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EL 2648 AND MCS 3143, 3434 AND 6076

HINCKS

**ANNUAL REPORTS TO LICENCE EXPIRY/SURRENDER
FOR THE PERIOD 1/10/1999 TO 30/9/2004**

Submitted by
Olliver Geological Services Pty Ltd
2004

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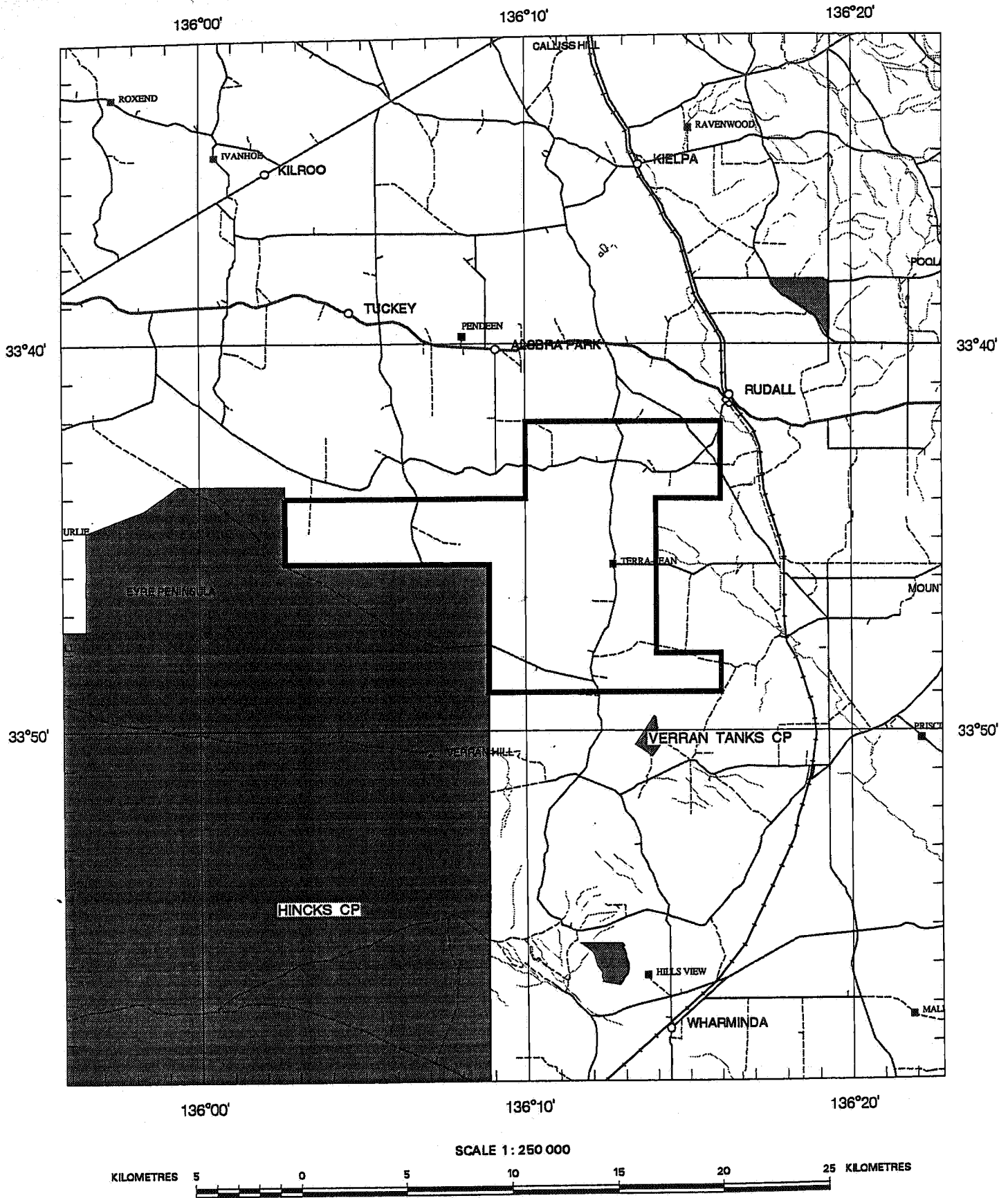
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Minerals and Energy Resources
7th Floor
101 Grenfell Street, Adelaide 5000

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Facsimile: (08) 8204 1880



Government of South Australia
Primary Industries and Resources SA

SCHEDULE A



APPLICANT : OLLIVER GEOLOGICAL SERVICES PTY LTD

FILE REF : 46/99

TYPE : MINERAL ONLY

AREA : 143 km² (approx.)

1:250000 MAPSHEETS : KIMBA

LOCALITY : HINCKS AREA – Approximately 130 km north of Port Lincoln

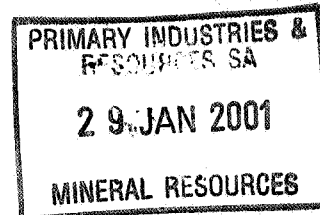
DATE GRANTED : 1 October 1999

DATE EXPIRED : 30 September 2000

EL No : 2648

EL 2648

TERRA LEEN NO 1 GYPSUM DEPOSIT



TECHNICAL REPORT

For the year ending 30 September 2000

Geological Investigations

Proposed Mining Program

By

Jeffrey G Olliver

tlgy rep 1

PIRSA

R2001/00081



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COLOUR PLATE

APPENDIX	A	Chemical Analysis	ALS Analytical Reports
			ST 27464 17.09.99
			ST 27758 12.10.99

PLANS

Fig No.	Title
1.	Regional Geology
2.	Topographic Plan
3.	No. 1 Deposit Tenement Plan
4.	No. 1 Deposit Site Plan
5.	No. 1 Deposit Mine Plan
6.	No. 1 Deposit Cross Sections
7.	No. 1 Deposit Profiles after Mining

INTRODUCTION

Eyre Peninsula Gypsum has been established by Olliver Geological Services Pty Ltd and Terry & Kerrie Traeger of Konanda to explore for, mine, process and market gypsum on Eyre Peninsula.

Mining commenced at Konanda no.1 deposit ML 6034, 7km southeast of Darke Peak in February 1999 (Olliver, 1998).

This report describes the second proposed mine at Terra Leen no.1 deposit.

LOCATION

Section: 30

Hundred: Verran

Nearest Town: 13km southwest of Rudall on the Cummins – Kimba railway (Fig 1)

Map Sheets: 1:250 000 KIMBA SI 53 – 7 (Fig 1 from Flint et al, 1989)
 1:100 000 Verran 6130
 1: 50 000 Hincks 6130 – 3 (Fig 2 is part of this sheet)

District Council: Cleve

Access: from Rudall on the sealed Cleve – Darke Peak road, proceed south and west for 7.4km along the unsealed Swaffer Road, thence south for 9.2km along the Wharminda Road (DC of Cleve Road 41).
 A new gate provides direct access to the mine site on the eastern side of the road.

LAND OWNERSHIP

Land Tenure: Perpetual Crown Lease no. 19088

Certificate of Title: Vol 1180 Folio 11

Land owner/ occupier: Kerrin Rodney Arthur
 36 Edwards Terrace
 CLEVE SA 5640

Land use: cereal cropping and sheep/cattle grazing

MINERAL TENURE

Exploration

EL 2648 of 143 sq km was granted to Olliver Geological Services Pty Ltd on 1 October 1999 for one year over the area shown on Fig 1.

Mining

Mineral Claim 3143 was pegged on 24 September 1999 over an area of 1.4ha and Application for Registration was lodged on 7 October 1999 together with an Application for Mineral Lease. ML6076 was granted for seven years from 25 May 2000 and Mining and Rehabilitation Program no. 00/45 was approved on 15 August 2000.

DESCRIPTION OF LAND AND ENVIRONMENT

Environmental Setting (Laut et al, 1977)

Province	4.	Eyre and Yorke Peninsulas
Region	4.3	Central Mallee and Dunes
Association	4.3.7	Hambridge. Extensive undulating plain with parallel dunes and occasional low granite inselbergs, and tidal flats and coastal dunes. Grassland of pasture and cereal crop and open mallee scrub. Gypsum flats and associated lunette dunes were not recognised by Laut et al (1977).

Vegetation

Gypsum dune supports scattered mallee eucalypt and two species of melaleuca (Plate 1) with less trees on the flat which include wild cherry and understorey of spinifex, onion weed and minor samphire.

Nearest Residence

Circle View homestead, 1.6km south (Fig 2).

Topography

Mineable gypsum is confined to a lunette dune around the eastern margin of a swampy flat. This curved dune is about 250m long, about 50m wide and up to 4m high.

Drainage

Shallow internal draining basin although most rainfall is absorbed by the gypsum dune.

Underground water

None to base of gypsum.

Soil type

Gypsum crops out over most of dune with shallow sand cover to north, east and south.

Fauna

Not documented.

Aboriginal Heritage

None known and none expected.

