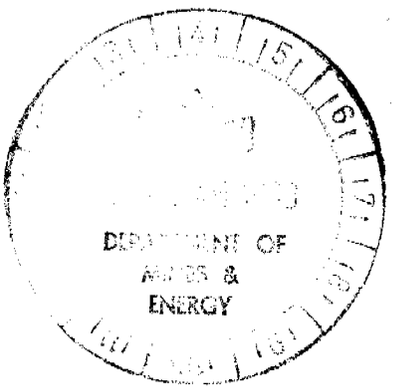

STOCKDALE PROSPECTING LIMITED

EXPLORATION LICENCES 6286-6301

ROPER RIVER AREA, NORTHERN TERRITORY

COMMON REPORT TO 31st JANUARY, 1990

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PROJECT: ROPER RIVER

TITLE: Exploration Licencs 6286-6301,
Roper River Area, Northern Territory
Common Report to 31st January, 1990

AUTHOR: M.H. Podolsky

EDITED/APPROVED: J. Joyce

DATE: January, 1990

PLACE: Darwin, N.T.

KEYWORDS: Northern Territory, Diamond Exploration, Stream Sampling,
Loam Sampling

TEXT: Pages 14 Maps 12 Tables 4

1:250,000 Sheet Name: Urapunga D53-10, Hodgson Downs D53-14, Katherine D53-9,
Mount Marumba D53-6

COPY TO: NTDME, Darwin, IC

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SUMMARY

Exploration Licences:	6286-6301
Date Granted:	1st December, 1988
Area:	24,350 sq km 7,562 blocks
Occupant:	Stockdale Prospecting Limited
Operator:	Stockdale Prospecting Limited
Commodities sought:	Diamonds

Abstract: A programme of reconnaissance, fill-in and follow-up sampling was conducted over Exploration Licences 6286 to 6301 in the Roper River area.

A total of 2,625 stream samples and 76 loam samples were collected over EL's 6291 to 6301, covering an area of 15,714km^2. An overall density of about 1:5.8km^2 was achieved. Results are currently outstanding, and an area of 8,636km^2 over EL's 6286 to 6291 remains to be reconnaissance sampled.

STOCKDALE PROSPECTING LIMITED
EXPLORATION LICENCES 6286-6301
ROPER RIVER AREA, NORTHERN TERRITORY
COMMON REPORT TO 31st JANUARY, 1990

1. INTRODUCTION

Exploration Licences (ELs) 6286-6301 are located over the Urapunga D53-10, Hodgson Downs D53-14, Katherine D53-9 and Mount Marumba D53-6 1:250,000 map sheet areas in the top end of the Northern Territory (Map 1).

This report details all work carried out on the licences during the 1989 field season to the 30th January 1990. EL's 6287 to 6301 were granted on the 1st December, 1988. EL 6286, which falls over private land, was granted on the 10th February, 1989 after security had been lodged with the Northern Territory Department of Mines and Energy (NTDME) in accordance with the requirements of Section 16(3)(b) of the Mining Act. The above sixteen (16) licences are subject to a common annual report date of 31st January after a project classification was granted on 1st September 1989 by the NTDME (Appendix 1). This is the first common annual report for EL's 6286-6301.

During 1989 fieldwork was carried out over the southern and central portions of the licence areas, with reconnaissance stream sampling and selected loam sampling being completed over EL's 6292 to 6301, and the eastern two-thirds of EL 6291. Fieldwork was also carried out over EL's 4483, 4679 and 890 in conjunction with the 1989 programme. No fieldwork was carried out over the remaining licences (EL's 6286 to 6290).

2. TENEMENTS

Currently, EL's 6286-6301 cover an area of 24,350km^2. Table 1 summarizes the relevant areas and granting dates for the licences. A further three ELs are held in the Roper River area by SPL, covering an area of 1195km^2 (EL's 4483, 4679 and 890, Table 1). EL 890 is located in south-east Arnhem Land and held under a joint venture agreement with the Yugul Mangi Exploration Company Pty Ltd.

Five applications (ELA'S 6281 to 6285) were made in August 1988 for ground over the Cox, Beswick and Roper Bar Aboriginal reserves in the name of SPL, covering an area of 5,593km^2. Consent to enter into negotiations with the Northern Land Council was granted by the Northern Territory Minister for Mines and Energy on 5th December, 1988. A consent proposal was submitted in January 1989 (Podolsky, 1989a), the outcome of which is currently awaited.

Three applications (ELA's 6685 to 6887) were lodged by SPL on 27th November 1989 over 113km^2 of ground previously held under EL 4483, which had to be dropped on the 1st October 1989 in accordance with statutory reduction requirements.

In summary, a total of 19 licences covering an area of 25,545km^2 is held in the Roper River area by SPL, with a further 8 licences covering an area of 5,706km^2 under application.

133°
134°
135°
14°
15°
16°

EL 6287
EL 6289
EL 6290
EL 6288
EL 6294
EL 6291
EL 6286
EL 6292
EL 6295
EL 6296
EL 6297
EL 6298
EL 6293
EL 6299
EL 6300
EL 6301

ELA 6281
ELA 6282
ELA 6686
ELA 6687
ELA 6283
ELA 4671
ELA 6285
ELA 6284

EL 890
Yugul Mangi J.V.

EL 4483
EL 4679

BESWICK ABORIGINAL RESERVE
COX RIVER ABORIGINAL RESERVE

MOROAK 5668 1:100 000 MAPSHEET AREA

URAPUNGA D53-10 1:250 000 MAPSHEET AREA

NORTHERN TERRITORY

Mountain Valley
Beswick
Moroak
Roper Bar Police Station
Ngukurr
Hodgson Downs
Nutwood Downs
Larrimah
Mataranka

Wilton R.
Waterhouse R.
Malwok Cr.
ROPER HWY
ROPER RIVER
PORT ROPER
Hodgson R.
Strangways R.
Arnold R.
STUART HWY

N

SPL Pre-existing E.L.

SPL Granted E.L.

ELA's over Aboriginal land

Area excluded from application

Yugul Mangi J.V.

Boundary of Aboriginal Reserve

SPL granted E.L.'s

Area sampled in 1989 covered by this report

Area not sampled in 1989 covered by this report

10 0 10 50km

MAP 1

STOCKDALE PROSPECTING LIMITED

HODGSON DOWNS D53-14/
URAPUNGA D53-10

ROPER RIVER AREA
TENEMENTS

Compiled	MHP/DO
Drawn	MAK
Date	FEB '89
Scale	1:1,000,000
Revised	1/90
	SEL 3381A

TABLE 1: GRANTED EL'S, ROPER RIVER AREA

EL NO	BLOCKS	AREA KM^2	GRANTED	REPORT	COMMITMENT A$
4483	35	113	1/6/84	1/ 7/90*	50000
4679	31	100	25/10/84	1/ 7/90*	20000
6287	500	1610	1/12/88	31/01/90	25000
6288	500	1610	1/12/88	31/01/90	25000
6289	500	1610	1/12/88	31/01/90	25000
6290	500	1610	1/12/88	31/01/90	25000
6291	500	1610	1/12/88	31/01/90	25000
6292	500	1610	1/12/88	31/01/90	25000
6293	500	1610	1/12/88	31/01/90	25000
6294	500	1610	1/12/88	31/01/90	25000
6295	499	1607	1/12/88	31/01/90	25000
6296	500	1610	1/12/88	31/01/90	25000
6297	500	1610	1/12/88	31/01/90	25000
6298	500	1610	1/12/88	31/01/90	25000
6299	177	570	1/12/88	31/01/90	8850
6300	500	1610	1/12/88	31/01/90	25000
6301	386	1243	1/12/88	31/01/90	19300
6286	500	1610	10/2/89	31/01/90	25000
890	349	982	15/5/89	14/ 6/90	50000

* Common Report Date approved.

3. ACCESS

Good first order access is provided by one sealed highway and two prominent gravel roads. The Roper Highway approximately bisects the licence areas and runs east-west, linking Mataranka with Roper Bar and continuing on to Ngukurr and beyond.

A prominent road runs north-east through Maranboy to Mainoru in the north if the licence area, and continues on to Bulman in Arnhem Land. A prominent gravel road runs north-east from Daly Waters to Nutwood Downs Station in the south-west of the licence area, and then north to the Roper Highway past Roper Valley Station. Access in the south-east of the licence area is provided by a gravel road which runs south-east from Roper Bar through St Vidgeon Station, and continues on to Borroloola.

A number of station tracks and others made by previous explorers provide limited dry season access only. Throughout most of the area access for stream sampling is only practical by helicopter.

4. ABORIGINAL LIASON

Prior to commencement of fieldwork information was obtained on the location of sacred sites from the Aboriginal Sites Protection Authority in Darwin.

An arrangement was confirmed between SPL and the Aboriginal Sacred Sites Protection Authority whereby it was agreed that SPL would handle all the liaison with Aboriginal communities in the area using information from previous clearance work and the sacred site location maps (Appendix 2).

Sacred site, sample site and campsite clearance was conducted with the aid of the following representatives of the Traditional Owners:

Hodgson Downs Station. Thomson Roberts, Steven Roberts, Sandy August.

Bringung Outstation. Daylard.

Buddawarka. Roy Kalakundu; Bob Elizabeth and Roy Hampton.

Urapunga Station. Gilbert Jallawirra.

Ngukurr. David and Steven Daniels, Jacob Lancen, Sam Thompson, Jacob Roberts.

5. HABITATION, CLIMATE AND VEGETATION

The area is largely uninhabitated with the exception of small communities of Aboriginal and European station staff at the following stations:

Mountain Valley, Mainoru, Goondooloo, Moroak, Roper Valley, Urapunga and the Ngukurr Community in the north of the licence areas,

Mataranka, Elsey, Hodgson Downs and St Vidgeon over the central portion of the licence areas, and

Maryfield, Hodgson River and Nutwood Downs in the south of the licence areas.

The climate is monsoonal and has distinct wet and dry seasons. Most of the annual rain falls during the wet season, from November to April.

Vegetation varies from grass covered alluvial plains to open and medium-dense eucalypt scrub with sparse grass cover. Pandanus and paperbarks typically line major watercourses.

6. PHYSIOGRAPHY

6.1 Drainage

Most of the licence areas are drained by the Roper River and its tributaries, with the entire area draining into the Gulf of Carpentaria.

Principal drainages comprising the Roper River system within the licence areas are (Map 2):

in the west, the southerly draining West Branch Creek - Waterhouse River system, and the south-easterly draining Chambers River systems;

in the north and north-east, the south-easterly draining Mainoru River - Wilton River system and the Jalboi River;

in the south-west, the north-easterly draining Strangways River system;

and in the south, the northerly draining Hodgson River-Arnold River system.

Principal drainages in the south-east are the north-easterly flowing Towns and Cox Rivers (the Cox is a tributary of the Limmen Bight River).

6.2 Physiography

6.2.1 Regional Setting

The area between the Roper River and the Queensland border has been divided into three broad physiographic units: Barkley-Birdum Tableland, Gulf Fall, and the Coastal Plain (Dunn, Smith and Roberts, unpub.). Portions of all three physiographic units occur within the licence areas (Map 2).

Dunn (1963a) states the present topography has developed by erosion of a post-Cretaceous peneplain which was warped to form a shallow syncline, with the Roper River flowing east along its axis. Areas of Cretaceous tableland are remnants of the old peneplain, capped by a thin veneer of Lower Cretaceous strata lateritized in the early Tertiary (Randal, 1963). The secondary drainage and lower reaches of the main tributaries are largely controlled by the structure and lithology of underlying formations.

A small portion of the Daly River Basin physiographic division occurs in the extreme west of the licence areas, draining east into the Roper River system (Map 2).

