



NORMANDY EXPLORATION LIMITED

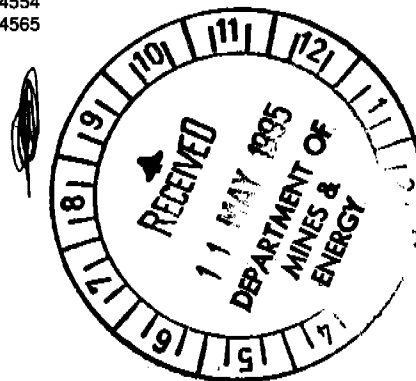
A.C.N. 006 306 690

A Member of the Normandy Poseidon Group

DARWIN OFFICE :
4/66 Coonawarra Road
WINNELLIE, Northern Territory

Telephone : (089) 84 4554
Facsimile : (089) 84 4565

PO Box 38970, Winnellie, NT 0821



**PARTIAL RELINQUISHMENT REPORT ON
EXPLORATION LICENCE 7190 (HODGSON DOWNS)
FOR THE PERIOD 13/02/91 TO 12/02/95**

HODGSON DOWNS PROJECT

HODGSON DOWNS 1:250,000 SHEET SD53-14

VOLUME 1 OF 1

Author: L.A. Price

Date: 3 May 1995

Commodities: Zinc, Lead, Silver, Diamonds

Authorised by:

Distribution:

- ☒ NT Department of Mines and Energy (1)
- ☐ Normandy Exploration, Darwin (1)
- ☐ Normandy Exploration, Adelaide (2)
- ☐ Stockdale Prospecting (1)

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Report No: 19361

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REPORT NUMBER: 19361

TITLE: PARTIAL RELINQUISHMENT REPORT ON
EXPLORATION LICENCE 7190 HODGSON DOWNS

AUTHOR: L.A. Price

DATE: 3 May 1995



ABSTRACT

This report details all work carried out on the portions of Exploration Licence 7190, relinquished at the end of the fourth year of tenure. EL7190 forms the Hodgson Downs Joint Venture between Normandy Exploration Limited and Stockdale Prospecting Limited.

The licence has been explored principally for diamonds with lesser work directed at base metal exploration. Work carried out in the relinquished portions of the licence has included reconnaissance stream sampling with heavy mineral and geochemical samples collected at each site.

Limited follow-up for diamonds and base metals included stream sediment (-80# and BLEG), rock chip sampling and minor stream traversing.

Possible kimberlitic indicator minerals recovered are interpreted as being released from Cretaceous sediment breakaways and thus are not derived from a proximal kimberlitic source rock.

Geochemical results were not anomalous and no further work is recommended.

1. INTRODUCTION

This is a partial relinquishment report for Exploration Licence 7190, which forms the Hodgson Downs Joint Venture between Normandy Exploration Limited and Stockdale Prospecting Limited.

This report covers all work carried out in the areas relinquished at the end of the fourth year of tenure.

2. TENEMENT

Exploration Licence 7190 (Hodgson Downs) was granted to Stockdale Prospecting Limited on 13 February 1991, for a period of six years. Originally covering 380 blocks, the licence now consists of 28 blocks. A total of 28 blocks were relinquished in February 1995 (Figure 1).

Following an unsuccessful diamond search by Stockdale, a joint venture agreement with Normandy Exploration Limited was executed on 21 December 1993.