GEOLOGICAL INVESTIGATIONS**Geological Setting**

Terra Leen no.1 Gypsum Deposit is situated within the Gawler Craton, an extensive stable crystalline basement province of metamorphic and igneous rocks of late Archaean to Mesoproterozoic age.

Lacustrine gypsum designated as Yamba Formation of Holocene age formed by evaporation of saline water about 6 000 years ago in a series of shallow lakes and lagoons along the Driver River which drains from Caralue, about 30km southsouthwest of Kimba, southwards for about 80km to the coast near Arno Bay (Fig 1 & 2).

Subsequent weathering and wind erosion produced a surface layer of white gypsite (clay-sized gypsum) often in the form of a lunette dune on the opposite side (normally eastern) to the prevailing wind of a modern depression.

The only gypsum shown by Flint et al (1989) on KIMBA 1:250 000 sheet is in the swamps and dunes at Caralue (Fig 2).

Elsewhere, especially at Terra Leen, the five distinctive gypsum lunette dunes have not been recognised nor has the only operating gypsum mine, 1.5km to the east.

None of these gypsum resources from Caralue to Terra Leen to Arno Bay are mentioned in the PIRSA statewide review of gypsum by Valentine (1997).

Site Geology

The lunette dune consists of white gypsite discoloured at the surface to pale brown by organic matter underlain by pale coloured fine gypsarenite which becomes darker and sandy with depth. The low lying swampy area contains layers of gypsite, fine to coarse gypsarenite and gypsum crystals scattered through brown-grey sandy clay.

Sampling

Gypsum samples were collected on two occasions from hand auger holes as summarised in Table 1 from chemical analysis in Appendix A.

TABLE 1
RESULTS OF CHEMICAL ANALYSIS

Drill hole	Sample	Gypsum	Percent		Calc. Quartz
			CaMg CO ₃	Salt	
TL 9	0.0 – 1.0m white gypsite hard at 0.4m	92.7	0.74	0.11	6
	1.0 – 1.3m offwh to p. or-br gypsite to gypsarenite, sandy	67.0	1.25	0.05	31
	Average 0.0 – 1.3m	86.8	0.9	0.1	12
	1.3 – 1.8m lt or-br f. sand with gypsarenite	not analysed			
TL10	0.0 – 1.0m wh gypsite, p. br at surface	98.2	0.60	0.41	nil
	1.0 – 1.5m white gypsite	97.6	0.07	0.36	1
	1.5 – 2.0m wh gypsite v. p. br & yell f. gypsarenite darker with depth	99.3	-	0.19	nil
	Average 0.0 – 2.0m	98.3	0.3	0.3	nil
TL11	0.0 – 0.2m wh gypsite p. br at surface	78.8	1.32	0.54	19
	0.2 – 0.7m wh gypsite over v. p. br to yell f. gypsarenite, sandy	not analysed			
	0.7 – 0.8m p. or. gypsiferous sand				

Although not tested from here, results for other parameters are expected to be comparable to the similar high grade white gypsite from 0.0 – 1.0m in drillhole TL 8 at Terra Leen no. 2, 500m to the east as summarised below from ALS report ST 27464 in the Appendix.

Moisture content	2.89%
Cadmium	below detection limit of 5ppm Cd
Lead	below detection limit of 5ppm Pb

Size Analysis	%	Cumulative % Passing
+2mm	7.5	
-2mm +1mm	8.7	92.5
-1mm +600 microns	8.8	83.8
-600 +300 microns	9.8	75.0
-300 +150 microns	6.8	65.2
-150 +106 microns	7.0	58.4
-106 +75 microns	4.2	51.4
-75 microns	47.2	47.2

Tonnage and Grade

In ground *indicated resources* within ML 6076 are 6 000 tonnes based on

- maximum thickness of 2m in drillhole TL 10
- cross-sectional areas on Fig. 6
- average specific gravity of 1.2

A further 3 – 4 000 tonnes are *inferred* to the edge of the cereal crop which will require the removal of a thin layer of surface sand.

By not mining the lower more coloured sandy zone, average grade is expected to be

gypsum	93 – 96% $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ - Premium grade
sulphur	17.3 – 17.9% S
calcium	at least 21% Ca
carbonate	less than 1% CaMgCO_3
salt	0.1 – 0.3% NaCl
quartz sand	1 – 3% SiO_2
moisture	3%
sizing	
passing 5.6mm	100%
passing 2 mm	92%
passing 1 mm	83%
passing 75 microns	47%

Each stockpile will be sampled and analysed to ensure that accurate data are available.

Bagging Trial

By letter of 8 October 1999, approval was received under EL 2648 to use declared equipment to obtain a bulk sample.

One truck load of about 10 tonnes was dug by front-end loader from a pit 5m long, 3m wide and 0.8m deep about 2m west of drillhole TL 9 on 10 October 1999 (Fig 4 and Plate 1).

At Konanda, woven plastic bags were filled with 10kg, 15kg, 25kg and 50kg of gypsum to determine the most appropriate size to use for distribution to garden centres and other retail outlets on Eyre Peninsula.

PROPOSED MINING

Supervision

Pit layout will be designed by Terry Traeger and Jeff Olliver and operations will be supervised by Terry Traeger.

Operations

Mining will be on a campaign basis to stockpile sufficient gypsum once the lease is granted to supply the market for one year. Loading from stockpile will be on demand.

Hours

As and when required but probably from 7am to 5pm.

Mineral

Gypsum for broad acre spreading and bagging for sale through Eyre Peninsula retail outlets.

Market

At this stage 5 000 – 20 000 tonnes per year depending on rainfall and availability of gypsum from other deposits.

Mining Method

Simple open-cut by front-end loader to double-decker screen to remove oversize, tree roots etc.

Sequence

Mining will commence with a slot cut through the lunette dune through hole TL 10 to base of gypsum and then advance in both directions (Fig 5).

Explosives

Not required.

Silt Retention Dam

Not required.

Stockpile

Simple conical heaps adjacent to screen on pit floor.

On Site Buildings

None required.

Services

Power and water not required.

Trucks and workmen will have two-way radio.

Mobile Equipment

Front-end loader.

Haulage

Entry and exit will be through a new gateway and short rubble road to unsealed Wharminda road.

MEASURES TO REDUCE ENVIRONMENTAL IMPACTS**Existing Situation**

Terra Leen is typical Eyre Peninsula farming country with cereal cropping and sheep and cattle grazing. Much of the district has been cleared of native vegetation except for Hincks Conservation Park of 66.3sq km, 5km to the west. Tractor-towed or motorised farming equipment is used regularly. Tractors and farm trucks traverse the network of well maintained unsealed roads.

Noise

Another front-end loader and trucks loaded with gypsum will have minor extra impact on this sparsely settled district.

Dust

Minimal extra impact compared to existing farm operations involved in harvesting, discing, ploughing, planting and moving livestock.

Traffic Nuisance

Minimal extra impact with a few more trucks, perhaps up to six per day, expected during the broad-acre spreading season from February to May.

Blasting

None required.

Vegetation Clearance

About a dozen or so large trees in the direct line of mining will be removed.

Visual Impact

Operations will be visible from the adjacent Wharminda Road for the life of the mine, probably two years. Most traffic is local farmers.

Stormwater

Not a problem - will be absorbed by gypsum or surrounding sandy soil. Pit floor will slope gently to west to enable run off, if any, to drain into swampy flat.

Top Soil

The surface will be skimmed by front-end loader bucket and stored on the flat adjacent to the pit floor, and respread over worked out area.

Waste Management

Refuse, oil etc will be disposed of either to a nearby homestead dump or the nearest council site.

REHABILITATION

At the completion of each campaign, the worked out area will be levelled and any surface skimmings and reject gypsum respread such that only the minimum area is being used for stockpiles and loading.

Post-mining land use

Cereal cropping.

Final Shape

The lunette dune will be removed and the surface will be lowered by one to three metres. There will be no terminal faces with the edge of the mined area battered back to merge with the surrounding cropped land.

SUMMARY

Geological investigations since April 1998 have identified a new gypsum province on Eyre Peninsula extending from Caralue in the north to Arno Bay in the south and Lock in the west.

Systematic exploration has continued since the opening of Konanda no.1 deposit with Terra Leen no.1 the second deposit to be mined containing *indicated resources* of 6 000 tonnes of white fine-grained gypsum.

Terra Leen no.1 is strategically located to supply gypsum to Rudall – Cleve and southwards to Wharminda and beyond.

Bulk gypsum is expected to be Premium Grade with screened product about 93 – 95% gypsum.

Salt will not exceed 0.5% and moisture content will be low at about 3%.

Selected truck loads of white gypsite containing about 95% gypsum will be bagged for the retail market.