6.2.2 Barkly - Birdum Tableland

Part of the north-eastern margin of the Barkly-Birdum Tableland occurs in the south-west of the licence areas, and in the south-east over part of the Cox River Aboriginal Freehold area (Map 2).

The Tableland is poorly drained and mainly formed of Cretaceous sediments (which are capped with duricrust and are a remnant of the early Tertiary land surface), and Tertiary sediments (Dunn, 1963b). The margins of the Tableland are locally defined by 30m high scarps, and scarp-retreat is active in the headwaters of the upper tributaries of the Hodgson River and north of Maryfield Creek. Elsewhere, the margins are bevelled through erosion by streams developed on downwarped surfaces of the Tableland (Dunn, 1963b).

6.2.3 Gulf Fall

The Gulf Fall is the predominant division covered by the licence areas, and comprises the area from which nearly all the early Tertiary land surface has been eroded (Dunn, 1963b). The Gulf Fall consists mainly of Middle Proterozoic sediments of the McArthur Basin that have been variably eroded to a mature surface generally lower than the post-Cretaceous peneplain (Dunn, 1963a). Several physiographic subdivisions have been recognized, they being mainly areas of variably dissected plateaus and tablelands.

The topography has been controlled by differential erosion of Middle Proterozoic strata, and structure. It is featured by broad, flat-floored valleys formed on incomperent sediments, and by long hogback and cuesta form ridges and hills being formed of more competent sandstones. Many prominent hills are formed along strike ridges or are developed adjacent to faults.

Of note is the Hells Gate Ridge which is a prominent north-west trending strike ridge running across the central and eastern parts of the licence areas (Map 2). Only the Roper and Hodgson Rivers cut through the ridge. A local base level of erosion appears to have formed above the ridge whilst superimposed drainages were downcutting through it (Dunn, 1963a).

6.2.4 Gulf Fall Division Tableland and Plateau Areas

The Cretaceous Tableland occurs in the north and west of the licence areas, and numerous mesas elsewhere are remnants of the old peneplain. The Tableland surface has an elevation of about 200m above sea level in the north, with some of the mesas near the Roper River now being only 70 to 100m above sea level (Map 2). The surface of the Tableland is formed of porous sediments having indistinct drainage development (Dunn, 1963a).

The Cretaceous Tableland appears to merge with the Lindsay Tableland in the north of the licence areas, and with the Arnhem Land Plateau in the west. Part of the south-eastern edge of the Arnhem

135°00'

135°00'

14°00'

16°00'

WILTON PLATEAU

WILTON R.

FLYING FOX R.

JALBOI R.

HELLS GATE RIDGE

ROPER R.

MAINOX CK

ROPER RIVER

WEST BRANCH CK

WATER HOUSE R.

CHAMBERS R.

ROPER R.

STRANGWAYS R.

HODGSON R.

ARNOLD R.

TOWNS R.

COX R.

Mataranka

Larrimah

TN

AREA COVERED

NORTHERN TERRITORY

LOCATION PLAN

LEGEND

BARKLY-BIRDUM TABLELAND

COASTAL PLAIN

DALY RIVER BASIN

GULF FALL

DISSECTED TABLELAND

NUTWOOD DOWNS BASIN

GULF FALL

COX RIVER PLATEAU

WILTON RIVER PLATEAU

LINDSAY TABLELAND

CRETACEOUS TABLELAND

ARNHEM LAND PLATEAU

10km 0 10 20 30 40 50km

MAP 2

STOCKDALE PROSPECTING LIMITED

NORTHERN TERRITORY
ROPER RIVER D53

PHYSIOGRAPHY OF ROPER RIVER AREA LICENCE & APPLICATION AREAS

(After Dunn 1963 a & b, Randal 1963, Roberts & Plumb 1965)

Compiled	MHP
Drawn	BAN
Date	JAN.'89
Scale	1:1000000
Revised	
	SEL 3754

Land Plateau occurs across the northern half of the Beswick Aboriginal Reserve. The Lindsay Tableland is a mostly flat, soil covered elevated area largely underlain by flat-lying Lower Cretaceous strata and laterite (Roberts and Plumb 1965). The Arnhem Land Plateau is typically covered by lateritized lower Cretaceous strata deposited upon Middle Proterozoic arenaceous sediments and volcanic rocks (Randal, 1963).

The Dissected Tableland occurs in the south-east of the licence areas, and is mostly occupied by the Arnold River drainage basin. It is an area of Tableland which has been bevelled down exposing Proterozoic rocks, but still includes many low, scattered mesas of Lower Cretaceous rocks (Dunn, 1963b).

The Nutwood Downs Basin is the drainage basin of the upper Hodgson River, and is elevated about 50m above the level of the lower reaches of the Hodgson River. It is formed on Cambrian sediments and volcanics bounded by scarps of Lower Cretaceous rocks on the three sides, and drains through a narrow sandstone gorge (Dunn, 1963b).

A small area of the Cox River Plateau occurs in the south-eastern corner of the licence areas, over part of the Cox River Aboriginal Freehold. The Plateau is an elevated area of Cambrian sandstone which is covered by detrital sand near the Barkly-Birdum Tableland (Dunn, 1963b).

The Wilton River Plateau occurs in the north of the licence areas, and is a mature, dissected plateau of flat-lying fine-grained Middle Proterozoic sandstone locally capped by strongly jointed medium-grained sandstone (Dunn, 1963a) (Map 2). The Wilton River and its tributaries cross the Plateau in well developed valleys upto about 1.5km wide. Scarps upto 30m high locally define the margins of the Plateau, which typically grade into the rounded hills and shallow dip slopes of the dissected Gulf Fall (Dunn, 1963a).

6.2.5 Coastal Plain

The Coastal Plain occupies an area in the extreme east of the licences (Map 2). The Coastal Plain forms a major unit of physiography to the east, and is formed of sand and laterite plains. Dunn (1963a) states the area represents portions of the post-Cretaceous peneplain which has been down-warped to a level protecting it from erosion.

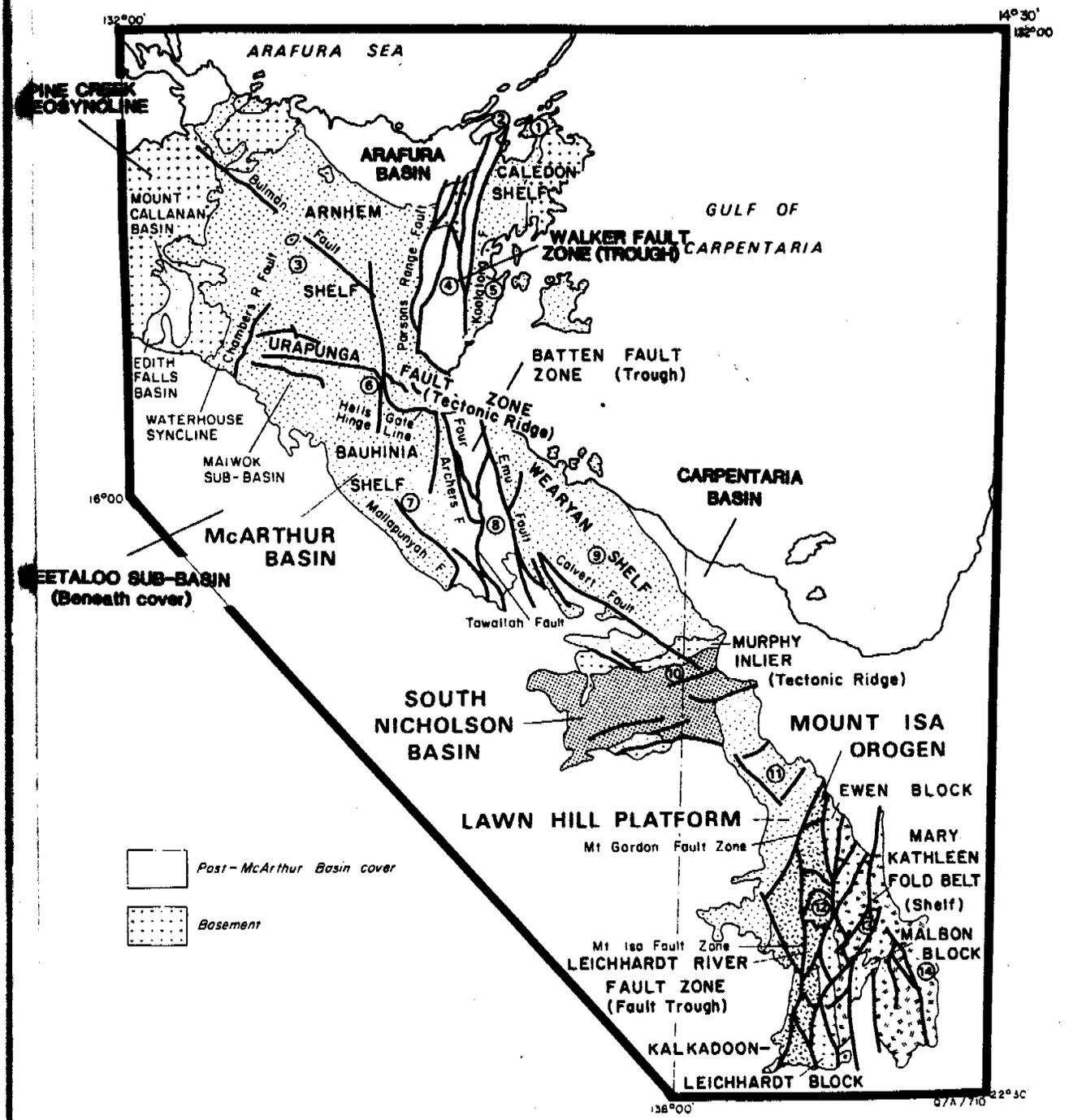
7. GEOLOGY

7.1 Regional Tectonic Setting

The EL's lie almost wholly within the central south-western part of the McArthur Basin. The McArthur Basin was a large, complex depositional basin which extends from Arnhem Land in the north-west to south-east beyond the Queensland border, covering an area of about 200,000 km^2. Plumb et al, 1981). Bedrock is represented by c.1700 to 1300 Ma (Middle Proterozoic or Carpentarian, Plumb 1988) platform cover sediments which are the principal element of the North Australian Platform Cover (Plumb et al, 1981).

The McArthur Basin lies near the eastern edge of the North Australian Craton adjacent to the Mt Isa Orogen, which was a penecontemporaneous continental margin belt (Plumb et al, 1981). The basin is bounded by and unconformably overlies the Early Proterozoic Pine Creek, Arnhem and Murphy Inliers. In the north, south, and east, the limits of the basin are masked by unconformably overlying covers of the Palaeozoic Arafura, Georgina, and Daly River Basins, and the Mesozoic Carpentaria Basin, respectively (Plumb et al, 1981).

The EL's occur over several tectonic elements recognized within the McArthur Basin: in the south of the Arnhem Land Shelf and the north-west of the Bauhinia Shelf, the Urapunga Fault Zone, the south-east of the Waterhouse Syncline, and the Maiwok Sub-Basin (Plumb et al, 1981) (Map 3). Regionally, the palaeogeography of the basin was dominated by the northerly-trending Batten Trough-Walker Trough which is a palaeotectonic feature, controlled by syndepositional faults, in which up to 12km of shallow water sediments accumulated, compared to 1.5-4.0km on the stable Arnhem, Bauhinia, Caledon, and Wearyan Shelves, either side. A very thin succession accumulated



Principal tectonic elements, McArthur Basin—Mount Isa Orogen. (After Plumb et al., 1980; with permission of Geological Society of Australia, Queensland Division).