3. LOCATION AND ACCESS

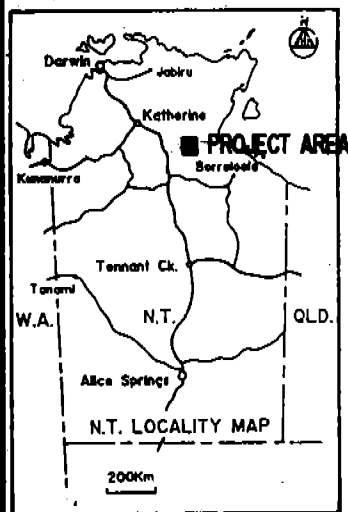
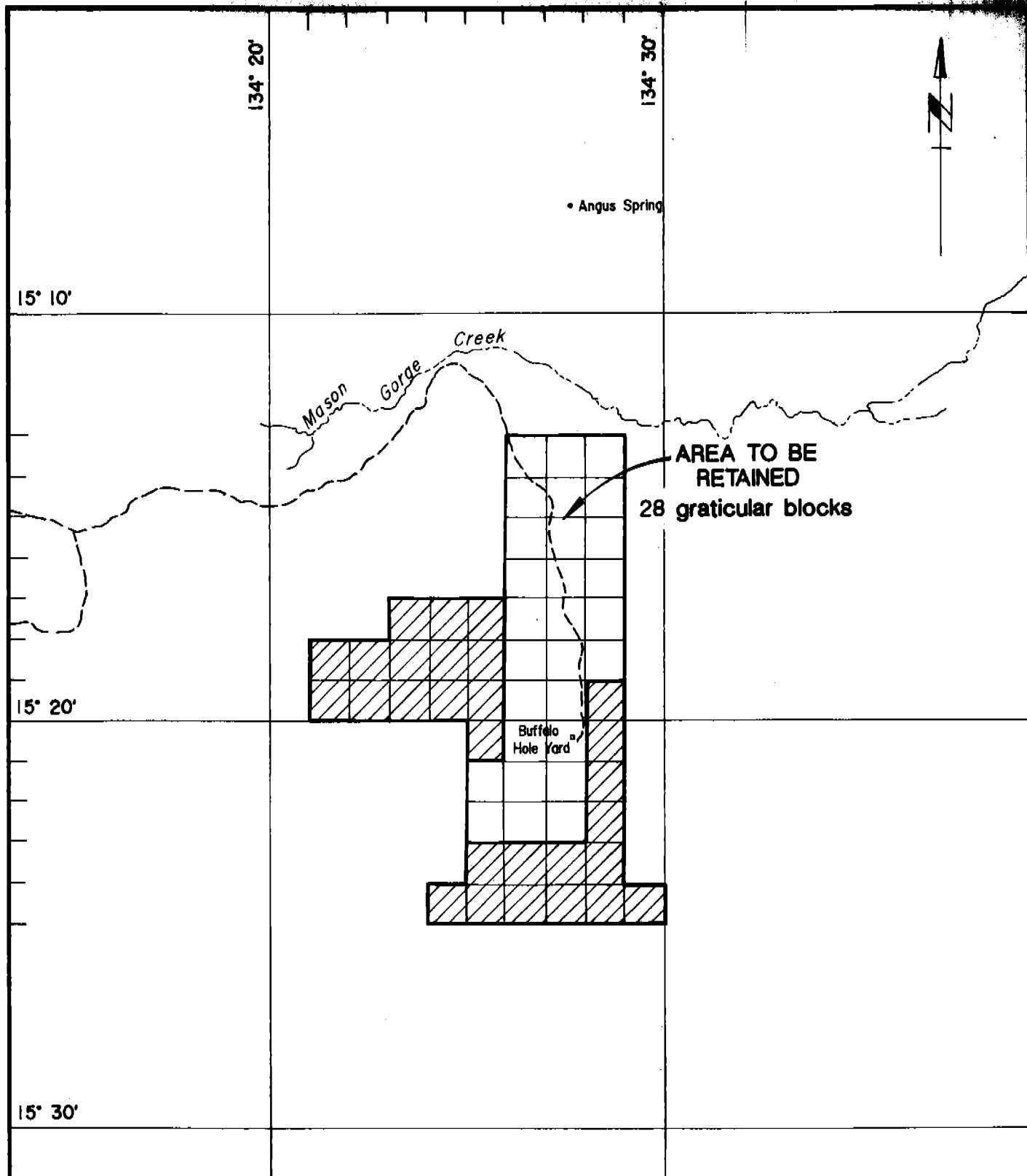
EL 7190 is located on the Hodgson Downs (SD53-14) 1:250,000 mapsheet, approximately 500 km SE of Darwin. Vehicle access is gained via station tracks from Hodgson Downs station. The EL has the monsoonal tropical climate typical of Northern Australia with vegetation ranging from grass covered alluvial plains adjacent to the major drainages, to open and moderately dense eucalypt forest. The northern portion of the licence area lies within the Gulf Fall physiographic division, whilst southern portions, notably the Arnold River drainage basin, belong to the dissected Tableland (Dunn, 1963 a, b). The EL is drained by the north-west flowing Arnold River, and by north-west and northerly flowing tributaries of the Hodgson River.