Jeffrey G Olliver

REFERENCES

- Flint R.B., Rankin L.R. and Parker A.J., 1989
 KIMBA map sheet SI 53 – 7
 Geological Atlas of South Australia 1:250 000 series
Geological Survey of South Australia
- Laut P., Heyligers R.G., Keig Gail, Loffler E., Margules C., Scott R.M. and Sullivan M.E., 1977
 Environments of South Australia
 Province 4 Eyre and Yorke Peninsulas
 Division of Land Use Research, CSIRO
- Olliver J.G., 1998
 Konanda no.1 Gypsum Deposit Eyre Peninsula. Geological investigation 1998 and proposed mining program. Kagy rep 1.
- Valentine J.T., 1997
 Gypsum deposits of South Australia, PIRSA unpublished report



PLATE 1 Terra Leen Gypsum 19 August 1999.

Land Cruiser on site of proposed trial pit on top of white gypsum lunette dune. View east from roadside fence. Eucalypts and melaleucas are scattered along dune with spinifex and samphire on gypsiferous swamp in front.

APPENDIX A

CHEMICAL ANALYSIS

ALS Analytical Reports

ST 27464 17.09.99

ST 27758 12.10.99

AUSTRALIAN LABORATORY SERVICES P/L

A.C.N. 009 936 029

ANALYTICAL REPORT

PAGE 1 of 3

CONTACT: MR J OLLIVER
CLIENT: OLLIVER GEOLOGICAL SERVICES
ADDRESS: PO BOX 24
MCLAREN VALE SA 5171

LABORATORY: STAFFORD
BATCH NUMBER: ST27464
SUB BATCH: 0
No. OF SAMPLES: 7
DATE RECEIVED: 01/09/99
DATE COMPLETED: 17/09/99

ORDER No.: SAMPLE TYPE: GYPSUM PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	CaSO ₄ .2H ₂ O % M290 0.1	CaCO ₃ % M290 0.01	MgCO ₃ % M290 0.01	NaCl % M290 0.01	Al ₂ O ₃ % M290 0.01	Fe ₂ O ₃ % M290 0.01
MENINGIE GEMLAKE 27/08/99		91.6	5.79	0.94	1.17	0.04	0.11
ELEPHANT LAKE WH 27/08/99		94.1	3.85	0.40	0.57	0.03	0.04
ELEPHANT LAKE AG 27/08/99		90.2	6.14	1.28	1.00	0.08	0.09
TL 8 0.0-1.0M		94.0	2.20	0.36	0.35	0.08	0.07
TL 8 1.0-2.0M		88.4	1.45	0.06	0.15	0.20	0.17
TL 9 0.0-1.0M		92.7	0.74	<0.01	0.11	0.08	0.05
TL 9 1.0-1.3M		67.0	1.25	<0.01	0.05	0.41	0.17

COMMENTS:

• This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

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Brisbane Laboratory
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Cloncurry Laboratory
Phone: (07) 4742 1323 Fax: (07) 4742 1685
Kalgoorlie Laboratory
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Orange Laboratory
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Perth Laboratory
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Townsville Laboratory
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David James

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ANALYTICAL REPORT

PAGE 2 of 3

CONTACT: **MR J OLLIVER**
CLIENT: **OLLIVER GEOLOGICAL SERVICES**
ADDRESS: **PO BOX 24**
MCLAREN VALE SA 5171

LABORATORY: **STAFFORD**
BATCH NUMBER: **ST27464**
SUB BATCH: **0**
No. OF SAMPLES: **7**
DATE RECEIVED: **01/09/99**
DATE COMPLETED: **17/09/99**

ORDER No.:

SAMPLE TYPE: **GYPSUM**

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	H2O @ 60'C %	Cd ppm IC587	Pb ppm IC587	+2mm %	+1mm %	+600um %
		M951 0.01	5	5	MS326 0.1	MS326 0.1	MS326 0.1
MENINGIE GEMLAKE 27/08/99							
ELEPHANT LAKE WH 27/08/99							
ELEPHANT LAKE AG 27/08/99							
TL 8 0.0-1.0M		2.89	<5	<5	7.5	8.7	8.8
TL 8 1.0-2.0M							
TL 9 0.0-1.0M							
TL 9 1.0-1.3M							

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ANALYTICAL REPORT

PAGE 3 of 3

CONTACT: **MR J OLLIVER**
CLIENT: **OLLIVER GEOLOGICAL SERVICES**
ADDRESS: **PO BOX 24
MCLAREN VALE SA 5171**

LABORATORY: **STAFFORD**
BATCH NUMBER: **ST27464**
SUB BATCH: **0**
No. OF SAMPLES: **7**
DATE RECEIVED: **01/09/99**
DATE COMPLETED: **17/09/99**

ORDER No.:

SAMPLE TYPE: **GYPSUM**

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	+300um % MS326 0.1	+150um % MS326 0.1	+106um % MS326 0.1	+75um % MS326 0.1	-75um % MS326 0.1	
MENINGIE GEMLAKE 27/08/99 ELEPHANT LAKE WH 27/08/99 ELEPHANT LAKE AG 27/08/99 TL 8 0.0-1.0M TL 8 1.0-2.0M TL 9 0.0-1.0M TL 9 1.0-1.3M		9.8	6.8	7.0	4.2	47.2	

COMMENTS:

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ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: MR J OLLIVER
CLIENT: OLLIVER GEOLOGICAL SERVICES
ADDRESS: PO BOX 24
MCLAREN VALE SA 5171

LABORATORY: STAFFORD
BATCH NUMBER: ST27758
SUB BATCH: 0
No. OF SAMPLES: 4
DATE RECEIVED: 04/10/99
DATE COMPLETED: 12/10/99

ORDER No.:

SAMPLE TYPE: GYPSUM

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	CaSO ₄ .2H ₂ O % M291 0.1	CaCO ₃ % M291 0.01	MgCO ₃ % M291 0.01	NaCl % M291 0.01	Fe ₂ O ₃ % M291 0.01	Al ₂ O ₃ % M291 0.01
TL10 0.0 - 1.0M		98.2	0.46	0.14	0.41	0.02	0.03
TL10 1.0 - 1.5M		97.6	<0.01	0.07	0.36	0.02	0.04
TL10 1.5 - 2.0M		99.3	<0.01	<0.01	0.19	0.02	0.04
TL11 0.0 - 0.7M		78.8	1.24	0.08	0.54	0.06	0.12

COMMENTS:

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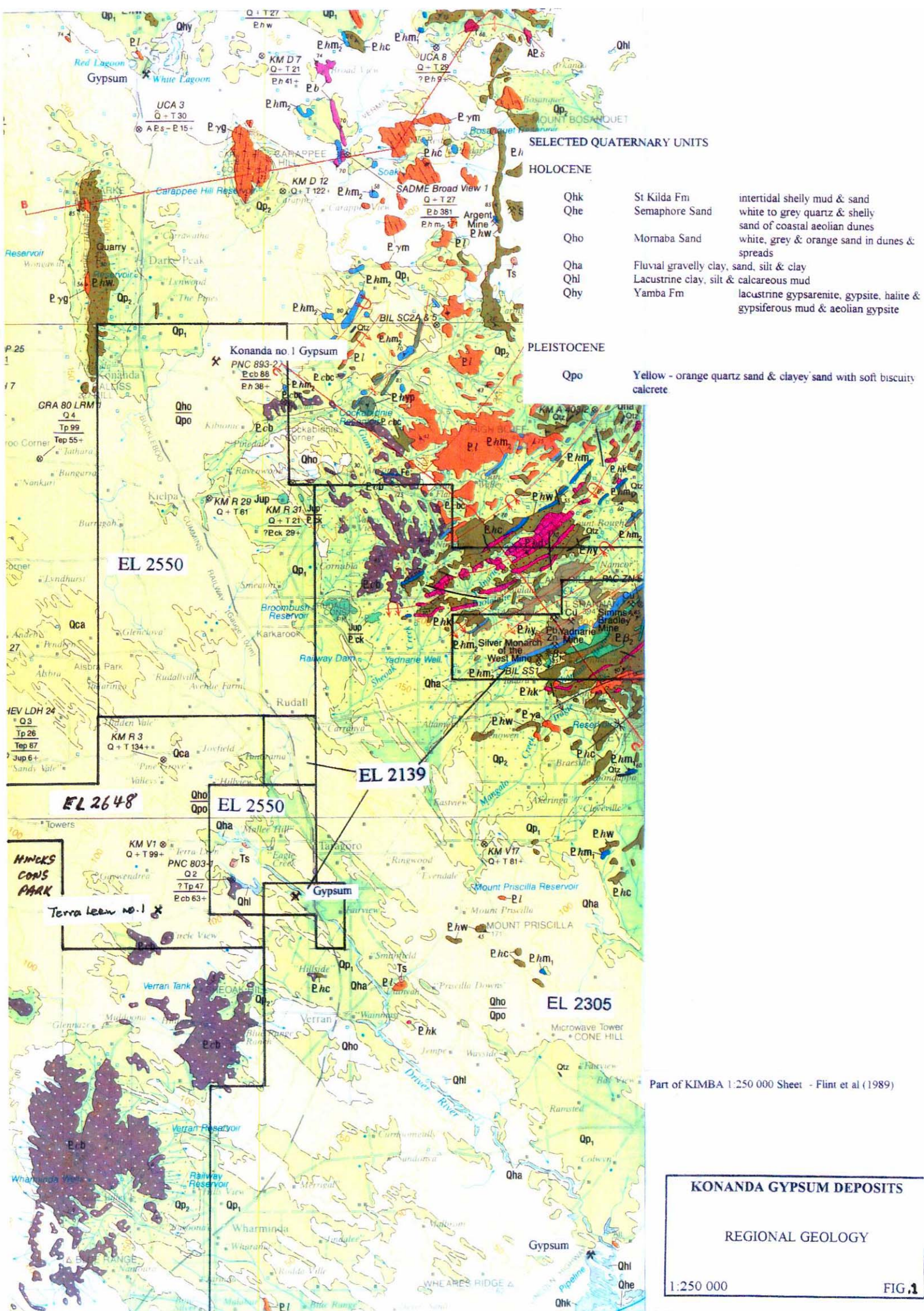
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Bendigo Laboratory
Phone: (03) 5446 1390 Fax: (03) 5446 1389
Brisbane Laboratory
Phone: (07) 3243 7222 Fax: (07) 3243 7218