STOCKDALE PROSPECTING LIMITED	
NORTHERN TERRITORY PRINCIPAL TECTONIC ELEMENTS, McARTHUR BASIN MT. ISA OROGEN. FROM PLUMB et.al.(1981)	Compiled MHP Drawn BAN Date OCT. '89 Scale Revised SEL 3717

on the Urapunga Tectonic Ridge. The Batten Trough - Walker Trough and Urapunga Tectonic Ridge were then deformed into the Batten, Walker and Urapunga Fault Zone tectonic features. Large vertical uplifts reversed the Batten and Walker Troughs into horst-like features, with basement rocks locally exposed within. Deformation of the stable shelves is very mild in comparison (Plumb et al, 1981).

7.2 Stratigraphy

The stratigraphy of the McArthur Basin is summarized in Fig. 1. The following summary covers the area of the licences.

7.2.1 Proterozoic Rocks

7.2.1.1 Early to Middke Proterozoic: Transitional Domain Volcanism, Roper River Granite and ?Mt Reid Beds

A porphyritic microgranite and coarse granite is exposed along with sandstone and underlying acid volcanics of the Mt Reid Beds along the Urapunga Tectonic Ridge, about 2km north of Roper Bar (Plumb, 1988). The granite is referred to as the Roper River Granite (name not yet approved). The Roper River Granite is tentatively correlated with the 1850Ma Edith River Group which occurs in the Mount Callanan and Edith Falls Basins located to the north and east of Katherine (Plumb, 1988) (Map 3).

7.2.1.2 Middle Proterozoic (Carpentarian): McArthur Basin Succession Platform Cover

7.2.1.2.1 Tawallah Group

Tawallah Group sediments (and equivalents elsewhere) were deposited on the Bauhinia Shelf. An undivided sequence of quartz sandstone, conglomerate, subordinate siltstone, shale and dolostone are described by Plumb (1988). Locally thickened sections were deposited in marginal depressions as in the Waterhouse Syncline (Plumb et al, 1981).

7.2.1.2.2 Katherine River Group and McArthur Group (Vizard Formation)

An unconformity separates the Vizard Formation which forms part of the McArthur Group and the stratigraphically equivalent Katherine River Group, with the Tawallah Group.

The Katherine River Group crops out over a large part of the Arnhem Shelf. Basal sediments are represented by locally pebbly quartz sandstone of the Kombolgie Formation, which is overlain by undivided dolomitic siltstone sandstone and dolostone, quartz and feldspathic sandstones of the Katherine River Group.

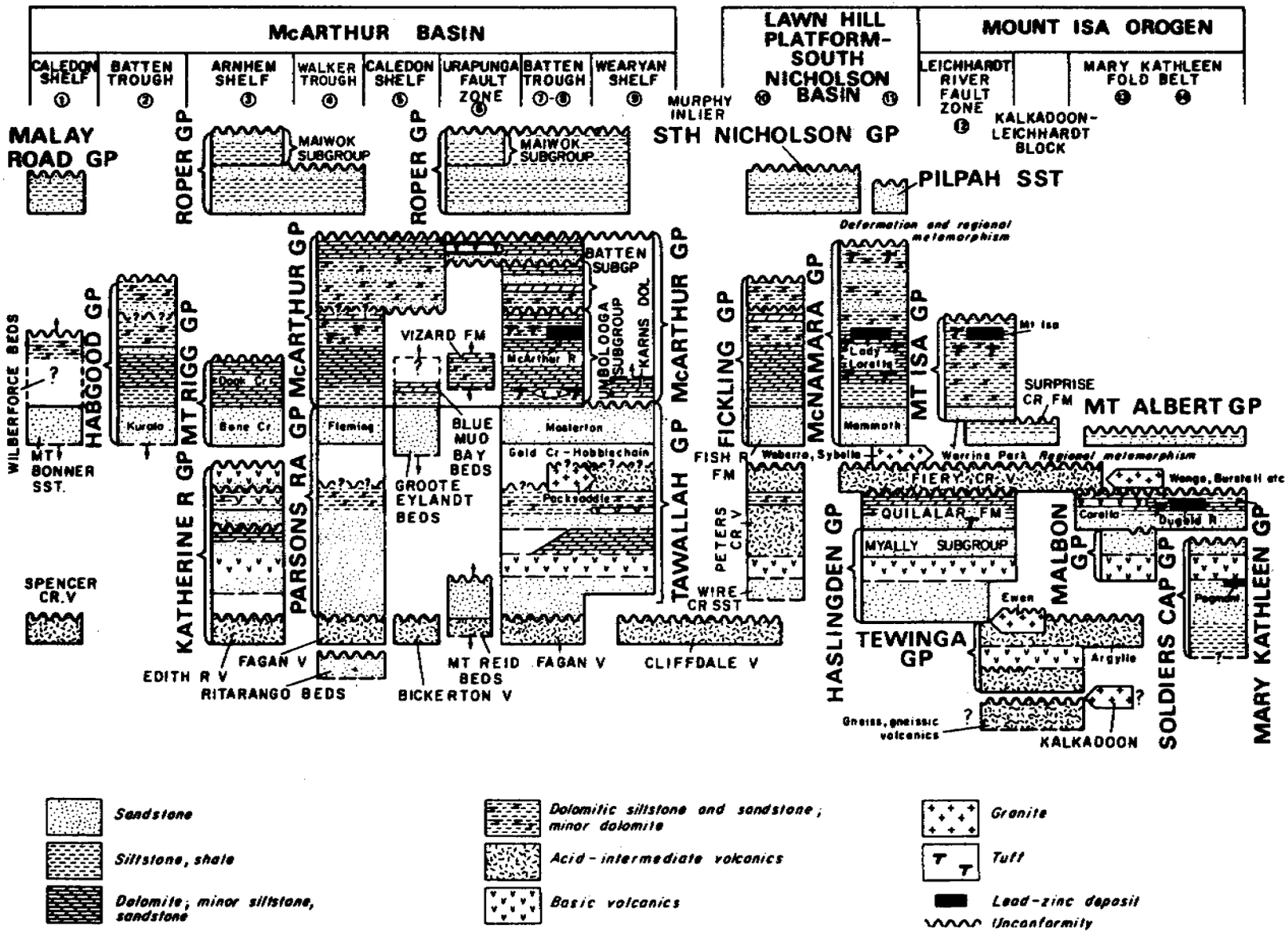
The West Branch Volcanics unconformably overlie Kombolgie Formation sediments in the Beswick Aboriginal Reserve Area, and are at the stratigraphic top of the Katherine River Group (Plumb, 1988). The volcanics are comprised of tuffaceous sandstones and amygdaloidal basalt.

Dolostone, dolomitic siltstone and quartz sandstone of the Vizard Formation occur along the Urapunga Tectonic Ridge south of Ngukurr.

7.2.1.2.3 Mt Rigg and Nathan Groups

The Mt Rigg and Nathan Groups are stratigraphically equivalent and unconformably overlie the Katherine River Group and Vizard Formation, respectively. The Mt Rigg Group is represented by dolostone, sandstone, siltstone, commonly cherty, and quartz sandstone, and crops out in the central and south-western Arnhem Shelf area.

The Nathan Group occurs south-east of Roper Bar over the Urapunga Tectonic Ridge. Sediments are comprised of an undivided sequence of cyclic dolostone, dolarenite, sandstone and siltstone (Plumb, 1988). The Yalwarra Volcanic Member is intercalated amongst the Nathan Formation, and is comprised of basic to intermediate volcanics and feldspathic sandstone.



Inferred time relationship of principal rock units, McArthur Basin to Mount Isa Orogen. (After Plumb et al), 1981

STOCKDALE PROSPECTING LIMITED

INFERRED TIME RELATIONSHIP OF PRINCIPAL ROCK UNITS, McARTHUR BASIN TO MT. ISA OROGEN. FROM PLUMB et.al.(1981)

NORTHERN TERRITORY
D59-10 MOROAK
PACKSADDLE CREEK

Compiled	MHP
Drawn	BAN
Date	OCT. '89
Scale	N.T.S
Revised	DEC.'89
SEL	3718

Fig 1.

7.2.1.2.4 Roper Group

Roper Group sediments were deposited with regional unconformity across the McArthur Basin, with the thickest sequence being deposited on top of the Bauhinia Shelf (Plumb et al, 1981). Hinge zones existed at the Hells Gate Hinge Line in the north, and the Emu Fault in the east (Plumb et al, 1981). Lithologies comprise an undivided series of quartz sandstones alternating with micaceous and glauconitic sandstone, siltstone and shale (Plumb, 1988).

Sediments of the Maiwok Sub-Group, which contain uppermost sequences of the Roper Group, were deposited in the Maiwok sub-basin which was formed by warping and faulting (Dunn, 1963a) (Map 3).

7.2.1.2.5 Dolerite Sills

Following deposition of the Roper Group, sills of tholeiitic dolerite were emplaced about 1300Ma (Plumb, 1988) into the western part of the McArthur Basin, before the basin was deformed (Plumb et al, 1981).

7.2.2 Palaeozoic: Cambrian Sediments and Volcanics

Uplift and erosion of Proterozoic sediments was followed by deposition of the Bukalara Sandstone of the Georgina Basin in the south-west of the licence area. The Bukalara Sandstone is a sandstone, siltstone and shale sequence.

Massive and amygdaloidal basalts of the Nutwood Downs Volcanics were then extruded on the Bukulara Sandstone on the south-west of the licence area. The Nutwood Downs volcanics are equivalent to the Antrim Plateau Volcanics of the Daly River Basin to the west.

Carbonate deposition followed, and is represented by the Daly River Group of the Daly River Basin in the extreme west of the licence area.

Of note is the Strangways Cryptoexplosion structure (name not yet approved) tentatively placed in the Cambrian by Plumb (1988), occurring in the west of the licence area. The structure has about a 10km wide core of granite gneiss with exposures of breccia, commonly highly shocked, or melt rock, and is surrounded by a 5km wide collar of severely fractured, upturned or overturned Roper Group sediments (Ferguson et al, 1978). The latter have suggested the structure may be the result of a violently cryptoexplosive event involving a volatile enriched alkaline ultramafic magma.

7.2.3 Mesozoic: Lower Cretaceous, Mullaman Beds

No sedimentation is evident betweem Cambrian and Lower Cretaceous times. The Cretaceous sediments in the area are known as the Mullaman Beds and belong to a sequence which covers a large part of the northern half of the Northern Territory with initially terrerestrial and then later shallow marine epicontinental sediments being deposited. The bulk of the sequence is comprised of marine sediments (Dunn, 1963b). Siltstone, claystone, sandstone, and porcellanite (formed by silicification of some of the finer grained sediments during early Tertiary times), have been described (Dunn 1963a and b).

The Cretaceous sediments form a variably eroded, essentially flat-lying cover over older rocks across the southern portion of the licence areas, with scattered remnants occurring in the north.

7.2.4 Cainozoic Cover

Large parts of the licence areas are covered by sand, laterite, soil, rubble, local patches of travertine and fresh water limestone, and alluvium.

The laterite, which commonly underlies the sand, is a remnant of an early Tertiary land surface developed after emergence of the Cretaceous sediments. Downwarping after laterization then occurred, with the present day drainage dominated by the Roper River developing on the warped sur-

face.

7.3 Structure of the McArthur Basin

According to Plumb et al (1981), deformation of the McArthur Basin has been largely in response to complex block faulting, especially along the Batten Fault Zone and to a lesser extent the Urapunga Fault Zone. Deformation of the adjoining shelves is mild in comparison.

Strikeslip movements along major pre-existing basement faults of continental proportions controlled the structural development of the McArthur Basin. The Batten Fault Zone overlies a major zone of weakness and dominated most of the basin's structure. The Urapunga Fault Zone is situated over a basement ridge which resisted the north-south horizontal movements of the surrounding blocks, resulting in the westerly trending reverse faulting.

