



TORRENS ENERGY LIMITED

Annual Report

Licence Year 1

Geothermal Exploration Licence 501

04 May 2009 to 03 May 2010

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Submitted by: Sophie Damm

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1. Introduction

Geothermal Exploration Licence (GEL) 501 was granted on 04 May 2009 for an initial period of 5 years. The licence is located west of Pt Augusta, South Australia (Figure 1) and covers an area of approximately 494 km².

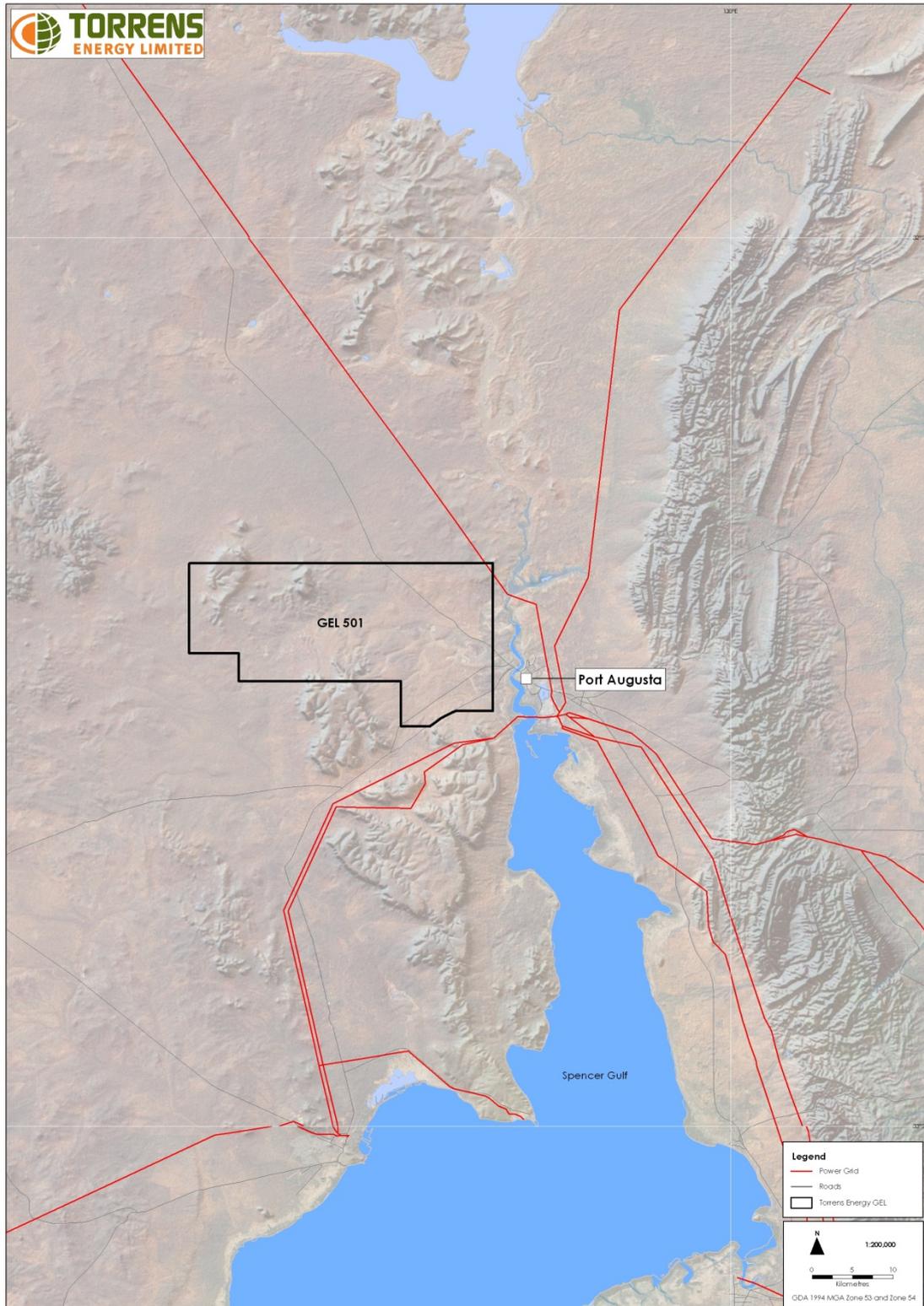


Figure 1: Location map GEL 501.