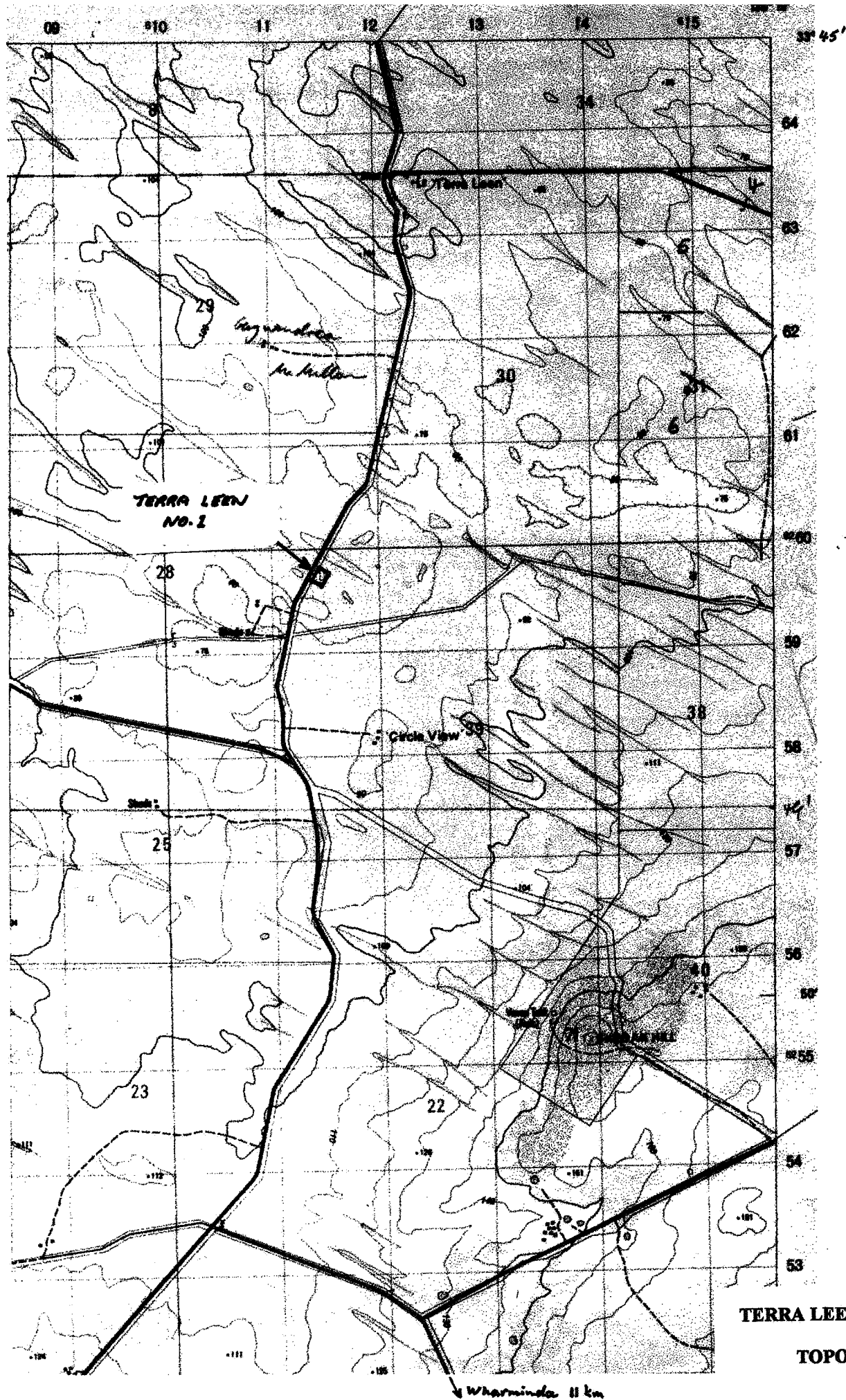
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approved for release.