8. PREVIOUS INVESTIGATIONS

8.1 General

The first systematic mapping of the area was carried out by the Bureau of Mineral Resources in 1958-1959, after which the URAPUNGA D53-10 1:250,000 map sheet was produced (Dunn, 1963a). Adjoining 1:250,000 map sheet areas were subsequently mapped: HODGSON DOWNS D53-14 (Dunn, 1963b), KATHERINE D53-9 (Randal, 1963) and MOUNT MARUMBA D53-6 (Roberts and Plumb, 1965).

Openfile literature research at the NTDME shows that the area has been prospected for iron, copper, lead, zinc and minor nickel mineralization. Uranium, manganese, bauxite, vanadium, silica sand and oil have also been explored for.

8.2 Diamonds

8.2.1 Ashton

A programme of reconnaissance stream sampling was completed to a density of 1:10km^2 to 1:15km^2 by Ashton during 1982 to 1984 over most of the licence area currently held by SPL. An area of 21,434km^2 was covered by Ashton.

The collected sample size was 25-30kg of -4mm material. Numerous non-kimberlitic chromites were recovered by this work, but no kimberlitic indicator minerals or micro-diamonds were reported.

8.2.2 CRAE

A programme of reconnaissance stream sampling was completed to a density of 1:20km^2 by CRAE during 1985 to 1986 over the southern portion of the HODGSON DOWNS D53-14 1:250,000 sheet area. This work was carried out in conjunction with that over EL's held on the TANUMBIRINI E 53-2 1:250,000 sheet area and other EL's to the east and south-east.

The collected sample size was 20kg of -2mm material. Two microdiamonds and one picroilmenite were recovered from two western tributaries of the Arnold River. A third microdiamond occurred in a headwater tributary of Maryfield Creek to the west, and a further seven microdiamonds were recovered from the Cox River system to the east over part of the Cox River Aboriginal Freehold area. It is noteworthy that Ashton's work in the same area failed to produce similar results, but follow-up by CRAE did not repeat their original positives.

Chromites were reported from a number of samples collected in the west of the HODGSON DOWNS D53-14 1:250,000 sheet area from the Strangways River and tributaries, the Hodgson River, and tributaries, and the Cox River system in the east. It is probable that these grains derive from the Cambrian Nutwood Downs Volcanics.

8.2.3 SPL

8.2.3.1 1970-1971 Fieldwork

Regional reconnaissance stream and barrage sampling over the URAPUNGA D53-10 and HODGSON DOWNS D53-14 1:250,000 sheet areas was carried out to a density of about 1:45km^2.

Stream sample size was 10kg -4.75mm material with barrage samples ranging upto 300kg -4.75mm material. The collected material was concentrated by hand jigging of -1.70/0.85/0.60mm fractions, and panning of -0.60mm fraction material. Concentrates were examined in South Africa. One kimberlitic garnet was recovered from the north-eastern corner of the HODGSON DOWNS D53-14 sheet area from a tributary to the Towns River.

8.2.3.2 1984 Fieldwork

Delineation of structural targets considered favourable for kimberlite and lamproite emplacement led to aquisition of 18 EL's in the Roper River area in mid-late 1984.

A first wave broad-spaced reconnaissance sampling programme was completed to a density of 1:165km^2 with the aim of detecting a kimberlite or lamproite province. The collected sample size was 70ltr of -1.7/0.3mm material. Three significant results were obtained:

a diamond from the Hodgson River north of Hodgson River Station,

a second diamond from a tributary to the Hodgson River west of Hodgson Downs Station, and

a kimberlitic garnet from Packsaddle Creek.

8.2.3.3 1985 Fieldwork

During 1985 a bulk sampling (Steelmaster) programme took place which tested the two diamond and garnet positives. No grains of interest were recovered from the two diamond locations, but the anomalous nature of the Packsaddle Creek area was confirmed.

All EL's which did not contain any grains of interest were relinquished in 1985. The decision to withdraw the EL's was made largely on non-geological grounds. A total of six EL's covering an area of 8060km^2 was retained by March 1986.

8.2.3.4 1986 Fieldwork

During 1986 sampling was carried out over the retained portion of the target area and another target delineated in the south of the licences in three phases.

Infill stream and barrage sampling of the retained EL's was carried out to an overall density of about 1:30km^2, and loam sampling of poorly drained areas in the south-west to about 1:6km^2. Two significant results were obtained. A kimberlitic garnet was recovered in the south of the licence area from Anderson Creek, and a chromite of interest was recovered immediately south-east of the Packsaddle Creek area.

Stream sampling to a density of 1:10km^2 and loam sampling to a density of 1:0.5km^2 was completed in the Packsaddle Creek area. Anomalous drainages containing kimberlitic garnets and chromite were delineated.

Follow-up to the above positive stream samples to a density of 1:0.4km^2 comprised the third and final phase of sampling in 1986. Further positive grains were recovered.

By March 1987 portions of three EL's having a combined area of 2298km^2 was retained.

8.2.3.5 1987 Fieldwork

Selected infill, follow-up and check sampling was carried in the retained licence areas, with most of the fieldwork being concentrated in the Packsaddle Creek area.

Further follow-up in the Packsaddle Creek area increased the stream sampling density to 1:0.25km^2, with a number of stream and barrage samples proving positive with kimberlitic garnets and chromites. A helicopter magnetic survey was flown over the area of interest which generated four subtle targets. Ground magnetometer follow-up surveys were inconclusive and two of the helimag responses proved to be of cultural origin. However, two kimberlitic garnets were recovered from check loam and hand-auger sampling over one of the helimag responses.

By January 1988 portions of two EL's having a combined area of 849km^2 was retained by SPL in the Roper River area.

8.2.3.6 1988 Fieldwork

All fieldwork was focussed on the Packsaddle Creek area in 1988. Further ground magnetometer, loam, and stream sample surveys were conducted and this work is detailed in Podolsky (1989). The most important results were produced from grid loam sampling, which delineated a highly anomalous area containing abundant kimberlitic garnets, numerous chromites, and one diamond.

9. 1989 FIELDWORK

9.1 Methodology

A programme of regional reconnaissance and follow-up sampling was carried out over EL's 6292 to 6301 and the eastern two thirds of EL 6291, covering the southern and central portions of the licences. No fieldwork was carried out over EL's 6286 to 6290 in the north during 1989.

The sampling method adopted was to excavate 100ltr of stream sediment at each sample location, hand-screened on-site to -1mm or -1/0.3mm (-4.75mm if material was damp). If 20ltr of -1mm or -1/0.3mm material was collected before 100ltr of stream sediment was excavated, no further material was excavated and collected. A sample density as near to 1:5km^2 as possible was aimed for.

Closer-interval stream sampling at a density of about 1:1km^2 was used in follow-up to anomalies generated by previous SPL and opposition work. Sampling methodology was as above. Limited check sampling of features selected from enhanced Thematic Mapper imagery was carried out by stream or loam sampling.

9.2 Sampling

A summary of the sampling completed in the Roper River area over the relevant licences is shown in Table 2.

Sampling was conducted over the URAPUNGA D53-10 and HODGSON DOWNS D53-14 1:250,000 sheet areas, including the following nine 1:100,000 map sheets:

Throsby 5769	(Map 4)
Moroak 5668	(Map 5)
Chapman 5768	(Map 6)
Urapunga 5868	(Map 7)
Mais 5667	(Map 8)
Hodgson 5767	(Map 9)
St Vidgeon 5867	(Map 10)
Maryfield 5666	(Map 11)
Nutwood 5766	(Map 12)

TABLE 2: 1989 SAMPLING SUMMARY EL's 6286-6301, ROPER RIVER AREA

EL	AREA SAMPLED KM^2	1:100,000 SHEET	NO. RECCE STREAM SAMPLES	NO. RECCE LOAM SAMPLES	NO. FILL-IN & FOLLOW-UP SAMPLES	KM^2 RECCE DENSITY	KM^2 OVERALL DENSITY
6291	1024*	Moroak 5668	185	--	--	1:5.5	--
6292	1610	Moroak 5668 Mais 5667	224	2	235	1:7.1	1:3.5
6293	1610	Mais 5667	250	12	42	1:6.1	1:5.3
6294	1610	Chapman 5768 Throsby 5769	218	1	--	1:7.3	--
6295	1607	Chapman 5768	212	3	--	1:7.5	--
6296	1610	Hodgson 5767 Chapman 5768	291	3	--	1:5.5	--
6297	1610	5767, 5867, 5768, 5868	209	4	--	1:7.6	--
6298	1610	St Vidgeon 5867 Urapunga 5868	151	29	--	1:8.7	--
6299	570	St Vidgeon 5867	73	3	--	1:7.5	--
6300	1610	5666, 5766, 5667	295	2	15	1:5.4	1:5.2
6301	1243	Nutwood 5766	205	17	16	1:5.6	1:5.2
11	15714	9	2313	76	312	1:6.7	1:58

* Area EL 6291 = $1610km^2$

Note: EL's 6286 - 6290 not sampled

A grand total of 2,625 stream samples and 76 loam samples were collected over EL's 6291 to 6301, covering an area of 15,714km^2. An overall density of about 1:5.8km^2 was achieved. Statistics for respective EL's are provided in Table 2, and sample numbers are shown on Maps 4 to 12.

9.3 Treatment and Examination

The collected material was bagged on-site and despatched to SPL's Darwin Treatment Plant where treatment is currently on-going. Concentrates are forwarded to SPL's Melbourne Laboratory for further treatment, and examination for diamonds and kimberlitic indicator minerals.

9.4 Results

Results are currently outstanding as the samples are being treated and processed at this time. All results for 1989 fieldwork will be reported in the next Common Report due in 1991.

10. PERSONNEL

Two field teams were utilized continually from the beginning of March to the end of October, with a third field team being utilized from late August to the end of October. Each field team consisted of:

1-2 Geologists
3-4 Field Hands
1 Cook
1 Pilot
1 Engineer

11. EXPENDITURE

11.1 Current Expenditure to Common Report Date

Expenditure for the period 1st December 1988 to the Common Report date of 31st January 1990 has been allocated as shown in Table 2, and totals $1,246,280.

11.2 Proposed Expenditure for 1990

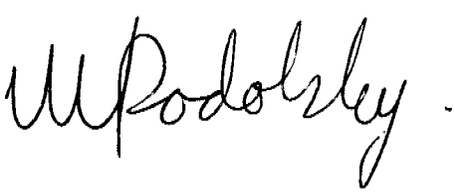
Proposed Expenditure for 1990 is based upon the assumption that two sampling teams will be employed to prospect the tenement area. This includes reconnaissance sampling of the areas not sampled in 1989 over EL's 6286 to 6301, and follow-up and in-fill sampling in the remaining licence areas. It is expected that about $1,500,000 will be expended, and has been allocated as shown in Table 3.