Table 2 Final work program and work completed (as of end of current reporting period) by licence year

Licence Year	Minimum Work Program	Actual Work
Year 1	<ul style="list-style-type: none"> • Conduct 2D seismic of around 25 line km; and • Geological and geophysical review 	<ul style="list-style-type: none"> • <i>8.5km seismic survey completed within GEL501 as part of Pt Augusta Seismic Survey 09TE-02</i> • <i>3D geological modelling and 3D temperature field modelling</i>

3. Regulated Activities

Regulated activities completed during the reporting period included 1 seismic line of approximately 8.5km within GEL 501 as part of approximately 25 line km Seismic Survey in Pt Augusta Project Area.

Details of the regulated activities are shown below.

3. 1 Seismic Surveys Completed

09TE-02: Port Augusta Seismic Line

The Port Augusta Seismic Survey was completed over 2 days, on the 8th and 9th of May 2009.

The seismic survey was designed as a 25km 2D seismic survey with a primary aim of determining the depth crystalline basement and a secondary aim of resolving specific sedimentary packages between the surface and the crystalline basement.

The survey was conducted on existing station tracks and public roads.

The location of the seismic survey is shown in Figure 2.

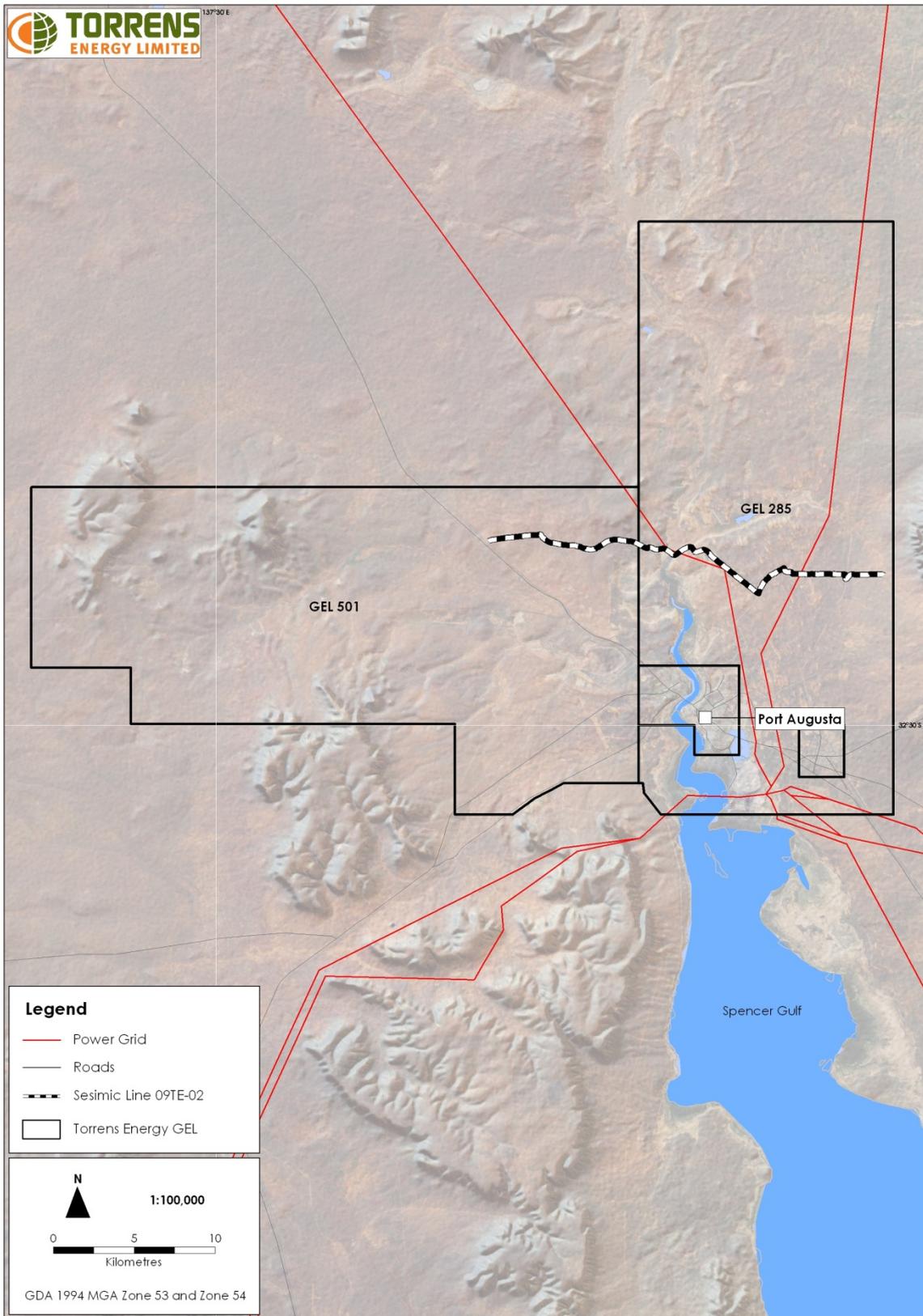


Figure 2: Location of seismic survey 09TE-02.