David S. Jones





TERRA LEEN GYPSUM DEPOSITS

TOPOGRAPHIC PLAN

1:50 000

FIG 2



TERRALEEN NO. 1

TERRALEEN NO. 2

SECTION 30

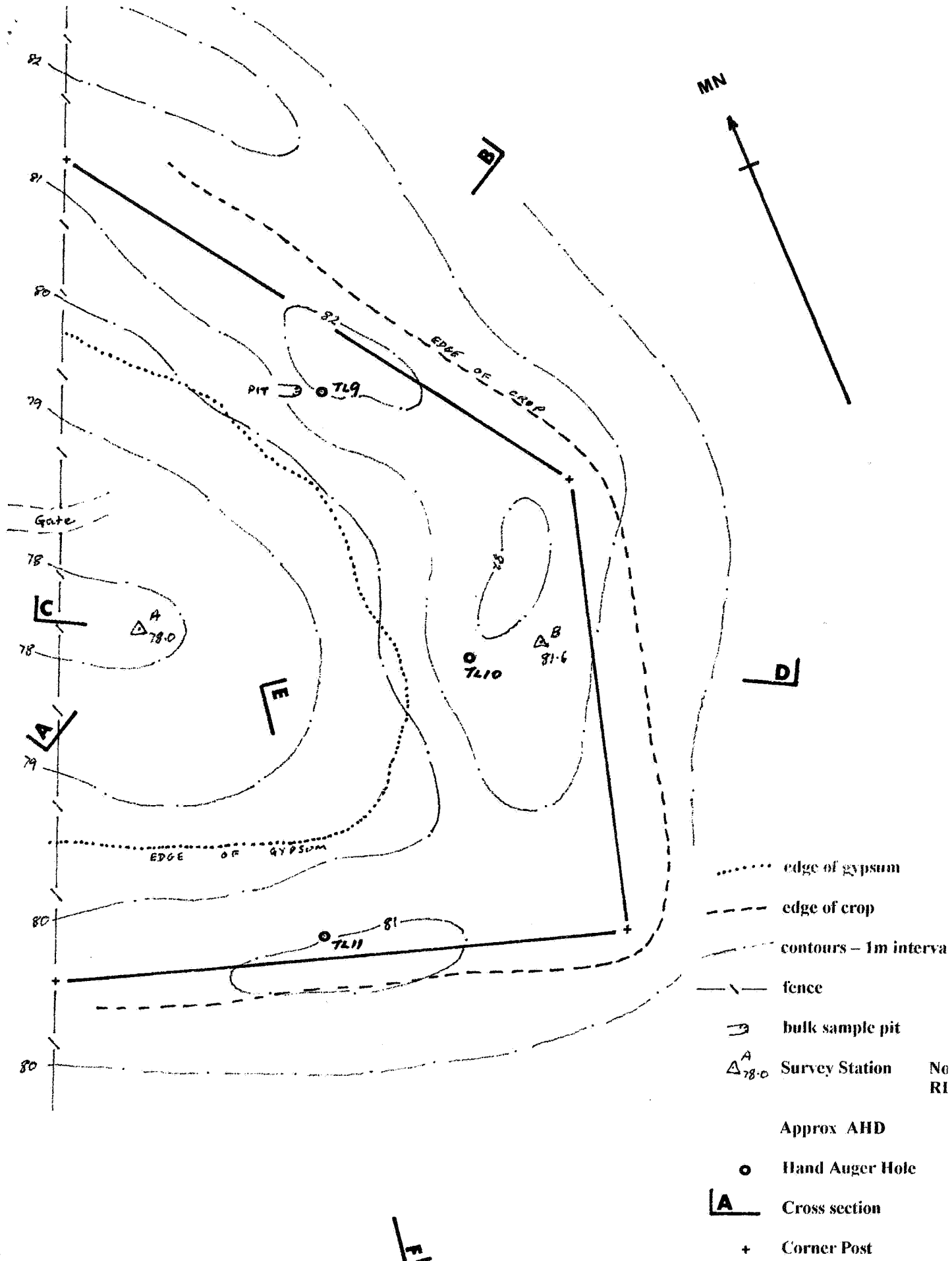
SECTION 39

3/6/7

• 9 Drill hole
□ Corner Post

TERRALEEN GYPSUM DEPOSITS

TENEMENT PLAN FIG 3

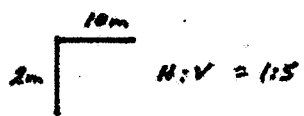
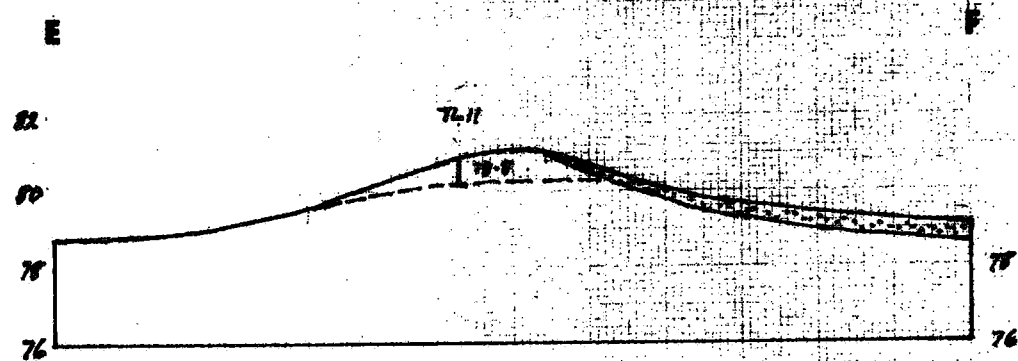
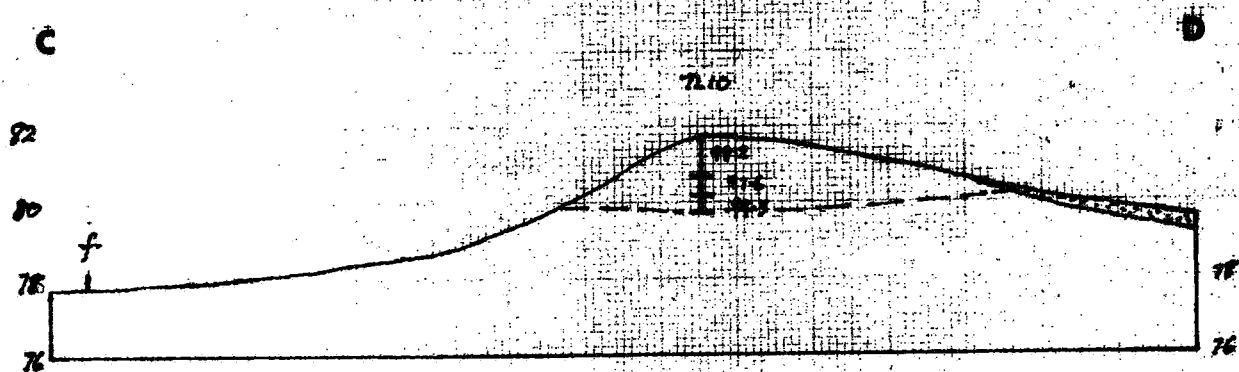
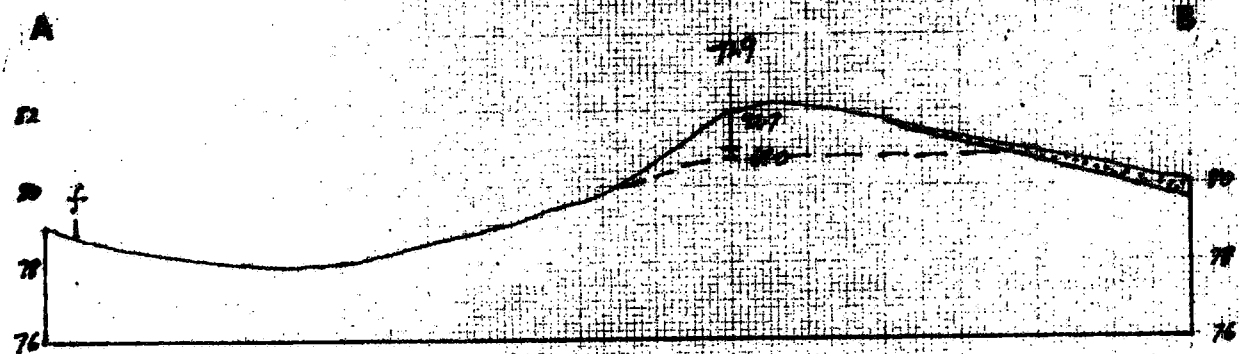