TABLE 3: EL's 6286-6301 PROJECT EXPENDITURE FOR PERIOD 01/12/1988 TO 01/01/1990

EL NO.	6286	6287	6288	6289	6290	6291	6292	6293	6294	6295	6296	6297	6298	6299	6300	6301	TOTAL
Operational Staff Costs	0	0	0	0	0	20479	57480	42354	25599	25133	32580	23737	21875	8843	8610	34674	301365
General Operational Expenses	0	0	0	0	0	2088	5861	4319	2610	2563	3322	2420	2231	902	878	3536	30729
Transport and Travel	0	0	0	0	0	4973	11487	8331	5529	5428	7422	5428	4645	1792	2020	3383	60439
Air Charter	0	0	0	0	0	29571	70095	51476	38333	36691	42167	41071	30667	14786	9857	33952	398667
Tenement Costs	855	2508	2166	2827	2290	2758	2758	2735	2108	2108	2108	2108	2108	2108	2108	2108	35760
Mobile Jig Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central Treatment Plant	0	0	0	0	0	6794	15691	11380	7552	7414	10139	7414	6345	2448	2759	4621	82557
Lab Treatment	0	0	0	0	0	1152	2661	1930	1281	1257	1719	1257	1076	415	468	784	14000
Lab Examination	0	0	0	0	0	3288	7593	5507	3655	3588	4906	3588	3071	1185	1335	2236	39952
Contractors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Remote Sensing	168	493	426	556	450	542	542	538	415	415	415	415	415	415	415	415	7033
Geophysics	78	229	198	258	209	252	252	250	193	193	193	193	193	193	193	193	3266
Drafting	15	44	38	49	40	48	48	47	37	37	37	37	37	37	37	37	621
Research	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Regional Administration	135	397	343	447	363	7361	18009	13344	9072	8799	10700	9143	7538	3525	2924	9494	101594
Head Office Administration	164	482	417	544	441	8946	21884	16215	11025	10692	13002	11111	9160	4284	3554	11537	123457
Capital Utilisation	62	183	158	206	167	3394	8303	6152	4183	4057	4933	4216	3475	1625	1348	4377	46840
TOTAL	1478	4336	3746	4887	3960	91646	222664	164578	111590	108373	133642	112138	92835	42558	36505	111345	1246280

TABLE 4: EL's 6286-6301 PROPOSED EXPENDITURE FOR 1990

EL NO's	RECCE 6286-6291	FILL-IN & FOLLOW-UP 6286-6301	TOTAL
Operational Staff Costs	244,000	122,000	366,000
General Operational Expenses	24,000	12,000	36,000
Transport and Travel	48,000	24,000	72,000
Air Charter	324,000	161,000	485,000
Tenement Costs	24,000	12,000	36,000
Central Treatment Plant	66,000	33,000	99,000
Laboratory: Treatment	11,000	5,000	16,000
Laboratory: Examination	32,000	16,000	48,000
Remote Sensing	5,000	3,000	8,000
Geophysics	2,000	1,000	3,000
Drafting	500	500	1,000
Regional Administration	81,000	41,000	122,000
Head Office Administration	101,000	51,000	152,000
Capital Utilization	37,000	19,000	56,000
TOTAL EXPENDITURE	1,000,000	500,000	1,500,000



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APPENDIX 1

NTDME PROJECT CLASSIFICATION,
ROPER RIVER EL's 6286-6301

Department of Mines and Energy

CENTREPOINT TOWERS BUILDING, THE MALL, DARWIN N.T. 0800
G.P.O. BOX 2901, DARWIN, N.T. 0801, AUSTRALIA
TELEPHONE: (089) 89 5511 TELEX: AA85766 MINDAR FACSIMILE: (089) 81 4806

PROMOTING GROWTH THROUGH RESOURCES

NORTHERN TERRITORY GEOLOGICAL SURVEY

IN REPLY
PLEASE QUOTE EL 6286-6301

Martin,

Project status for Roper River

IG

Mr I J Gordon
Titles Officer
Stockdale Prospecting Ltd
60 Wilson Street
SOUTH YARRA VIC 3141

Dear Mr Gordon

EXPLORATION LICENCES 6286 - 6301 ROPER RIVER

I refer to your letter of 18 August 1989 requesting project status for this group of Exploration Licences.

A review has been carried out and I am pleased to advise that the above licences have been given a project classification.

The conditions applying to the project area will be as follows:-

- Project anniversary date of 31 December.
- Common reporting date of 31 January, report on project area as a single entity, subject to the prompt submission of detailed relinquishment reports covering work completed on areas surrendered.
- Expenditure on project area as a whole to be the measure of covenant compliance.
- Expenditures to be predicted and covenants determined on individual EL basis; actual costs estimated pro rata; with work completed and reported on individual EL basis; but project performance to be assessed primarily on the basis of summation of individual EL's.
- Reduction in area to be on a project basis and deferment to be granted in respect of particular EL's where compensating relinquishments in excess of obligations are proposed from other EL's within the project area.

lm.153:244

- Individual EL's to be considered in isolation in terms of their total life to expiry.

It is possible that contiguous EL's granted to the company in the future might be incorporated into a project area, however each application would be considered separately and on its own merits.

We look forward to a year of successful exploration.

Yours sincerely

01/09/89

C A MULDER
Acting Director

lm.153:244

APPENDIX 2

SPL - SSPA ABORIGINAL LIAISON

AGREEMENT, ROPER RIVER AREA

STOCKDALE PROSPECTING LIMITED
MEMORANDUM

To: JJ, MHP, DGC

From: GMM

Subject: ABORIGINAL LIAISON - ROPER RIVER

Date: 29th MARCH, 1989

Index: Yes No

Project:
Map Sheet No(s) 1:250,000:

On 15/3/89 I visited the SSPA to discuss clearance work for the Roper River project. Bob Ellis introduced me to Mike Southen, an anthropologist who is currently doing a clearance survey for an oil company near Nutwood Downs.

I explained to Southen that SPL had previously sampled the area and all Aboriginal Communities had been visited then and it is our intention to contact them again prior to the commencement of further work.

It was agreed that we would do the liaison and clearance ourselves, however, should any problems occur we would contact him for assistance. I also suggested that he should visit the field camp when he is in the area to familiarise himself with the people and the operation. MHP should therefore contact him in Darwin and make an arrangement to meet him at the camp.

G.M. MARTIN
ABORIGINAL LIAISON OFFICER

GMM-051.MEM

STOCKDALE
PROSPECTING
LIMITED
Incorporated in the State of Victoria

Registered Office:
60 Wilson Street
South Yarra Victoria 3141
Australia

5 Searcy Street,
Darwin NT 5790
Australia
Telephone (089) 81 1644
Fax (089) 81 5572

29th April, 1989

The Director
Aboriginal Sacred Sites Protection Authority
PO Box 1890
DARWIN NT 0801

Dear sir,

I wish to confirm an arrangement made between Glen Martin and your Anthropologist, Mike Southen, on 15/3/89 regarding Aboriginal liaison in the Roper River area.

It was agreed that Stockdale will handle all the liaison with Aboriginal communities in the area using information from previous clearance work and the sacred site location maps. However, should any problems arise or are forseen we will call on Mike for assistance.

In the meantime our District Geologist, Martin Podolsky, will contact Mike and advise him of the location of our field camp so that when he is in the area he can visit the camp to familiarise himself with our people and type of operation.

Thank you for your continued co-operation.

Yours faithfully,

J. JOYCE
SENIOR DIVISIONAL GEOLOGIST
DARWIN, N.T.

GMM-046.LET

Melb. Sample Map

1:100 000

053 J

AUSTRALIA 1:100 000
TOPOGRAPHIC SURVEY

THROSBY

REFER TO THIS MAP AS SHEET 5769 (EDITION 1)
NATIONAL MAP SERIES

MOUNTAIN VALLEY HOMESTEAD 39 km

BULMAN 50 km

E.L.A. 6287

E.L.A. 6289

E.L.A. 6290

E.L.A. 6294

ROPER VALLEY HOMESTEAD 28 km

Oct '83
T6121
T6123, 24
T6131 - 36
T6152
T6181 - 82
T6184 - 90
T6196 - 97
(Total 20)
8987 D J
JULY/AUGUST '87

Barrage
BC 1056
BC 1059
BC 1071
BC 1129
Stream
BC0888 - 91, 96 & 97
BC0899 - 0900
BC 1001 - 1008
BC 1049 - 1050, 55
BC 1057 - 58 & 60
BC 1070, 1072 - 1085
BC 1096 - 97
BC 1102 - 04
BC 1130 - 34
BC 1136 - 37
(Total 64)

OCTOBER 1989 (AKB)
BD0202 - 0221
BD0229 - 0235
BD0256 - 0260
BD0265 - 0271
BD0313 - 0325
BD0333 - 0338
BD0355 - 0357
BD0360
BD0368 - 0370
BD0374 - 0381
(Total 71)

PRODUCED by the Division of National Mapping under the direction of the Minister for Minerals and Energy, as part of the national mapping programme, from material supplied by the Royal Australian Survey Corps.
PRINTED by authority of the Minister for Minerals and Energy, 1973
DISTRIBUTED by the Department of Minerals and Energy
MAP ACCURACY: The average accuracy of this map is ±25 metres in the horizontal position of well defined detail and ±10 metres in elevation
MAP RELIABILITY: Topographic information shown on this map is correct to 1971
ROAD CLASSIFICATION: Roads are classified according to their intended function as part of the national road system

GRID REFERENCE

TO GIVE A UNIQUE REFERENCE ON THIS SHEET TO NEAREST 100 METRES

IGNORE the SMALLER figures of any grid number. These are for finding the full co-ordinates. Use ONLY the LARGER figures of the grid number, e.g. 193[00]

SAMPLE POINT 167

1 Quote this 1:100 000 map sheet	5769			
2 Locate first VERTICAL grid line to LEFT of point and read LARGE figures labelling the line either in the top or bottom margin, or on the line itself		28		
3 Estimate tenths from grid line to point			7	
4 Locate first HORIZONTAL grid line BELOW point and read LARGE figures labelling the line either the left or right margin, or on the line itself				20
5 Estimate tenths from grid line to point				4
SAMPLE REFERENCE	5769	28	7	20 4

 PRINTED by the Commonwealth Government Printer

SCALE 1:100 000

Kilometres 2 1 0 2 4 6 8 10 12 Kilometres

BLACK NUMBERED GRID LINES ARE 1 000 METRE INTERVALS OF THE AUSTRALIAN MAP GRID ZONE 53
GRID VALUES ARE SHOWN IN FULL ONLY AT THE SOUTH WEST CORNER OF THE MAP
HORIZONTAL DATUM: AUSTRALIAN GEODETIC DATUM 1966
VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
TRANSVERSE MERCATOR PROJECTION
CONTOUR INTERVAL 20 METRES
ELEVATIONS IN METRES

- Built-up area; National route marker
- Principal road and highway; Cutting
- Secondary road; Embankment
- Minor road; Road bridge
- Vehicular track
- Gate; Cattle grid
- Railway, multiple track; Station; Railway bridge
- Railway, single track; Railway tunnel
- Light railway or tramway
- Power transmission line
- Fence, Levee or bank
- Mine; Windmill, Yard, Quarry
- Buildings; Church, Ruin, Drive-in theatre
- Trig station, Bench mark, Spot elevation (△ BM 306, 220)
- Cliff; Contour with value; Depression contour
- Forest, dense, medium, scattered
- Scrub, dense, medium; scattered
- Tropical rainforest; Pine plantation
- Orchard, plantation or vineyard; Mangrove
- Windbreak
- Lake, perennial; Stream, perennial
- Lake, intermittent; Stream, intermittent
- Lake, mainly dry; Stream, mainly dry
- Swamp, perennial; intermittent
- Land subject to inundation; Rice field
- Bore or well; Spring; Tank or small dam
- Breakwater; Pier; Wharf
- Wreck, exposed; Lighthouse
- Rock, bare or awash; Foreshore flat; Sand
- Reef; Rock ledge

GRID CONVERGENCE 0.2°
GRID/MAGNETIC ANGLE 4.1°

TRUE NORTH, GRID NORTH AND MAGNETIC NORTH ARE SHOWN DIAGRAMMATICALLY FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1973 AND MOVES BY LESS THAN 0.1° IN TEN YEARS

