</td>
<td>AT Altered (undiff)</td>
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<tr>
<td></td>
<td>SC Schistose</td>
<td>LS Lower Saprrolite</td>
<td>SL Slate</td>
<td>BI Biotite</td>
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<tr>
<td></td>
<td>SP Spotted</td>
<td>WB Weathered Bedrock</td>
<td>QV Massive Quartz Vein</td>
<td>BL Bleaching (cb-s)</td>
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<td>Limestone</td>
<td>BR Bedrock (fresh)</td>
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<td>CB Carbonate</td>
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<td>TM Tourmaline</td>
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<td>ZE Zeolite</td>
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### Qualifier

- **Qualifer**
- **Strong**
- **Moderate**
- **Weak**

### WEATHER (Weathering) (VTH)

- **EW** Extremely weathered with poor textural preservation
- **HW** Highly weathered with moderate textural preservation
- **MW** Moderately weathered with good textural preservation
- **SW** Slightly weathered with <20% alter
- **FR** Fresh Bedrock

### Grain Size (GN_SZ)

- **FN** Fine - not visible to naked eye
- **MD** Medium - visible to naked eye
- **CS** Coarse - >2mm

### Sedimentary

- **AG** Agglomerate
- **BX** Breccia
- **BIF** Banded Iron Form
- **CG** Conglomerate
- **CH** Chert
- **DD** Dolomite
- **EE** Epichotalic
- **CB** Carbonate
- **GSH** Carbonaceous Shale
- **CSI** Carbonaceous Siltstone
- **GS** Graphitic Shale
- **GW** Greywacke (>15% matrix)
- **HS** Haematitic Shale
- **LM** Limestone
- **SH** Shale
- **SI** Siltstone
- **SS** Sandstone
- **TF** Tuff

### Metamorphic

- **AM** Amphibolite
- **BMS** Biotite Mica Schist
- **GN** Gneiss
- **HF** Hornfels
- **PH** Phyllite
- **GC** Quartz Carboneate
### Logging Notes:

1. Only one logging code to be entered per field (excluding qualifiers and two colours where necessary).
2. No new codes to be entered without notification and approval.
3. No backslashes, commas, hyphens etc. to be used in any field except Comments.
4. Quartz Veining and Mineral content must be expressed as a numeral (not Trace, Tr etc.)
5. Hole Numbers must be entered correctly using the appropriate prefix and four digit number.
6. All geological logs must be validated prior to entry onto Access Dbase.
APPENDIX 2

DISK (ASCII comma delimited format)
APPENDIX 3

ENVIRONMENTAL REGISTAR
TENEMENT ENVIRONMENTAL MANAGEMENT REGISTER
LAND STATUS RECORD

Project: Pine Creek
Tenement Name: Union Consolidated  Loc. Code: UR12
Tenement No’s: SEL 7984
Registered Holder(s): Acacia Resources Limited
Date Granted: 20/4/94  Term: 3 years
Bond/Security: $1,000
JV Partners (if any): Nil
Land Classification: (Crown, Private, Lease) Lease
Land Holder/Occupier: Gary Hamilton
(Equest Pty Ltd)
Address: 9 Pall Mall
Currumbin, Qld, 4223
Phone: (075) 534 7408
Contacted By: Ken Hellston
Date: March 1994
Pastoral Notes: (Stock, Cultivation, Access, Rainfall)
Open grazing land, little evidence of domestic livestock.
Access via the Stuart Highway, the North Australia Railway Easement or any number of unmarked bush tracks.

Environmental Notes: (Flora/Fauna, Erosion, Bushfires, Flooding)
Open Tropical Savanna. Prone to flooding during the wet, access difficult during the wet.

Groundwater: (Bores/Wells/Dams, streams, drainage, test data)
Several water bores are located near the south-eastern corner of the SEL. Water bores are town water supply.
The head waters of the McKinlay River are sourced from the central portion of the license area.

Aboriginal Notes: (Sacred Sites, Cultural)
There are two Sacred sites within the SEL. AAPA site No.s 5270-38 and 5270-22. Both Sites are located in the southern portion of the SEL area. (see attached figure)

Historic Relics: (Mine Workings, Equipment, Homesteads etc.)
Caledonian alluvial Au mine beside the Kakadu Highway, covered by MCN’s on the south eastern boundary of the SEL (see attached figure).
An unnamed Tin working exists in the northern portion of the license area.

Previous Activity: (Mining, Exploration, Forestry, etc.)
License previously covered by numerous exploration companies, no substantial disturbance evident.
TENEMENT ENVIRONMENTAL MANAGEMENT REGISTER
PRE-EXISTING ENVIRONMENTAL DISTURBANCE RECORD

Tenement Name: Union Consolidated  
No(s): SEL7984

Exploration Activity Area:  

Shafts/Pits/Dumps: None evident

Track/Access:  
Tenement can be accessed from western margin by turning east off the Stuart Highway or through the central portion of the license via the North Australia Railway easement.

Access tracks also exist along Power Transmission Lines.

Line Clearing:  
None

Costeaming:  
None

Drill Sites:  
None

Other:

Location Data:  

Other Ref:

Compiled by: Chris Spurway  
Date: 29/4/96
TENEMENT ENVIRONMENTAL MANAGEMENT REGISTER
ACACIA ENVIRONMENTAL IMPACT RECORD

Tenement Name: Union Consolidated

No(s): SEL 7984

Report Ref No's:
08.7521 08.10038
08.7970 08.10572 (this report)
08.8762
08.9604

Exploration Activities:
Hand and mechanical auger sampling, 1396 samples
Rock chip sampling, 2 samples collected.

Grids & Traverses:
Construction of grid baseline marked by star pickets at 100m intervals
Approx 48.2 line km of gridding completed, marked at 50m intervals with metal fence droppers.

Soil Sampling:
1396 mechanical auger to 4.5m or hoe pick samples collected, all sample sites backfilled after sample collection.

Cavetools / Pits:
Nil

Drilling:
Nil

Drill Traverses:
Nil

Drill Pads:
Nil

Ground Geophysics:
Nil

Access Tracks:
Nil

Camps:
Nil

Other:
Nil

Compiled by: Jane Ham

Date: 13th April 1999

Revised by: Penny Large

Date: 12th October 1999
TENEMENT ENVIRONMENTAL MANAGEMENT REGISTER
ACACIA REHABILITATION RECORD

Tenement Name: Union Consolidated

Disturbance: Soil Sampling
Rehabilitation: Backfilling

Grids & Traverses: Grid pegs in the relinquished portions of the tenement removed.

Soil Sampling: Backfilling of all sample sites completed at time of sampling.

Costeans/Pits:

Drilling:

Drill Traverses:

Drill Pads:

Ground Geophysics:

Access Tracks:

Camps:

Other:

Inspected / Clearance: 

Compiled by: Jane Ham

Revised by: Penny Large

Follow-up Inspection Report:

Bond/Security released:

Date: 13th April, 1999

Date: 12th October 1999
SEL 8497
Union Consolidated
Relinquished Area

GEOLOGY
- Mt Bonnie Formation
- Proterozoic dolerite dyke
- Burrell Ck Formation
- McMinns Bluff Granite
- Gerowie Tuff
- Koolpin Formation

LOCALITY MAP

ACAGIA RESOURCES LIMITED

PINE CREEK PROJECT

SEL 8497 - UNION CONSOLIDATED
GEOPHYSICAL INTERPRETATION

ACAGIA RESOURCES LIMITED