TERRA LEEN GYPSUM DEPOSITS

NO 1 DEPOSIT
SITE PLAN

1:1000

FIG 4

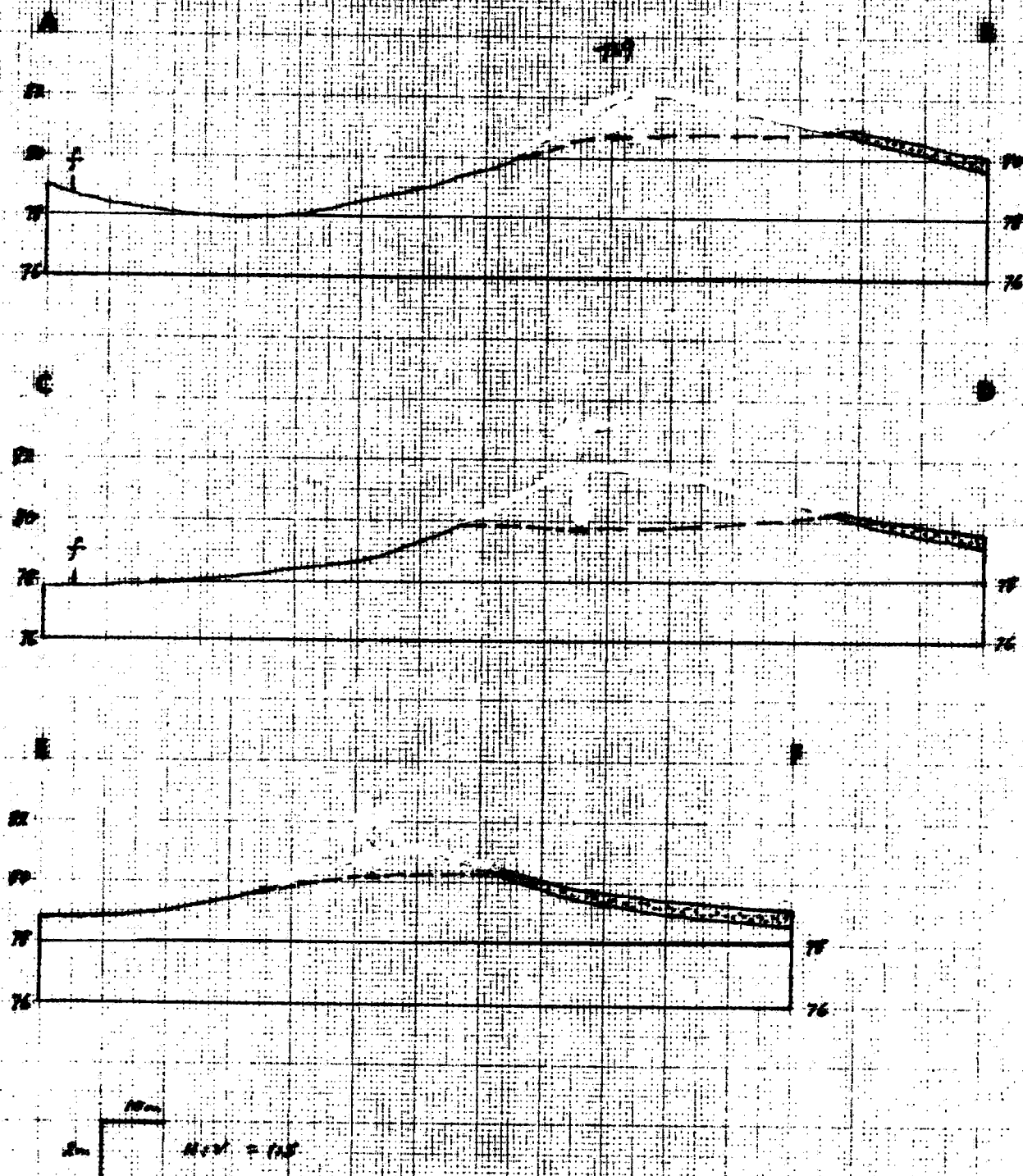


TERRA LEEN GYPSUM DEPOSITS

**NO 1 DEPOSIT
CROSS SECTIONS**

**H 1:1000
V 1:200**

FIG 6



TERRA LEEN GYPSUM DEPOSITS

NO 1 DEPOSIT PROFILES AFTER MINING

H 1:1000
V 1:200

FIG 7

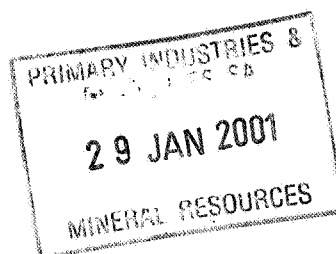
EL 2648 HINCKS

Summary of samples collected

and

Chemical analysis

Terra Leen & Hincks Gypsum Deposits



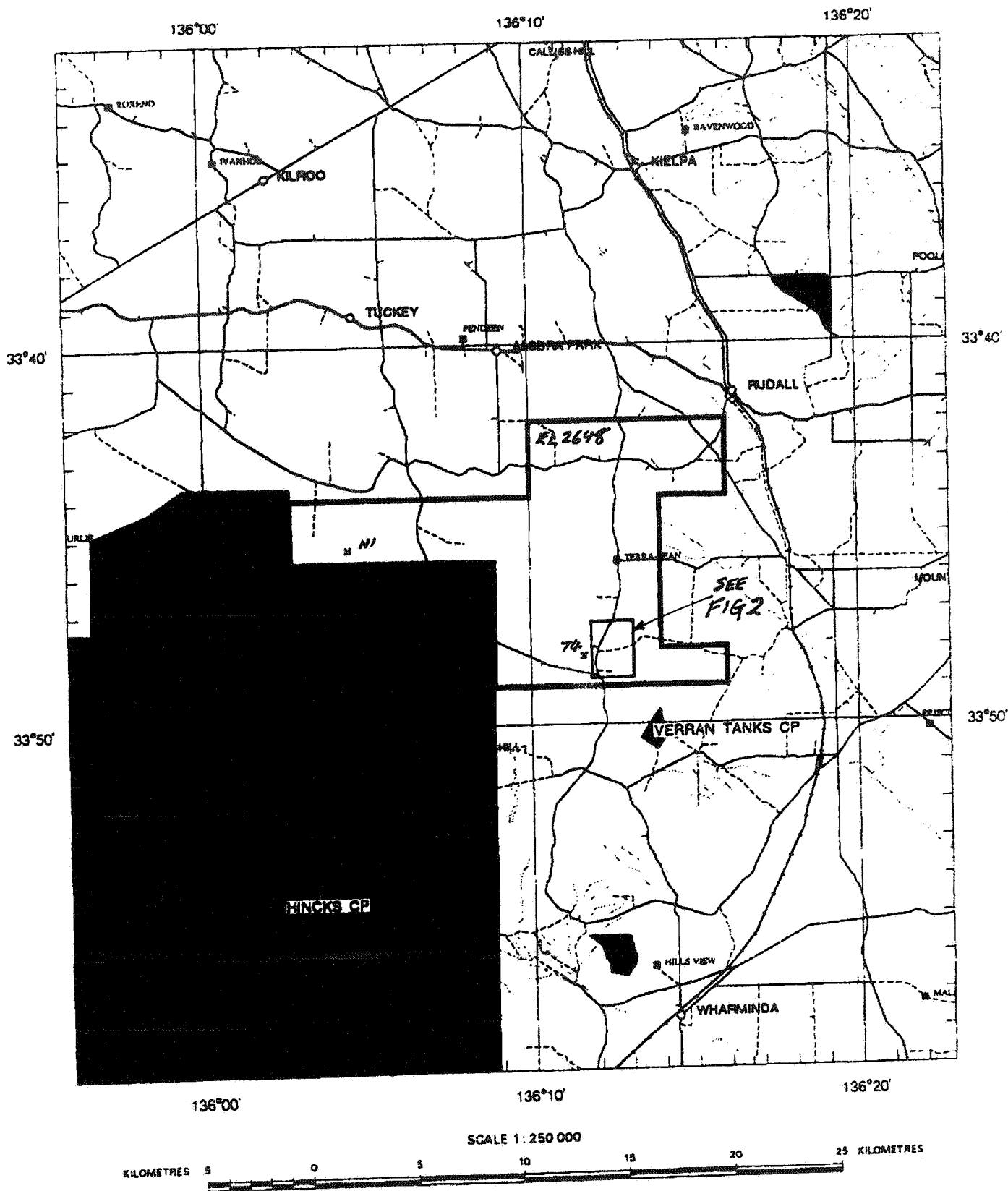
TERRA LEEN GYPSUM

Ref: tlgy 006

27 May 1999	ALS Report ST 26661	PERCENT		
		Gypsum	Salt	Calc. Quartz
TL 1.	Haybales 0-0.55m wh to cream gypsite to fine gypsarenite partly cemented in places	88.5	0.50	6
TL 2.	Lake 0-0.8m wh gypsite & lt yell f to c crystals up to 10mm	79.2	0.35	17
TL 3.	Dune Channel sample @ old pits 0-2m wh to lt grey gypsite, med gypsarenite & lt or-br gypcrete	93.0	1.89	2
TL 4.	West of road north dune 0-0.45m wh, lt yell, grey to cream gypsite with hard to friable br gypcrete	90.6	0.31	8

23 July 1999		ALS Report ST 27146		
TL 5.	First Hill 0.0 – 0.50m wh gypsite	94.4	0.02	5
	0.50 – 1.00m v. pale o – br f gypsarenite with minor wh gypsite, sandy	49.7	<0.01	48
	1.00 – 2.00m pale o – br g'arenite slt coarser, minor wh gypsite more sandy than above	42.7	0.01	56
TL 6	Dune – E of pits 0.0 – 1.2m wh gypsite p br – gy stained at surface . harder layers & nodules	86.6	0.40	10
	1.2 - 2.0m pale o-br f g'arenite with thin hard wh gypsite layers & sandy zones	71.5	0.25	23
TL 7	Dune – floor of lower pit 0.0 – 0.4m wh to lt.gy – br damp gypsite with harder layers	90.6	1.00	4

19 August 1999		ALS Report ST 27464		
TL 8	Haybales 0.0-1.0m wh gypsite	94.0	0.35	2
	1.0-2.0m yellowish – white hard 1.0-1.1 & 1.7-1.75m	88.3	0.15	9
TL 9	Second Hill 0.0-1.0m wh gypsite hard @ 0.4m	92.7	0.11	6
	1.0-1.3m off wh to p. o-br gypsite to f gypsarenite	67.0	0.05	31
	1.3-1.8m lt o-br f sand with gyp			



APPLICANT : OLLIVER GEOLOGICAL SERVICES PTY LTD

AREA : 143 km² (approx.)

FILE REF : 46/99

TYPE : MINERAL ONLY

1:250000 MAPSHEETS : KIMBA

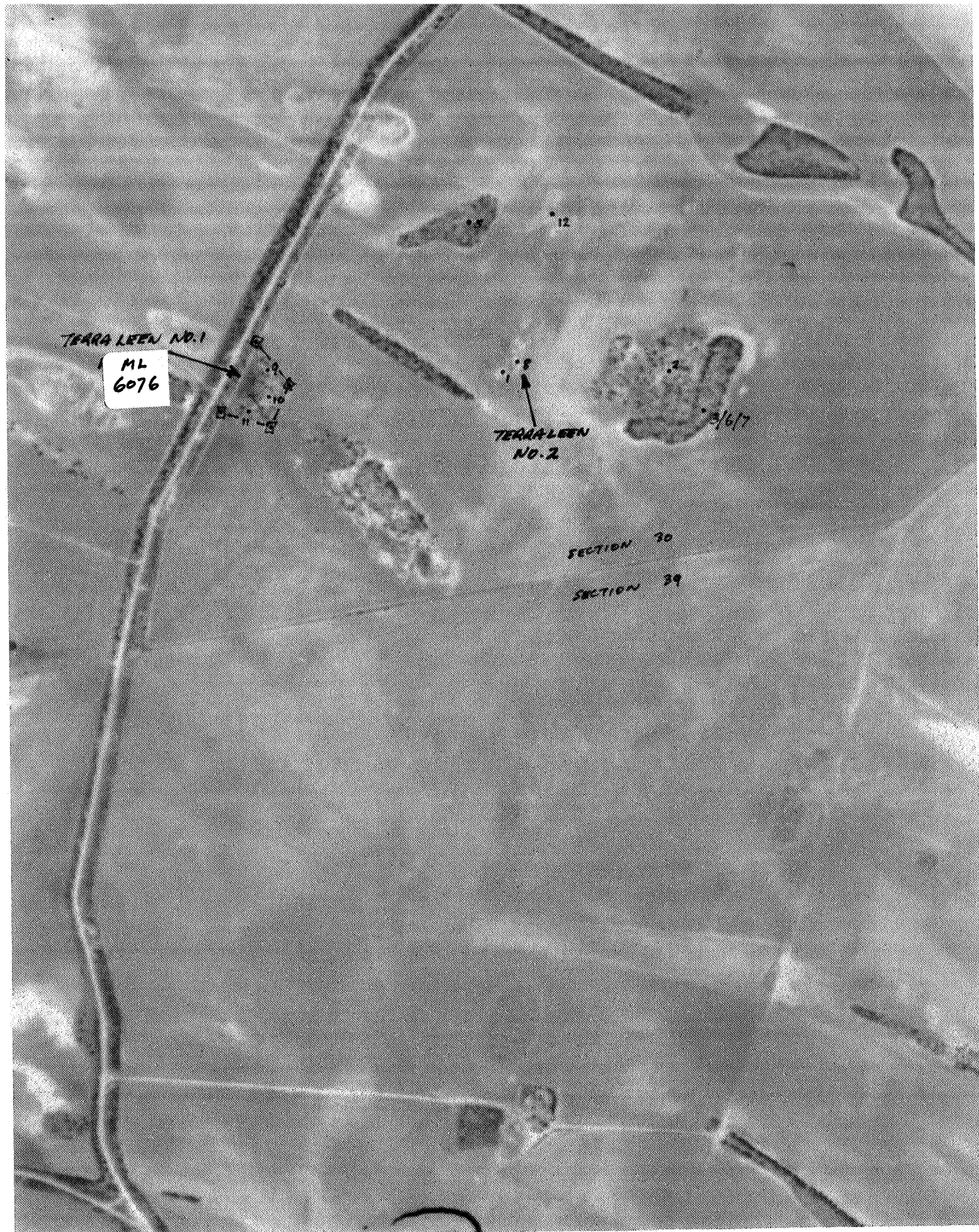
LOCALITY : LOCK AREA - Approximately 130 km north of Port Lincoln