4. GEOLOGY

The EL lies on the Bauhinia Shelf within the central south-western part of the McArthur Basin. Outcrop is dominated by sediments of the Middle Proterozoic (Carpentarian) Roper Group, which consists mainly of sequences of sandstone with lesser siltstone and minor shale. Minor exposures of tholeiitic dolerite occur in northern part of the licence area, and have been ascribed an age of 1300Ma (Plumb, 1988). Relatively mild post-Roper Group deformation led to open folding and associated faulting, and was followed by a period of uplift and erosion.

Massive, current-bedded and clean sandstones with intercalated conglomerate horizons of the Lower Cambrian Bukalara Sandstone form a horizontal cap overlying eroded Roper Group sediments, but are limited to restricted exposures in the northern part of the EL.

A hiatus in deposition occurred from Lower Cambrian until Lower Cretaceous times when sediments of the Petrel Formation were deposited. These comprise terrestrial sandstones overlain by marine siltstone, claystone and sandstone and form mesas across the northern and southern portions of the licence area.



MAP REFERENCE :- 1 : 250,000
HODGSON SD53-14



AREA TO BE RELINQUISHED
(TOTAL 28
GRATICULAR BLOCKS)

0 5 10 km

Scale 1 : 250,000

NORMANDY EXPLORATION LIMITED
A.C.N. 006 306 690

HODGSON DOWNS
EL 7190
AREA TO BE RETAINED
Year 5

Figure 1

Compiled G.J.C. / A.E.F.	Date Dec. 1994	Scale 1 : 250,000	Plan no. NTD 621
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A variety of surficial deposits resulting from Cainozoic weathering and including porcellanites, sand spreads and pisolitic ferricrete are widespread throughout the area.

5. 1991 EXPLORATION PROGRAMME

5.1 Remote Sensing

Thematic Mapper imagery and air photos were examined prior to the commencement of fieldwork. No anomalous features thought indicative of ultramafic intrusives were observed.

5.2 Reconnaissance Sampling

The area was reconnaissance stream sampled during the first year of tenure at a density of approximately 1 sample per 5 km². At each sample location, a heavy mineral sample comprising 100 litres of stream sediment was excavated from the best available trap site, screened to -1mm or -4.75mm, and bagged. A geochemical sample consisting of about 300-400g of the finest available sediment from the active stream channel was also collected at each site. A duplicate geochemical sample was taken at every tenth site and is distinguished by the sample number suffix 'B'. All sampling was conducted using a Bell Jet Ranger helicopter.

A total of 21 reconnaissance samples were collected from the relinquished portions of the licence area. These are the BD series samples indicated on Plan ROPPR003.

5.2.1 Sample Processing, Examination and Analysis

Heavy mineral samples underwent primary concentration at Stockdale's Darwin Treatment Plant. Further concentration and mineral examination took place in the company's Melbourne laboratories.

Geochemical samples were forwarded to Stockdale's geochemical section in Melbourne where they were prepared by screening to -80#. The prepared fraction was then submitted to Analabs in Perth for determination of trace elements. Cr, Mn, Fe, Ni, Cu, Zn, Mo, Sb, Pb and Bi were analysed by ICP, As by AAS and Au by carbon rod with AAS finish.

5.2.2 Results

Possibly kimberlitic indicator minerals, including ilmenite and spinel were recovered from 7 heavy mineral samples (Table 1).