INDEX TO ADJOINING MAPS

MAINORU 5670	MARUMBA 5770	WYMBILLI 5870
FLYING FOX 5669	THROSBY 5769	BEROA 5869
MORGAN 5668	CHAPMAN 5768	URAPUNGA 5868

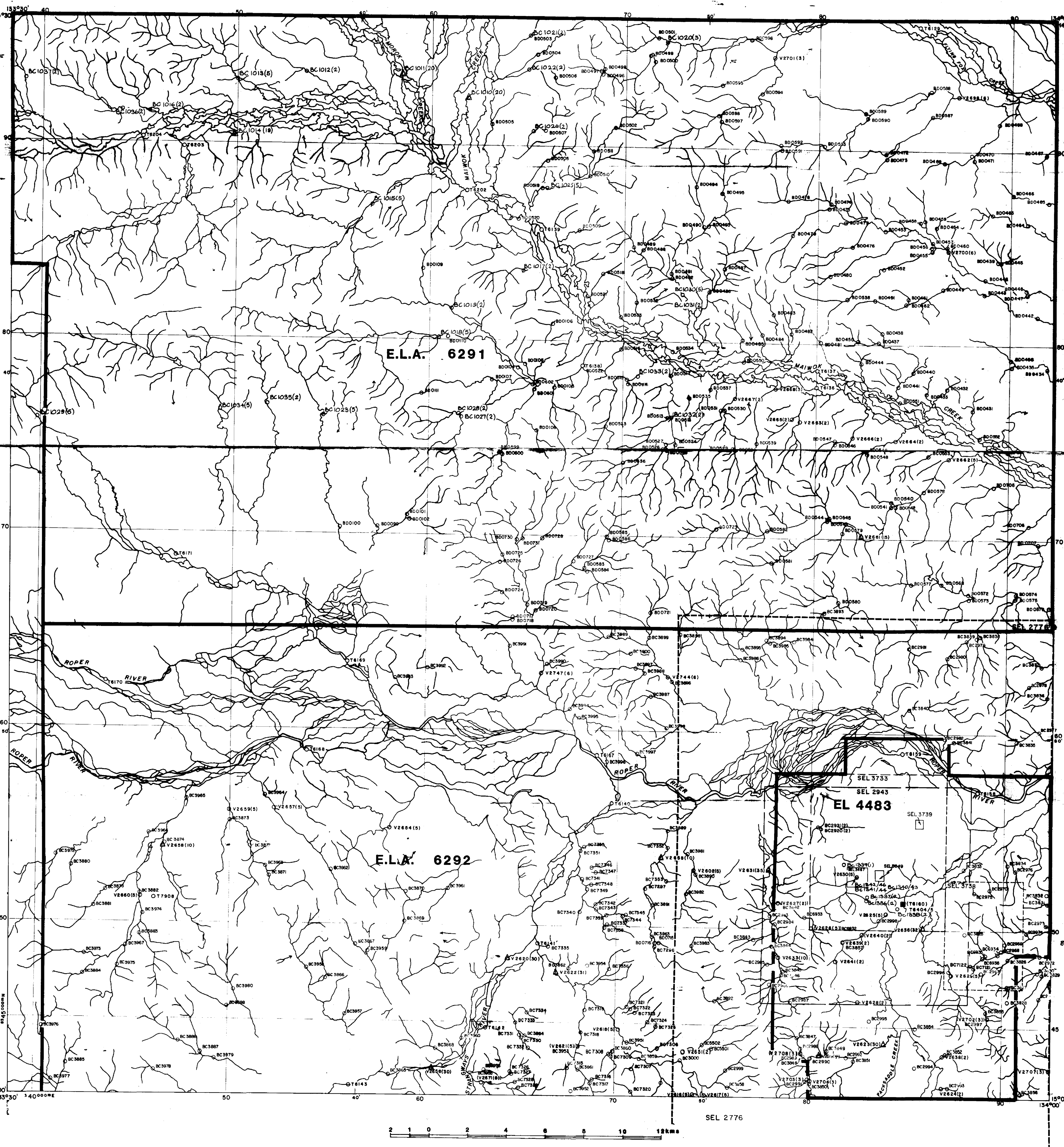
THROSBY
SHEET 5769
NORTHERN TERRITORY
EDITION 1

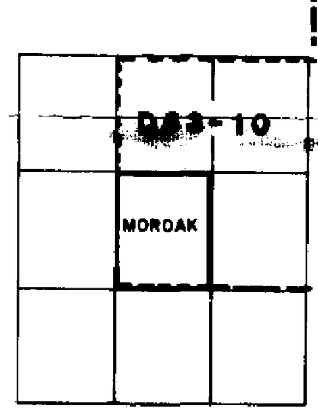
NMP/73/012

CURRENT SAMPLING TO OCTOBER 1989

CR90/060

MAP4





<u>MAY '83</u>
T7908
(TOTAL 1)

<u>OCTOBER '83</u>
T6129
T6136 - 43
T6158 - 60
T6167 - 71
T6202 - 04
(TOTAL 20)

<u>JULY '85</u>
T6404 - 05
(Steelmaster)
(TOTAL 2)

<u>MAY '86</u>
V2602
V2616 - 18
V2621, 24-30, 33
V2638-41, 51, 54
V2657, 59-60
V2662-68, 71
barrage
V2619-20
V2622-23
V2631, 36
V2655 - 56
V2658, 61
(Total 40)

<u>JUNE '86</u>
V2698
V2700 - 04
V2707 - 08
V2744, 47
(Total 10)

<u>JULY / AUGUST '87</u>
Barrage
BC 1010 & 11 ✓
BC 1014 ✓
Stream
BC 1012 - 23 ✓
BC 1025 - 37 ✓
(Total 28)

<u>October 1987</u> M.S.M.
Stream
BC 1336 - 38 (3)
Loam
BC 1339 - 42 (2)
Auger Holes
BC 1343 - 45 (3)
(Total 10)

<u>APRIL / MAY 1989</u> AKB
Loam
BC2967
BC2994 - 95
BC3825
BC3828
BC3832
BC3854
BC3952
BC3954
Stream
BC2968 - 93
BC2996 - 3000
BC3826 - 27
BC3829 - 31
BC3833 - 52
BC3855 - 75
BC3880 - 3900
BC3951
BC3953
BC3955 - 67
BC3972 - 98
BC5501 - 02
(Total 142)

<u>JULY 1989</u> AKB
Stream
BC6932 - 36
(Total 5)

<u>SEPT. - OCT. '89</u>
Stream
BC7121 - 7122
Total 2

BC7296, 97
BC7306 - 09
BC7315 - 53
BD0100 - 11
BD0431 - 0553
BD0568
BD0581 - 98
BD0572 - 79
BD0600 - 02
BD0705 - 07
BD0715 - 21
BD0723 - 31
(Total 240)

CR90/060

STOCKDALE PROSPECTING LIMITED

URAPUNGA D53-10

MOROAK CURRENT SAMPLING AS AT

E.L.A. 6294

E.L.A. 6295

E.L.A. 6283

E.L.A. 6296

E.L.A. 6297

SCALE 1:100,000

D53-10

CHAP-MAN

SEPT '71
E 4901
(Total 1)

OCT '83
T6116 - 20
T6122
T6125 - 28
T6153 - 57
T7969
T7978 - 79
T7986 - 90
(Total 23)

JUNE '86 (L-P-S)
V2689 - 93
V2695 -97, 99
barrage
V2694
(Total 10)
D.F. 10 9 87

JULY/AUGUST '87
Barrage
BC 1094 ✓
BC 1111 & 12 ✓
BC 1185 ✓
Stream
BC 1095 ✓
BC 1098 - 1101 ✓
BC 1105 - 10 ✓
BC 1113 - 18 ✓
BC 1123 & 24 ✓
BC 1140 - 42 ✓
BC 1165 - 66 ✓
BC 1168 ✓
BC 1173 - 80 ✓
BC 1182 - 84 ✓
BC 1186 - 87 ✓
BC 1197 - 1200
BC 1302 - 05 ✓
(Total 50)

SEPT.-OCT. 1989 (AKB/hmr)
Stream
BC7557 - 7600
BC7643 - 7651
BC7653 - 7669
BC7672 - 7710
BC7712 - 7773
BC7801 - 7848
BC7850 - 7855
BC7857 - 7861
BC9532 - 9534
BD0098
BD0222 - 0228
BD0236 - 0257
BD0261 - 0264
BD0272 - 0274
BD0276 - 0277
BD0279 - 0286
BD0326 - 0332
BD0339 - 0354
BD0359
BD0361 - 0367
BD0371 - 0373
BD0382 - 0400
Loam
BC7652 (1)
BC7671 (1)
BC7711 (1)
BC7856 (1)
BD0275 (1)
BD0278 (1)
Total 338

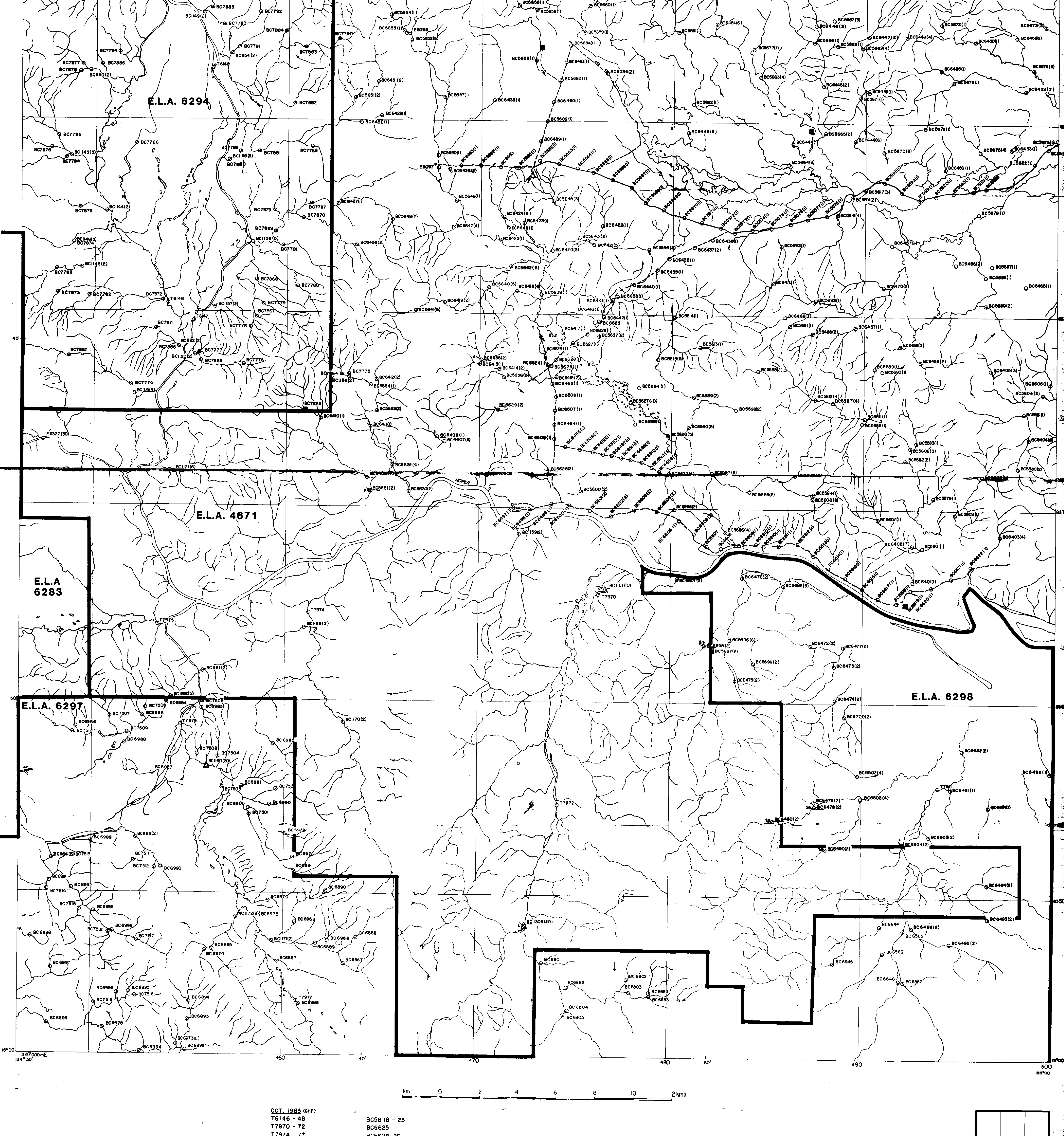
OCT. 1989
Stream samples
BD0732 - 0737
Total 6