EL No : 2648

DATE GRANTED 01.10.99

DATE EXPIRED

FIG. 1



TERRA LEEN GYPSUM DEPOSITS

TENEMENT PLAN

1:10 000

FIG 2

• 9 Drill hole
□ Corner Post

ANALYTICAL REPORT

PAGE 1 of 1

CONTACT **MR J OLLIVER**
CLIENT **OLLIVER GEOLOGICAL SERVICES**
ADDRESS:
PO BOX 24
MCLAREN VALE SA 5171

LABORATORY: **STAFFORD**
BATCH NUMBER: **ST26661**
SUB BATCH: **0**
No. OF SAMPLES: **11**
DATE RECEIVED: **10/06/99**
DATE COMPLETED: **22/06/99**

ORDER No.:

SAMPLE TYPE **GYP SUM**

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	CaSO ₄ .2H ₂ O %	CaCO ₃ %	MgCO ₃ %	NaCl %	Fe ₂ O ₃ %	Al ₂ O ₃ %
		M290 0.1	M290 0.01	M290 0.01	M290 0.01	M290 0.01	M290 0.01
WERRINA W4		94.5	0.06	<0.01	<0.01	0.08	0.28
WERRINA W5		99.8	<0.01	<0.01	<0.01	0.04	0.14
WERRINA W6		96.5	<0.01	0.52	2.65	0.05	0.19
PEAK VIEW PV 1		94.5	1.03	0.11	0.01	0.20	0.54
PEAK VIEW PV 2		96.6	2.14	0.17	0.07	0.11	0.31
PEAK VIEW PV 3		71.0	2.65	0.49	0.17	0.44	0.80
HINKS H1		91.3	2.07	0.95	0.69	0.14	0.26
TERRA LEEN TL1		88.5	4.04	0.18	0.50	0.12	0.22
TERRA LEEN TL2		79.2	1.41	0.13	0.35	0.19	0.97
TERRA LEEN TL3		93.0	2.50	0.42	1.89	0.04	0.07
TERRA LEEN TL4		90.6	0.35	0.02	0.31	0.08	0.27

COMMENTS:

Some samples in this batch are very high grade. It is recommended that repeat assays using fusion be conducted to establish impurity levels on these- to confirm purity.

• This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

Alice Springs Laboratory
Phone: (08) 8952 6020 Fax: (08) 8952 6028
Bendigo Laboratory
Phone: (03) 5446 1390 Fax: (03) 5446 1389
Brisbane Laboratory
Phone: (07) 3243 7222 Fax: (07) 3243 7218
Charlton Towers Laboratory
Phone: (077) 87 4155 Fax: (077) 87 4220

Cloncurry Laboratory
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New Zealand Laboratory
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Perth Laboratory
Phone: (08) 9249 2988 Fax: (08) 9249 2942
Townsville Laboratory
Phone: (077) 79 9155 Fax: (077) 79 9729

All pages of this report
have been checked and
approved for release.

David James

ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: **MR J OLLIVER**
CLIENT: **OLLIVER GEOLOGICAL SERVICES**
ADDRESS: **PO BOX 24
MCLAREN VALE SA 5171**

LABORATORY: **STAFFORD**
BATCH NUMBER: **ST27146**
SUB BATCH: **0**
No. OF SAMPLES: **10**
DATE RECEIVED: **02/08/99**
DATE COMPLETED: **13/08/99**

ORDER No.:

SAMPLE TYPE: **CLAY**

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	CaSO ₄ .2H ₂ O	CaCO ₃	MgCO ₃	NaCl	Fe ₂ O ₃	Al ₂ O ₃
		%	%	%	%	%	%
		M290	M290	M290	M290	M290	M290
		0.1	0.01	0.01	0.01	0.01	0.01
TERRA LEEN TL5 0.0-0.5M		94.4	0.41	<0.01	0.02	0.06	0.07
TERRA LEEN TL5 0.5-1.0M		49.7	0.71	0.06	<0.01	0.26	0.33
TERRA LEEN TL5 1.0-2.0M		42.7	0.31	0.05	0.01	0.27	0.37
TERRA LEEN TL6 0.0-1.2M		86.6	2.14	0.22	0.40	0.18	0.16
TERRA LEEN TL6 1.2-2.0M		71.5	2.97	0.76	0.25	0.38	0.46
TERRA LEEN TL7 0.0-0.4M		90.6	3.77	0.27	1.00	0.08	0.06
GILLES DOWNS GD1 0.0-0.9M		63.9	1.86	0.79	0.06	0.91	0.86
LAKE GILLES LG1 0.0-1.95M		97.3	1.78	0.46	0.41	0.06	0.04
LAKE GILLES LG1 1.95-2.2M		76.1	1.54	0.40	0.31	0.38	0.38
LAKE GILLES LG1 2.2-3.3M		81.5	5.57	1.20	0.94	0.23	0.20

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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**All pages of this report
have been checked and
approved for release**

David James

AUSTRALIAN LABORATORY SERVICES P/L

A.C.N. 009 936 029

ANALYTICAL REPORT

PAGE 1 of 3

CONTACT: MR J OLLIVER
CLIENT: OLLIVER GEOLOGICAL SERVICES
ADDRESS: PO BOX 24
MCLAREN VALE SA 5171

LABORATORY: STAFFORD
BATCH NUMBER: ST27464
SUB BATCH: 0
No. OF SAMPLES: 7
DATE RECEIVED: 01/09/99
DATE COMPLETED: 17/09/99

ORDER No.:

SAMPLE TYPE: GYPSUM

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	CaSO4 . 2H2O % M290 0.1	CaCO3 % M290 0.01	MgCO3 % M290 0.01	NaCl % M290 0.01	Al2O3 % M290 0.01	Fe2O3 % M290 0.01
MENINGIE GEMLAKE 27/08/99		91.6	5.79	0.94	1.17	0.04	0.11
ELEPHANT LAKE WH 27/08/99		94.1	3.85	0.40	0.57	0.03	0.04
ELEPHANT LAKE AG 27/08/99		90.2	6.14	1.28	1.00	0.08	0.09
TL 8 0.0-1.0M		94.0	2.20	0.36	0.35	0.08	0.07
TL 8 1.0-2.0M		88.4	1.45	0.06	0.15	0.20	0.17
TL 9 0.0-1.0M		92.7	0.74	<0.01	0.11	0.08	0.05
TL 9 1.0-1.3M		67.0	1.25	<0.01	0.05	0.41	0.17

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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David James

ANALYTICAL REPORT

PAGE 3 of 3

CONTACT: **MR J OLLIVER**
CLIENT: **OLLIVER GEOLOGICAL SERVICES**
ADDRESS: **PO BOX 24
MCLAREN VALE SA 5171**

LABORATORY: **STAFFORD**
BATCH NUMBER: **ST27464**
SUB BATCH: **0**
No. OF SAMPLES: **7**
DATE RECEIVED: **01/09/99**
DATE COMPLETED: **17/09/99**

ORDER No.:

SAMPLE TYPE: **GYPSUM**

PROJECT:

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	+300um % MS326 0.1	+150um % MS326 0.1	+106um % MS326 0.1	+75um % MS326 0.1	-75um % MS326 0.1	
MENINGIE GEMLAKE 27/08/99							
ELEPHANT LAKE WH 27/08/99							
ELEPHANT LAKE AG 27/08/99							
TL 8 0.0-1.0M		9.8	6.8	7.0	4.2	47.2	
TL 8 1.0-2.0M							
TL 9 0.0-1.0M							
TL 9 1.0-1.3M							

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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HINCKS GYPSUM

hgy 006

PERCENT

26 May 1999		ALS Report ST 26661	Gypsum	Salt	Cal. Quartz
H1	Elliott	0 – 1.0m wh to p. grey to br Gypsite to fine gypsarenite with scattered lt br patches	91.3	0.69	4

ANALYTICAL REPORT

PAGE 1 of 1

CONTACT **MR J OLLIVER**
CLIENT **OLLIVER GEOLOGICAL SERVICES**
ADDRESS:
PO BOX 24
MCLAREN VALE SA 5171

LABORATORY: **STAFFORD**
BATCH NUMBER: **ST26661**
SUB BATCH: **0**
No. OF SAMPLES: **11**
DATE RECEIVED: **10/06/99**
DATE COMPLETED: **22/06/99**

ORDER No.:

SAMPLE TYPE **GYPSUM**

PROJECT:

SAMPLE NUMBER	ELEMENT	Ca	SO4 . 2H2O	CaCO3	MgCO3	NaCl	Fe2O3	Al2O3
	UNIT	%	%	%	%	%	%	%
	METHOD	M290	M290	M290	M290	M290	M290	M290
	L.O.R.	0.1	0.01	0.01	0.01	0.01	0.01	0.01
WERRINA W4		94.5	0.06	<0.01	<0.01	0.08	0.28	
WERRINA W5		99.8	<0.01	<0.01	<0.01	0.04	0.14	
WERRINA W6		96.5	<0.01	0.52	2.65	0.05	0.19	
PEAK VIEW PV 1		94.5	1.03	0.11	0.01	0.20	0.54	
PEAK VIEW PV 2		96.6	2.14	0.17	0.07	0.11	0.31	
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TERRA LEEN TL4		90.6	0.35	0.02	0.31	0.08	0.27	

COMMENTS:

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have been checked and
approved for release.

David James

EL 2648 HINCKS

Annual Report for year ended 30 September 2001

El 2648 was granted to Olliver Geological Services Pty Ltd on 1 October 1999, was renewed for a second year and a third year has been requested.

Gypsum sales of 1 325 tonnes were achieved from ML 6076 Terra Leen for the first spreading season in 2001. Marketing has continued to promote the use of gypsum.

On 30 August 2000, a Joint Venture was finalised for Helix Resources NL to explore for metals and diamonds. Several meetings and discussions were held during the twelve months.

Helix will commence field work in October 2001 but on EL 2210 Carapsee.

J G Olliver

PIRSA

C2002/00401



02218946

9722



TENEMENT ADMINISTRATION SERVICES

Melbourne

Unit 31/120 Cambridge Street
Collingwood VIC 3066

Telephone: (03) 9486 9600

Facsimile: (03) 9486 9234

Perth

2/326 Hay Street

East Perth WA 6004

Telephone: (08) 9421 1777

Facsimile: (08) 9421 1331

Brisbane

97 Creek Street

Brisbane QLD 4000

GPO Box 3081

Brisbane QLD 4001

Telephone: (07) 3229 1488

Facsimile: (07) 3229 8816

10 February, 2003

Mineral Resources Group
Primary Industries and Resources SA
GPO Box 1671
ADELAIDE SA 5001

Dear Sir/Madam

**RE: ANNUAL TECHNICAL REPORT
EXPLORATION LICENCE 2648 (EYRE - HINCKS)**

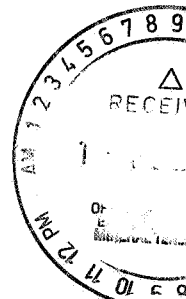
We act as tenement managers to Helix Resources Limited.

Please find enclosed a letter in lieu of the Annual Technical Report for the above tenement for the period 01 October 2001 to 30 September 2002.

Yours faithfully
TENEMENT ADMINISTRATION SERVICES PTY LTD


Paul Jones
MINING TENEMENT MANAGER

enc.



*Change to
GK Report
moved
to GK Place in Envelope
GK & JP
have seen
it.*

cancel

PIRSA

C2003/00196



OUR REF: SUMMARY RPT - PIRSA
FILE REF:
REVISED DATE: 3 APRIL 2002

© COPYRIGHT TAS

\\taswa01\document\tenements\2003-02\letters\hel10-043.doc

Our Ref: SAOG1003 Hincks – Annual Report

Date: 3rd February 2003

Primary Industries & Resources – SA
MINERAL RESOURCES GROUP
PO Box 1671
ADELAIDE SA 5001

Attention: George Kwitko

Dear Sir,

Re: Letter in lieu of Annual Report for EL2648 - Hincks.

No field work has been completed on EL2648 Hincks by Helix during the current reporting period. An application for extension of the license has been lodged.

Field work was planned concurrent with work on EL2858 and 2815, however, due to difficulties encountered in these sampling programs work was postponed until a resolution was reached. It is anticipated that sampling on these tenements will commence early in 2003.

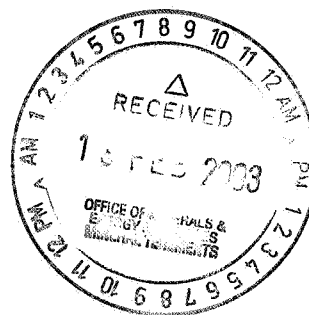
Eyre Peninsula Gypsum (EPG) drilled one hand auger hole to 3m at Eagle Creek Gypsum deposit. The interval from 0.0 to 2.5m averaged 79.6% gypsum which is Grade 2 and saleable.

Expenditure for the year has been limited to tenement administration and background research for a total of \$5,482 with \$1,934 by Helix and \$3,548 by EPG.

Any queries regarding this report should be directed to Mr Tony Martin, Exploration Director or myself at Helix Resources Limited, in Perth on (08) 9321 2644.

Yours sincerely
for Helix Resources Limited

Ben Cairns
Project Geologist



TECHNICAL REPORT FOR TWELVE MONTHS ENDED 30 SEPTEMBER 2003

GOLD

There were no field investigations by Helix Resources.

GYPSUM

Eyre Peninsula Gypsum mined, power-screened and sold 975 tonnes of gypsum from ML 6076 Terra Leen no 1 deposit.

Three samples from the stockpile assayed

	TL1	TL2	TL3	Average
CaSO ₄ .2H ₂ O	75.6	71.1	77.9	74.9
CaCO ₃	0.27	0.38	<0.01	0.22
MgCO ₃	0.08	0.06	0.08	0.08
NaCl	0.23	0.07	0.25	0.18
Al ₂ O ₃	0.38	0.39	0.41	0.39
Fe ₂ O ₃	0.19	0.16	0.22	0.19
Calculated SiO ₂	23	27	21	24

The remnant stockpile at 30 September 2003 contains an estimated 300 tonnes which will be sold in March 2004. The workings on ML 6076 will be battered back and the ground left to the satisfaction of the land owner.

MC 3434 ~~which~~ was pegged over Haybales (Terra Leen no 2 deposit) in September 2003 and application was lodged for Mineral Lease. On grant of lease, operations will transfer here.

J G Olliver



MERFF

R2004/00403





OLLIVER GEOLOGICAL SERVICES PTY LTD

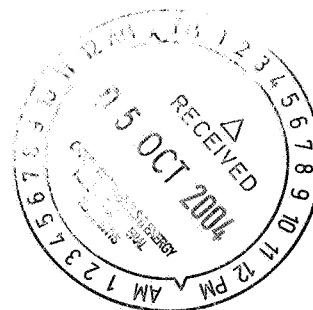
ABN 58 008 201 616

OFFICE — CHALK HILL ROAD McLAREN VALE SA 5171
POST — PO BOX 24 McLAREN VALE SA 5171
TELEPHONE — (08) 8323 8682
FAX — (08) 8323 8633
MOBILE — 0417 849 060
EMAIL — ollgeo@ozemail.com.au

30 September 2004

Ref: hgy 023

Mrs Sue Watson
Deputy Mining Registrar
Mineral Tenements
PIRSA
GPO Box 1671
ADELAIDE SA 5001



Dear Sue

HINCKS GYPSUM

Thank you for your letter 2004/00636 of 11 August 2004.

Prior to expiry of EL 2648 at the end of its five years on 30 September 2004, all ground prospective for gypsum was checked with Terry Traeger and Susan Olliver during 14-17 September 2004. No mineable deposits were discovered. Accordingly, the application for a subsequent licence is hereby withdrawn.

636/04

Refund of the application fee of \$211.00 would be appreciated.

As there are no technical data please accept this letter in lieu of the Annual Report for EL 2648 for the year ended 30 September 2004.

The Summary Report for the Six Months ended 30 September is attached.

Yours Sincerely


Jeff Olliver