The geochemical data (Appendix 1) was reviewed but no significantly anomalous results are present within the relinquished area.

**TABLE 1: EL 7190 POSITIVE GRAIN COUNTS, 1991
RECONNAISSANCE SAMPLING**

SAMPLE NO	1:100,000 SHEET	1:100,000 COORDINATE	ILMENITE	SPINEL
BD3270	Hodgson	325054		5
BD3271	Hodgson	328048		9
BD3272	Hodgson	330049		17
BD3496	Hodgson	392033		1
BD3623	Hodgson	332065	2	12
BD3531	Hodgson	349071		4
BD3532	Hodgson	350072		3

5.3 Follow-Up Diamond Sampling

5.3.1 Sampling

Seventeen follow-up heavy mineral samples (BD 3700 and BD 4400 series) were collected in the relinquished areas. Sample collection, treatment and examination was as described above.

5.3.2 Results

Possibly kimberlitic spinels and ilmenites were recovered from eight of the Samples (Table 2).

**TABLE 2: EL 7190 POSITIVE GRAIN COUNTS, 1991
FOLLOW- UP SAMPLING**

SAMPLE NO	1:100,000 SHEET	1:100,000 COORDINATE	ILMENITE	SPINEL
BD3758	Hodgson	315048		3
BD3759	Hodgson	317053		6
BD3760	Hodgson	322050		3
BD3761	Hodgson	327056		3
BD3762	Hodgson	328060		5
BD3763	Hodgson	332067	1	11
BD4447	Hodgson	329053		5
BD4448	Hodgson	304041		6
BD4451	Hodgson	330356	1	7
BD4452	Hodgson	331062		2

6. 1992 EXPLORATION PROGRAMME

As the assessment of 1991 results showed only weakly anomalous values in an environment which does not seem very conducive to mineralisation, only a limited programme was carried out. Stream sediment, BLEG and rock chip sampling, and geological traversing took place during the second half of September 1992.

The helicopter supported programme was completed from a base at Urapunga Homestead.

6.1 Sampling Details

Minus 36# stream sediment geochemical samples were collected at 0.5km to 1km intervals and some BLEG samples comprising about 2kg of -2mm active stream sediment were also taken. Stream traversing and rock chip sampling was also carried out.

All sample locations are shown on Plan No ROPPRO03.

A total of 22 stream, 1 stream BLEG and 6 rock chip samples were collected from within the relinquished area.

The -36# stream sediment and -2mm BLEG samples were hand screened on site using stainless steel mesh. Duplicate stream sediment and BLEG samples were collected at every tenth site.

6.2 Analytical Details

All samples were sent to Analab's Perth laboratory for treatment as follows:

- (i) Geochemical stream sediment samples:
screen through -80#

The samples were then analysed for:
Ag, Ba, Cu, Pb, Zn by ICP-MS
Fe, Mn by ICP-OES
Au by aqua regia carbon rod finish on 30g charge.

- (ii) BLEG samples:
Cyanide extractable 24hr bottle roll of entire sample;
solvent extraction, carbon rod finish.

- (iii) Rock chip samples:
Jaw crush; fine pulverise
Analysis as for stream sediment samples, except Ag omitted.

Samples of certified reference materials were also submitted to monitor analytical standards.

6.3 1992 Results

Analytical results for all samples collected within the relinquished portion of EL 7190 during the 1992 programme are presented in Appendix 2.

7. 1993 EXPLORATION PROGRAMME

No field work was conducted on the relinquished areas during 1993.

8. 1994 EXPLORATION PROGRAMME

A small programme of stream sediment and rock sampling was carried out to confirm elevated base metal results in Stockdale's -80# stream sediment samples.

The re-sampling was conducted in small drainages incised into thin bedded and laminated shale and siltstone. A total of 5 stream sediment and 3 rock chip samples were collected. The stream sediment samples were sieved to -75mm.