CR90/060

STOCKDALE PROSPECTING LIMITED
URAPUNGA DS5-10

CHAPMAN
CURRENT SAMPLING
AS AT OCTOBER 1989

Compiled
Drawn
Date
Scale
Revised
SEL



OCT. 1983 (GHF)
T6146 - 48
T7970 - 72
T7974 - 77
(Total 10)

JULY / AUGUST 1987
Barrage
BC1151
BC1160
Stream
BC1119 - 22
BC1143 - 46
BC1149, 50
BC1154 - 59
BC1161 - 64
BC1169 - 72
(Total 26)

OCT. 1987
Barrage
BC1308
(Total 1)

MAY / JUNE 1989 (AKB/MHP)
Stream
BC5579 - 91
BC5596 - 98
BC5600 - 17
BC5624
BC5626, 27
BC5630 - 79
BC5681
BC5689 - 93
BC5695 - 5700
BC6402 - 16
BC6418 - 34
BC6441, 42
BC6443 - 47
BC6449, 50
BC6452
BC6454 - 58
BC6464
BC6466 - 71
BC6473 - 82
BC6490 - 96
BC6501 - 05
BC6625
Loam
BC5562 - 78
BC5592 - 95
BC5599

BC5618 - 23
BC5625
BC5628, 29
BC5680
BC5682 - 88
BC5694
BC6401
BC6417
BC6436 - 40
BC6448
BC6451
BC6453
BC6459 - 63
BC6465
BC6472
BC6483 - 89
BC6497 - 6500
BC6506 - 13
BC6601 - 24
BC6626 - 29
(Total 280)

JULY / AUGUST '89 AKB
Stream
BC6565 - 67
BC6644 - 46
BC6682 - 84
BC6801 - 05, BC6886 - 95
BC6899 - 6900
BC6967
BC6969 - 71
BC6974 - 75
BC6978 - 99
BC7501 - 19
Loam
BC6968
BC6973
(Total 65)

OCTOBER '89 (AKB)
Stream
BC7774 - 7785
BC7787 - 7795
BC7862 - 7886
Loam
BC7786
Total 47

CR89/0660

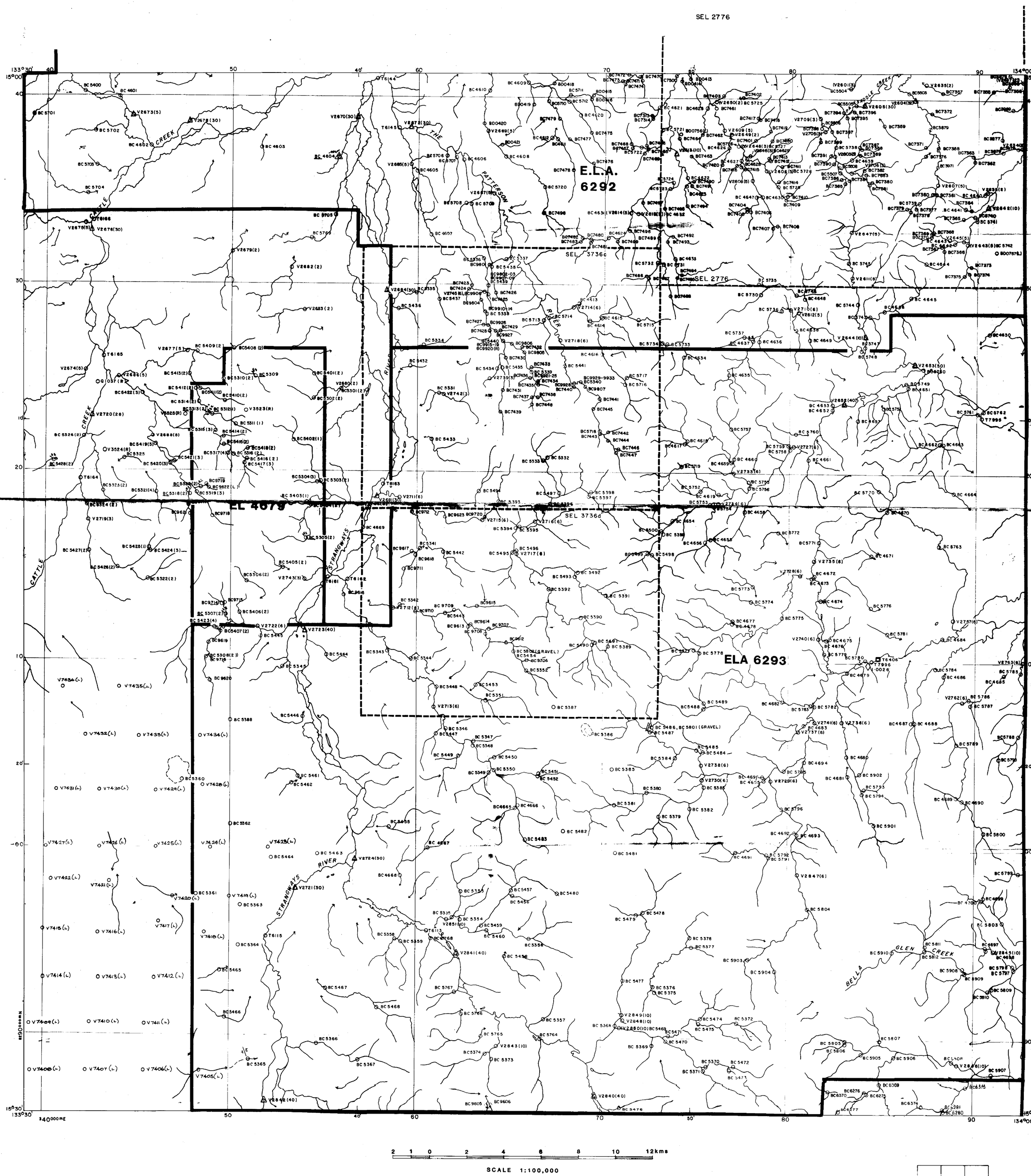
STOCKDALE PROSPECTING LIMITED

NORHTERN TERRITORY
D53-10 URAPUNGA

CURRENT SAMPLING
TO OCTOBER 1989

MAP7

Compiled	
Drawn	
Date	
Scale	1:100000
Revised	
SEL	



APRIL '83
Q1037 (R)
(Total 1)

OCT '83
T6113,15
T6144 - 45
T6161 - 66
T7995 - 96
(Total 12)

JULY '85
steelmaster:
T6406
(Total 1)

MAY '86
stream:
V2601, 03
V2606-09
V2611-12
V2614-15
V2632
V2634-35
V2637, 43
V2645-50
V2669, 73, 75
barrage:
V2604-05
V2613, 42, 44
V2652-53
V2670, 72
(Total 33)

JUNE '86
V2674, 77
V2679-80
V2682-83
V2685-88
V2705-06
V2709-19
V2722
V2727-30
V2733-43
V2745-46
barrage:
V2676, 78
V2681, 84
V2720-21
V2723-24
(Total 49)

JULY '86
V2757
V2762-63
rock
V3523-25
(Total 6)

AUGUST '86
V2843
V2845-51
barrage:
V2840-42
(Total 11)

Sept '86 LPS
Loam
V7405-7436
(Total 32)

APRIL/MAY 1989 AKB
Stream
BC3876-79
BC3968-71
BC5503-08
(Total 14)

MAY 1989 MHP
Stream
Bc5301-26
Bc5401-28
(Total 54)

MAY/JUNE 1989 TWS/DVH
Stream
BC5331-59
BC5361
BC5365-5384
BC5389-5400
BC5432-62
BC5465-80
BC5483-5600
BC4601-4700
BC5701-5800
BC5803-5812
BC5901-5910
Loam
BC5301, 60
BC5362-64
BC5385-88
BC5463-64
BC5481-82
Gravel
BC5801-02
(Total 362)

SEPT. 1989 TWS, DVH
Stream
BC6275-77
BC6280-81
BC6369-70
BC6374-75
BC9605-06
BC9612-22
BC9623
BC9706-20
(Total 38)

SEPT '89 (PDW/WRH/hmr)
Stream
BC7313-7314
BC7355-7391
BC7394-7420
BC7423-7446
BC7461-7500
BD0413-0416
BD0418-0421
Loam
BD0756-0757
Total 142

OCT '89 (TWS/DVH/hmr)
Stream
BC9801-9807
BC9906-9933
Total 35

MAIS
D53-14

CR90/060

MAPS

STOCKDALE PROSPECTING LIMITED	
HODGSON DOWNS D53-14	Compiled
	Drawn
	Date
	Scale
	Revised
	SEL

MAIS CURRENT SAMPLING AS AT OCTOBER 1989

E.L.A. 6296

E.L.A. 6297

HODGSON RIVER

BLACKWATER CREEK

BELLA BELLA CREEK

CROCODILE CREEK

MASON GORGE CREEK

ARNOLD RIVER

SCALE 1:100,000

2 1 0 2 4 6 8 10 12kms

HODGSON

D53-14

OCT '83
T7980 - 83
T7985
T7991 - 94
T7997 - 8000
T6101 - 05
(Total 18)

JULY '85
steelmaster
T6407
(Total 1)

MAY '86
barrage
V2610
(Total 1)

JUNE '86
V2725 - 26
V2731 - 32
(Total 4)

JULY '86
barrage
V2748 - 50
V2765 - 67
stream
V2751 - 56
V2759 - 61
V2768 - 79
V2781 - 82
(Total 29)

AUGUST '86
V2833
(Total 1)

October 1987 M.S.M.
Bc 1309 - 1324
(Total 16)

AUGUST 1989 AKB
Stream
BC7000
BC7520 - 56
BC7601 - 04
BC7606 - 32
BC7637 - 42
(Total 75)

AUG - SEPT 89 TWS, DVH
Stream
BC5982
BC6054 - 6100
BC6169 - 6260
BC6301 - 09
BC6310 - 52
BC6358 - 68
Loam
BC6309
(Total 203)

OCT '89 TWS, DVH
Stream
BC9808 - 20
BC9934 - 44
(Total 24)