4. Compliance with the Act, Regulations, Licence Conditions and SEO

4.1. Licence and Regulatory Compliance

Geophysics

Geophysical Progress Reports – Completed

Geophysical Operations Report and Data Reports – Completed

Geophysical Interpretation Report – In Progress

Environmental Audit Report – Completed

The 25 line km seismic work commitment within GEL 501 as outlined in the work programme for Licence Year 1 was not achieved which represents non-compliance with respect to the Act.

The seismic survey was designed as a 25 km line across GEL 501 and GEL 285 (see Figure 2). While approximately 8.5 line km fall within GEL 501, the remaining line km were completed outside of the licence.

As a rectification for this non-compliance Torrens Energy are currently reviewing all work programme commitments across all licenses to streamline activities and ensure compliance.

4.2. SEO Compliance

The environmental objectives identified in the SEO (*SAPEX Arckaringa Basin Geophysical Operations Statement of Environmental Objectives (SAPEX 2007a)*) are subject to an assessment to measure the level of achievement. The assessment criteria for each objective will be one of the following:

- Defined conditions: objectives for activities that can only be managed through the prevention of unacceptable actions
- Defined requirements: the achievement of an objective can be assessed against the implementation of specific procedures or actions required for an activity (e.g. compliance with Australian Standards)
- Goal Attainment Scaling (GAS) Criteria: Objectives requiring visual assessment can be prone to uncertainties of subjective judgement. To minimise this occurring, GAS is used to measure such objectives against a series of criteria described by a written description and/or photographically. A score of +1, +2 would show that there has been minimal to no impact on the environment.

Table 3 shows the results of the audit against the objectives and the assessment criteria.

Table 3 Assessment of Port Augusta Seismic Survey against the SEO

The columns containing the requirements of the SEO: SAPEX *Arckaringa Basin Geophysical Operations Statement of Environmental Objectives* (SAPEX 2007a) are shown in grey.

Environmental Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved	Key Risks / Management Strategy / Comment	Outcome Achieved (Y?N) or Gas score
1. Avoid disturbance to sites of cultural and heritage significance	<p>A cultural heritage survey (or Work Area Clearance – WAC) has been undertaken of the proposed survey line locations and access tracks prior to commencement of survey.</p> <p>No disturbance to sites of Aboriginal or non-indigenous heritage significance</p>	<p>Any sites identified have been flagged and subsequently avoided.</p> <p>A procedure is in place for the appropriate response to any sites discovered during survey operations.</p> <p>Documents and/or reports of scouting for cultural/heritage are available for review.</p> <p>Reports of any accidental discoveries during the survey are available for review.</p> <p>Appropriate reports have been forwarded to Aboriginal Heritage Branch in compliance with the <i>Aboriginal Heritage Act</i>.</p>	<p>A clearance has been carried out with the native title groups.</p> <p>Sites of natural heritage significance (fossil sites) will be avoided.</p>	Y
2. Minimise disturbance to native vegetation and native fauna	<p><u>Campsite and survey line preparation</u></p> <p>The attainment of either 0, +1 or +2 GAS criteria for 'Impact on vegetation' objective listed in Appendix 2.</p> <p>No mature trees are removed.</p> <p>No off-line or off-access driving.</p> <p><u>Fuel and Chemical Storage and Management</u></p> <p>No spills/leaks outside areas designed to contain them.</p> <p>Appropriate spill response equipment is available on site.</p> <p><u>Fire Danger Season restrictions and education</u></p> <p>Appropriate fire fighting equipment is readily available.</p> <p>Appropriate personnel are readily available and suitably informed to action response.</p> <p><u>Waste Management</u></p>	<p><u>Campsite and survey line preparation</u></p> <p>Terrain and vegetation is considered in planning stage when designing layout of the survey.</p> <p>Appropriately trained and experienced personnel have scouted proposed survey lines access tracks and campsites.</p> <p>Documents and/or reports of scouting for flora/fauna are available for review.</p> <p>Vehicle access to survey lines is to be via existing access tracks or pre-existing survey lines, except where they have rehabilitated. Other temporary access tracks may be utilised where such use is likely to result in less environmental impact than other options.</p> <p>Vegetation clearance has been minimised and the conservation needs of specific species have been considered.</p> <p>Campsites are established in locations where the preparation of a new access track is not necessary.</p> <p><u>Fuel and Chemical Storage and Management</u></p> <p>No refuelling outside</p>	<p>No survey line clearance will be required due to use of existing tracks and roads. .</p> <p>If refuelling is carried out it will be at a designated site with appropriate spill response equipment available.</p> <p>Fire risk is low due to sparse vegetation and use of existing roads / tracks.</p>	<p>+2</p> <p>Y</p> <p>Y</p>