All samples were analysed by Amdel Laboratories in Darwin. Sample preparation is as follows:

Rock Samples:	Crush, pulverise, aqua regia digest
Stream Samples:	Aqua regia digest

Samples were analysed by AAS (Method AA7) for the following elements:

Cu, Pb, Zn, Ag, As, Bi, Co, Cd, Fe, Mn, Mo and Ni.

Results are available in Appendix 3.

9. CONCLUSIONS

The possibly kimberlitic indicator minerals recovered are of low interest and probably being released from breakaways of Cretaceous sediments. It is most unlikely that they are derived from a proximal diamondiferous ultramafic source rock.

The geochemical results are not anomalous, and do not warrant further work.

10. REFERENCES

DUNN, P.R., 1963A. Hodgson Downs 1:250,000 Geological Series, *Bur. Min. Res. Aust. Explan. Notes D 53-14*.

DUNN, P.R., 1963B. Urapunga 1:250,000 Geological Series, *Bur. Min. Res. Aust. Explan. Notes D 53-10*.

PLUMB, K. A., 1988. Geology of the McArthur Basin (1:1,000,000 scale map).

PODOLSKY, M. H., 1991. Exploration Licence 7190, Roper River Area, NT, *First Annual Report to 13 March 1992, unpub.*

ROBINSON, H. R., 1993. Exploration Licence 7190, Roper River Area, NT, *Annual Report to 12 February 1993, unpub.*

APPENDIX 1

ANALYTICAL RESULTS FOR RELINQUISHED SAMPLES

1991 PROGRAMME

ANALYTICAL RESULTS FOR RELINQUISHED SAMPLES - 1991 PROGRAMME

Sample No	Cr (ppm)	Mn (ppm)	Fe %	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)	Mo (ppm)	Sb (ppm)	Au (ppm)	Pb (ppm)	Bi (ppm)	East	North
BD3270	24	244	3.74	20.1	33	19	3	0.77	0.67	0.0005	21.5	0.55	432664	8305476
BD3271	26	377	3.73	22.6	44	22	8	0.83	0.63	0.002	21.8	0.54	432823	8304845
BD3272	19	114	1.98	12.7	15	11	5	0.64	0.53	0.0005	10.6	0.35	433043	8304915
BD3282	21	193	2.15	16.7	17	18	7	0.82	0.6	0.0005	10.5	0.14	439479	8296367
BD3286	30	356	2.53	51.4	150	123	12	6.12	2.02	0.008	24.6	0.6	442713	8302811
BD3288	16	73	1.45	11.3	15	9	4	0.7	0.36	0.0005	6.63	0.26	443806	8299685
BD3289	24	325	2.34	52.2	91	56	10	5.04	1.31	0.003	15.1	0.36	444405	8299835
BD3496	30	274	2.22	10.4	19	17	2	1.71	1.03	0.002	15.3	0.44	439250	8303306
BD3497	27	229	2.16	10	18	13	4	1.12	0.76	0.001	15.5	0.44	439061	8303166
BD3531	24	201	2.59	14.5	25	18	2	0.89	1.12	0.003	13.8	0.36	434773	8307146
BD3532	5	103	0.98	10.1	10	5	2	0.89	0.64	0.0005	3.86	0.11	434963	8307206
BD3533	17	46	0.83	10.1	29	18	2	X	0.49	0.0005	6.67	0.18	438740	8309224
BD3535	13	70	0.99	10.7	2.5	2.5	2	X	0.64	0.0005	3.61	0.05	435182	8306505
BD3536	42	521	5.03	23.5	33	18	7	1.19	0.92	0.004	13.2	0.43	434265	8308108
BD3612	23	292	3.81	13.6	8	6	5	1.3	0.8	0.002	5.46	0.15	438138	8307012
BD3613	20	120	1.69	14.1	16	9	1	0.85	0.61	0.002	7.98	0.25	437499	8307574
BD3614	5	125	1.36	11	5	2.5	5	0.52	0.49	0.0005	4.54	0.13	437520	8307433
BD3615	12	85	1.06	12.6	9	2.5	3	0.74	0.6	0.002	4.96	0.15	436609	8306263
BD3623	5	161	1.45	5.36	8	6	4	0.36	0.39	0.0005	3.88	0.05	433135	8306497
BD3624	31	250	3.23	13.6	25	16	6	1.08	0.5	0.002	10.3	0.33	432388	8308190
BD3625	40	362	3.76	21.5	56	35	2	2.26	0.74	0.0005	14.6	0.51	430841	8308482