OCT '89 (PDW/WRH/hmr)
Stream
BD0082 - 0097
BD0738 - 0754
Total 33

CR90/060

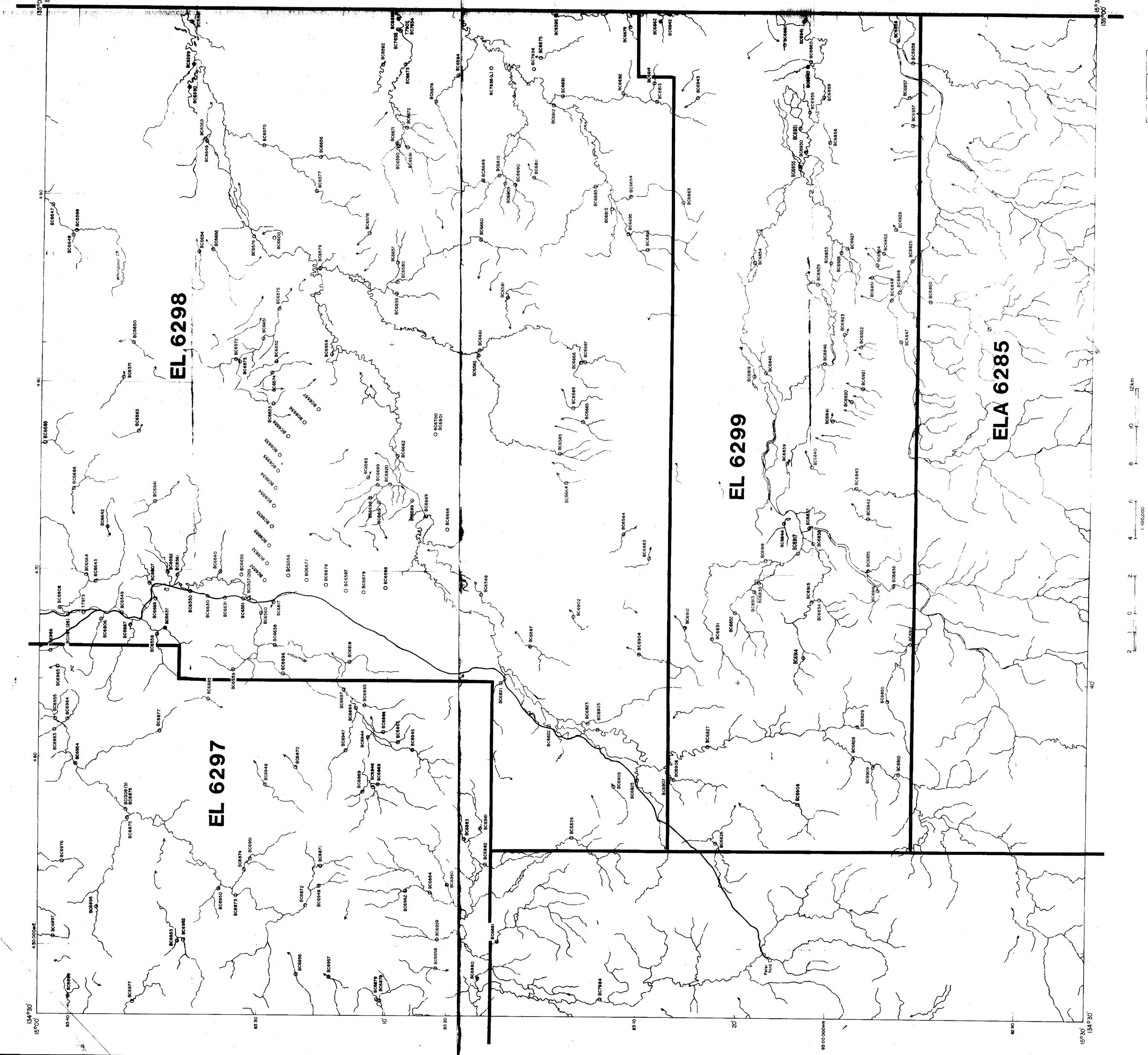
MAP 9

STOCKDALE PROSPECTING LIMITED

HODGSON DOWNS D53-14

HODGSON
CURRENT SAMPLING
AS AT OCTOBER, 1989

Compiled
Drawn
Date
Scale
Revised
SEL



July - August 1989 (AKB)

Stream	Rock
BC6549	BC6700
BC6550 - 6557	Total 1
BC6558 - 6564	
BC6568 - 6595	
BC6600	
BC6599	
BC6630 - 6636	
BC6637 - 6643	
BC6666	
BC6668	
BC6647 - 6665	
BC6667	
BC6677 - 6679	
BC6669	
BC6686	
BC6671 - 6676	
BC6817	
BC6680 - 6681	
BC6861	
BC6685 - 6695	
BC6863	
BC6697 - 6699	
BC6901	
BC6806 - 6816	
BC6940	
BC6818 - 6860	
BC6958	
BC6865 - 6885	
BC7635	
BC6864 - 6885	
Total 32	
BC6896 - 6898	
BC6902 - 6931	
BC6937 - 6939	
BC6941 - 6957	
BC6959 - 6966	
BC6976 - 6977	
BC7633 - 7634	
BC7636	
Total 230	

May 1983
T79077
Total 1

October 1983
T7973
T7984
Total 2

August 1987
Barrage
BC11167
Total 1

October 1987
Barrage
BC11307
Total 1

Stream sample
BC1306
Total 1

CR90/060

MAP10

STOCKDALE PROSPECTING LIMITED

NORTHERN TERRITORY

D53-14 - HODGSON DOWNS

ST. VIDGEON 1:100,000

CURRENT SAMPLING
AS AT AUGUST 1989

Compiled	
Drawn	
Date	
Scale	1:100 000
Revised	
	SEL

[redacted]

Melb Sample Map.

1:100·000

DS3-14

AUSTRALIA 1 100 000
TOPOGRAPHIC SURVEY

MARYFIELD

REFER TO THIS MAP AS SHEET 5666 (EDITION 1)
NATIONAL TOPOGRAPHIC MAP SERIES

E.L.A. 6300

Oct '83 (CHF)
T6112, 14
(Total 2)

July '86
V2795
V2805
V2811
(Total 3)

JULY 1989 (TWS/DVH/)
Stream
BC5887
BC5888
Total 2

SEPT - OCT '89 (TWS)
Stream
BC6261
BC6278 - 6279
BC6282 - 6289
BC6291 - 6300
BC6371 - 6373
BC6376 - 6400
BC9601 - 9604
BC9607 - 9611
BC9624 - 9673
BC9675 - 9678
BC9684 - 9686, 88
BC9689 - 9705
BC9721 - 9776
BC9778 - 9784
BC9786 - 9800
BC9901 - 9905
Total 217

Rock
BC9674
Total 1

Loam
BC9679 - 9680
BC9682 - 9683
BC9777
Total 5

HUTWOOD DOWNS HS 53 SE

DALY WATERS 58 km

SCALE 1 : 100 000

Kilometres 2 1 0 2 4 6 8 10 12 Kilometres

BLACK NUMBERED GRID LINES ARE 1 000 METRE INTERVALS OF THE AUSTRALIAN MAP GRID ZONE 53
GRID VALUES ARE SHOWN IN FULL ONLY AT THE SOUTH WEST CORNER OF THE MAP
HORIZONTAL DATUM AUSTRALIAN GEODETIC DATUM 1966
VERTICAL DATUM AUSTRALIAN HEIGHT DATUM
TRANSVERSE MERCATOR PROJECTION
CONTOUR INTERVAL 20 METRES
ELEVATIONS IN METRES

PRODUCED by the Division of National Mapping under the direction of the Minister for Minerals and Energy as part of the national mapping programme
PRINTED by authority of the Minister for Minerals and Energy, 1975
DISTRIBUTED by the Department of Minerals and Energy
MAP ACCURACY The average accuracy of this map is ±25 metres in the horizontal position of well defined detail and ±5 metres in elevation
MAP RELIABILITY Topographic information shown on this map is correct to 1973
ROAD CLASSIFICATION Roads are classified according to their intended function as part of the national road system

GRID REFERENCE
TO GIVE A UNIQUE REFERENCE ON THIS SHEET TO NEAREST 100 METRES
IGNORE the SMALLER figures of any grid number, these are for finding the full co-ordinates. Use ONLY the LARGER figures of the grid number e.g. 340000
SAMPLE POINT *Pipe Creek Bore 1*
1 Quote this 1 100 000 map sheet — 5666
2 Locate first VERTICAL grid line to LEFT of point and read LARGE figures labelling the line either at the top or bottom margin, or on the line itself — 85
3 Estimate tenths from grid line to point — 1
4 Locate first HORIZONTAL grid line BELOW point and read LARGE figures labelling the line on either the left or right margin, or on the line itself — 58
5 Estimate tenths from grid line to point — 5
SAMPLE REFERENCE — 5666 851585

Built up area. National route marker
Principal road and highway. Cutting
Secondary road. Embankment
Minor road. Road bridge
Vehicular track
Gate. Cattle grid
Railway, multiple track. Station. Railway bridge
Railway, single track. Railway tunnel
Light railway or tramway
Power transmission line
Fence. Levee or bank
Mine. Windmill. Yard. Quarry
Building/s. Church. Ruin. Drive in theatre
Trig station. Bench mark. Spot elevation
Cliff. Contour with value. Depression contour
Forest, dense, medium, scattered
Scrub, dense, medium, scattered
Tropical rainforest. Pine plantation
Orchard, plantation or vineyard. Mangrove
Windbreak
Lake, perennial. Stream, perennial
Lake, intermittent. Stream, intermittent
Lake, mainly dry. Stream, mainly dry
Swamp, perennial, intermittent
Land subject to inundation. Rice field
Bore or well. Spring. Tank or small dam
Breakwater. Pier. Wharf
Wreck, exposed. Lighthouse
Rock, bare or awash. Foreshore flat. Sand
Reef. Rock ledge

GN TN MN
GRID CONVERGENCE - 3.1°
GRID MAGNETIC ANGLE 4.0°
TRUE NORTH, GRID NORTH AND MAGNETIC NORTH ARE SHOWN DIAGRAMMATICALLY FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1974 AND MOVES WESTERLY BY 0.1° IN ABOUT SIX YEARS

NMP/72/214

INDEX TO ADJOINING MAPS

GORRIE 5567	MAUS 5667	HODGSON 5767
LARRIMAH 5566	MARYFIELD 5666	HUTWOOD 5766
DALY WATERS 5565	SCARLET HILL 5665	ARNOLD RIVER 5765

MARYFIELD
SHEET 5666
NORTHERN TERRITORY
EDITION 1

CURRENT SAMPLING AS AT OCTOBER 1989

CRY0/060

MAP11

E.L.A. 6300

E.L.A. 6301

E.L.A. 6285

E.L.A. 6284

SCALE 1:100 000

2 1 0 2 4 6 8 10 12 Kilometres

INDEX TO ADJOINING MAPS

MAIS	HODGSON	ST VIDGEON
MARYFIELD	NUTWOOD (U53-14)	COX
SCARLET HILL	ARNOLD RIVER	TANUMBIRINI

Oct. 88

T6106 - 6111

(Total 6) G.H.P.

July 86

Stream
V2764
V2784 - 88
V2790 - 94
V2796 - 99

Barrage
V2768
V2780
V2783
V2789
V2800

(Total 20)

August 86

V2821 - 26
V2828 - 32
V2834 - 39
V2844

Barrage
V2819
V2820
V2827

(Total 21)

JULY/AUGUST '87

Stream
BC1188 - 96

Barrage
BC1181

(Total 10)

OCTOBER '87
BC1325 - 1335
(Total 11)

June - July 1989 (TWS/DVH/hmr)

Stream
BC5813 - 5827
BC5835 - 5886
BC5889 - 5900
BC5911 - 5923
BC5928
BC5930 - 5981
BC5983 - 5995
BC5997 - 6053
BC6101 - 6128
BC6137 - 6168
BC6353 - 6357
BC6262 - 6274
(Total 293)

Loam
BC5828 - 5834
BC5924 - 5927
BC5929
BC6129
BC6132 - 6135
(Total 17)

Rock
BC6130
BC6131
BC6136
(Total 3)

October 1989 (TWS/DVH/hmr)

Stream
BC6290
BC9687 - 9688
BC9785
Total 4

NORTHERN TERRITORY
HODGSON DOWNS D53-14
NUTWOOD 1:100,000
CURRENT SAMPLING
AS AT OCTOBER 1989

STOCKDALE PROSPECTING LIMITED

Compiled DO
Drawn K.F.M.
Date FEB '87
Scale 1:100,000
Revised
SEL

MAP12

C.R 90/060