APPENDIX 2

ANALYTICAL RESULTS FOR RELINQUISHED SAMPLES

1992 PROGRAMME

- (a) STREAM SEDIMENT SAMPLES -80#**
- (b) STREAM BLEG SAMPLES**
- (c) ROCK CHIP SAMPLES**

* All values are in ppm except for Fe%.

STREAM SEDIMENT SAMPLES

SAMPLE NO		Mn	Fe	Cu	Zn	Ag	Ba	Au	Pb
GH5371	-80#	147	2.62	82.6	32.6	0.63	243	0.007	25.3
GH5372	-80#	217	1.74	43.7	28.4	0.32	121	0.002	10.6
GH5379	-80#	114	1.39	12.1	9.82	0.27	130	<0.001	4
GH5380	-80#	154	2.6	85.4	33	0.65	299	0.005	25.8
GH5385	-80#	63	1.15	9.16	3.63	0.15	43.8	<0.001	4.47
GH5386	-80#	67	0.86	10.4	4.81	0.15	52.7	<0.001	4.02
GH5387	-80#	100	1.26	13.3	7.98	0.25	79.3	<0.001	6.13
GH5388	-80#	84	0.89	10	4.6	0.24	49.1	<0.001	2.71
GH5394	-80#	237	1.87	77.6	56.6	0.31	220	0.004	18.7
GH5395	-80#	291	2.22	101	112	0.57	320	0.008	25.6
GH5396	-80#	477	2.01	101	106	0.46	266	0.005	20.1
GH5399	-80#	206	1.9	86	124	0.35	226	0.006	18.8
GH6001	-80#	186	1.8	70.6	59	0.48	165	0.003	13.8
GH6010	-80#	186	1.69	70.8	58.4	0.37	165	0.003	14
GH6023	-80#	236	2.57	20.3	16	0.19	210	<0.001	12.2
GH6024	-80#	391	3.17	19.3	14	0.55	230	<0.001	15.8
GH6025	-80#	377	3.54	23.5	13.8	0.43	157	<0.001	10.9
GH6026	-80#	294	2.62	36	19.8	0.59	250	0.001	17.8
GH6027	-80#	296	3.22	20.9	9.53	0.39	90.8	<0.001	10.1
GH6028	-80#	531	3.18	29.1	22.6	0.77	272	<0.001	19.8
GH6032	-80#	195	2.06	17.9	11.7	0.51	176	<0.001	13.1
GH6033	-80#	303	2.64	22.2	17.6	0.61	233	<0.001	12.9

STREAM BLEG SAMPLES

SAMPLE NO	Au
GH5452	0.09

ROCK CHIP SAMPLES

SAMPLE NO	Mn	Fe	Cu	Zn	Ba	Au	Pb	Au (R)
GH5801	322	1.39	5.12	7.44	100	<0.001	8.39	-
GH5802	138	1.14	7.67	4.99	40.8	<0.001	5.45	-
GH5806	9480	5.86	87.3	22.5	136	<0.001	6.33	-
GH5807	105	1.68	406	37.7	295	0.002	21.9	0.003
GH5808	8420	5.67	30.8	26.4	106	0.001	10.1	-
GH5810	5300	49.74	161	111	204	<0.001	26.7	-

APPENDIX 3

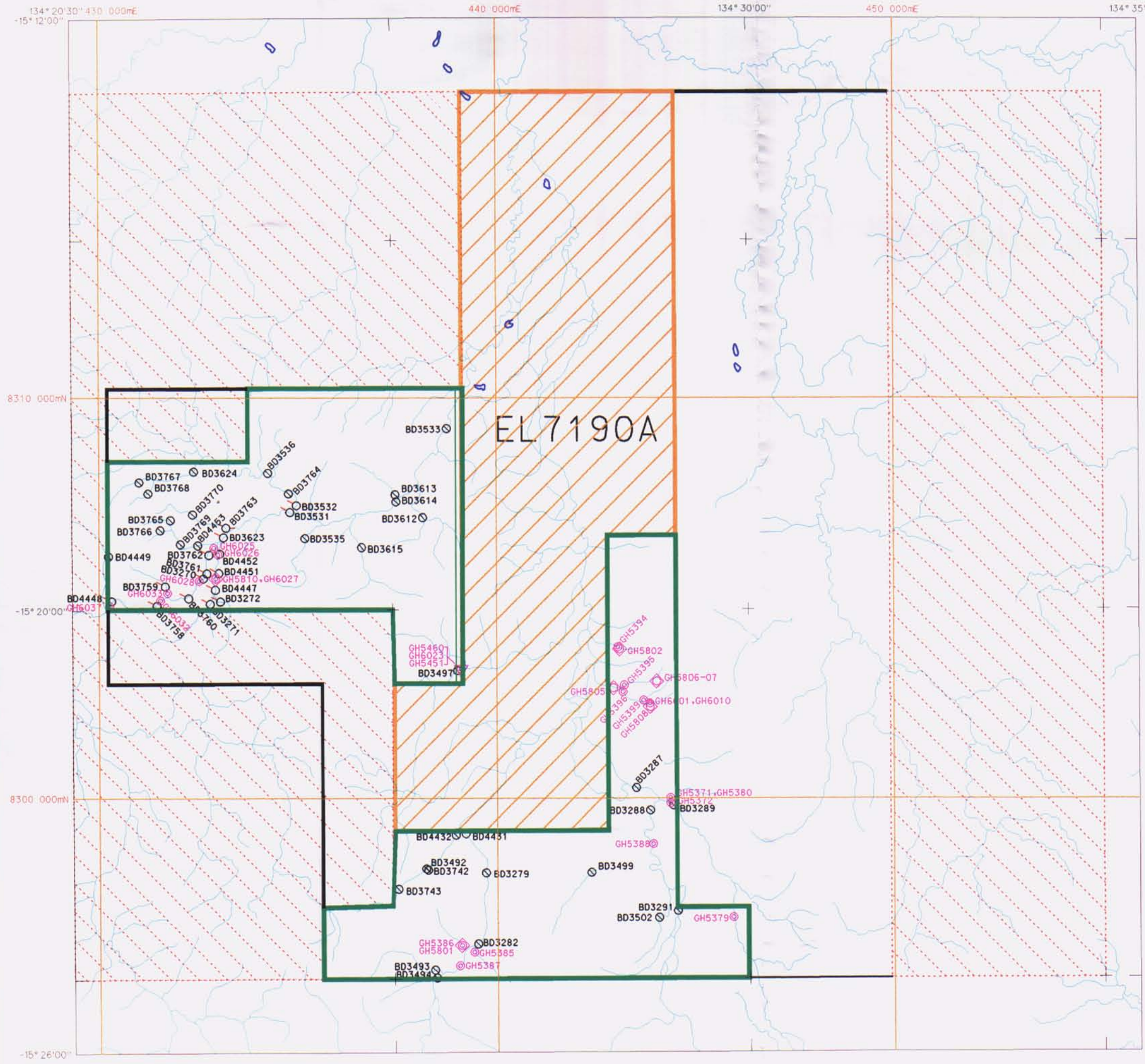
ANALYTICAL RESULTS FOR RELINQUISHED SAMPLES

1994 PROGRAMME

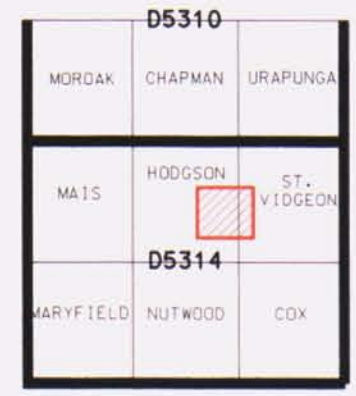
*All values are in ppm

ANALYTICAL RESULTS FOR RELINQUISHED SAMPLES - 1994 PROGRAMME

SAMPLE NO	TYPE	EASTING	NORTHING	Cu	Pb	Zn	Ag	As	Bi	Co	Fe	Mn	Mo	Ni	Cd
315973	STR	442978	8303800	140	21	82	<0.1	5	<1	12	25520	320	3.7	47	<1
315974	RK	442978	8303800	210	19	40	0.3	<5	<1	7	20460	2820	6.8	42	<1
315975	RK	443098	8303396	220	22	60	0.1	15	<1	4	22320	130	7.6	31	<1
315976	RK	443098	8303396	310	19	240	<0.1	45	<1	160	98230	13600	74	470	1
315977	STR	443098	8303396	130	25	88	<0.1	<5	<1	9	25520	480	6.8	47	<1
315979	STR	443175	8302630	130	19	88	<0.1	10	<1	10	22880	500	2	45	<1
315980	STR	443170	8302750	145	23	74	<0.1	15	<1	9	25960	530	2.3	43	<1
315981	STR	442785	8304287	120	16	85	<0.1	<5	<1	14	17050	730	0.7	32	<1



- AREA RELINQUISHED 1/93
- AREA RELINQUISHED 1/94
- AREA RELINQUISHED 2/95
- AREA RETAINED



INDEX TO ADJOINING SHEETS

ANALYSED SAMPLES

- STREAM SAMPLE
 - LOAM SAMPLE
 - ROCK SAMPLE
 - BARRAGE SAMPLE
 - BULK SAMPLE
 - DRILL SAMPLE
 - TRENCH SAMPLE
 - UNCLASSIFIED
 - PIMA
 - GEOSTREAM
- VGC RESULTS
- KIMBERLITIC GARNET
 - KIMBERLITIC ILMENITE
 - POSSIBLE KIMBERLITIC SPINEL
 - POSSIBLE KIMBERLITIC GARNET
 - POSSIBLE KIMBERLITIC ILMENITE
 - POSSIBLE KIMBERLITIC CHROME DIOPSIDE
 - DIAMOND
 - NEGATIVE CLASSIFICATION

SAMPLE LISTING

01/90 STREAM BD3623-BD3624 Total 2	10/92 GEOSTREAM GH5371-GH5372 GH5379-GH5380 GH5385-GH5388 GH5394-GH5396 GH5399 GH6001 GH6010 GH6023 GH6025-GH6028 GH6032-GH6033 GH6037 Total 22
10/90 STREAM BD3270-BD3272 BD3279 BD3282 BD3287-BD3289 BD3291 BD3492-BD3494 BD3497 BD3499 BD3502 BD3531-BD3533 BD3535-BD3536 BD3612-BD3615 Total 24	10/92 GEOBSTREAM GH5451 GH5460 Total 2
04/91 STREAM BD3742-BD3743 BD3758-BD3770 BD4431-BD4432 BD4447-BD4449 BD4451-BD4453 Total 23	10/92 GEOROCK GH5801-GH5802 GH5805-GH5808 GH5810 Total 7



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D:/REPORT95/NTMDR95/ROPPR003.BND

STOCKDALE PROSPECTING LIMITED
A.C.N. 004 912 172

NORTHERN TERRITORY
D5314 - HODGSON DOWNS 1:250,000
PART HODGSON & ST VIDGEON 1:100,000s

ROPER RIVER PROJECT
EL7190A
PART RELINQUISHMENT

Compiled	BMcC
Drawn	HMR
Date	10/5/94
Scale	1:100,000
Revised	05/95 MAK
ROPPR003	