Environmental Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved	Key Risks / Management Strategy / Comment	Outcome Achieved (Y?N) or Gas score
	Refer Objective 9.	designated refuelling/servicing areas. Spills or leaks are immediately reported and clean up actions initiated. Records of spill events and corrective actions are maintained. <u>Fire Danger Season restrictions and education</u> Fire Season education included in induction. All personnel are fully informed on the fire danger season and associated restrictions.		
3. Avoid the introduction or spread of exotic species and implement control measures as necessary	Weeds or feral animals are not introduced into, or spread, in operational areas.	All vehicles and equipment appropriately cleaned prior to entering the Arckaringa Basin Vehicles and equipment are to be cleaned when moving from areas within the Arckaringa Basin where weeds are present. Cleaning to be carried out in accordance with best practice guidelines. Records of vehicle and equipment cleaning are kept and available for review. Records of detection, monitoring or eradication of exotic weed or other pest or noxious species introduced by industry activities are kept and are available for review.	Weed risk is low due to use of existing roads and tracks. Vehicles and equipment will be cleaned prior to coming to site if they have significant amounts of mud or plant material or have come from an area of known weed infestation.	Y
4. Minimise disturbance and avoid contamination to soil resources	<u>Campsite and survey line preparation</u> Attainment of 0, +1 or +2 GAS criteria for 'Disturbance to land surface' objective, as listed in Appendix 2. <u>Fuel and Chemical Storage and Management</u> No spills/leaks outside areas designed to contain them. Appropriate spill response equipment is available on site. <u>Waste Management</u> Refer to Objective 9.	<u>Campsite and survey line preparation</u> Pre-survey planning has been undertaken to minimise impacts of operations and records are available for review. Proposed survey lines and campsites have been appropriately located and prepared to minimise the disturbance to soil resources. Survey line preparation techniques are monitored and documented to minimise soil disturbance, particularly in sensitive terrain (e.g. gibber, breakaways). Where applicable, side cuts on dune flanks and dune crests are minimised. Stony mantle has not been removed in gibber and tableland land	Soil disturbance is minimal due to use of existing roads and tracks and previously used drilling site for the camp. The campsite will be lightly ripped if soil compaction is evident on completion of the survey. (Note this is not likely given the short length of the survey).	+2 Y

Environmental Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved	Key Risks / Management Strategy / Comment	Outcome Achieved (Y?N) or Gas score
		<p>systems.</p> <p>Stony surface is not ripped at campsites.</p> <p>There is no evidence of off-road driving or creation of shortcuts.</p> <p>No survey line or access track preparation is carried out on salt lakes or wetlands unless specific management measures have been developed in accordance with relevant authorities.</p> <p>Areas subject to inundation have been assessed for conduciveness to support vehicles.</p> <p><u>Fuel and Chemical Storage and Management</u></p> <p>No refuelling outside designated refuelling/servicing areas.</p> <p>Spills or leaks are immediately reported and clean up actions initiated.</p> <p>Records of spill events and corrective actions are maintained.</p> <p>Oil spill areas have been ripped to an appropriate depth.</p>		

Environmental Objective	Assessment Criteria	Guide to How Objectives Can Be Achieved	Key Risks / Management Strategy / Comment	Outcome Achieved (Y?N) or Gas score
<p>5. Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow groundwater resources</p>	<p><u>Campsite and survey line preparation</u> The attainment of 0, +1 or +2 GAS criteria for 'disturbance to land surface' objective listed in Appendix 2. No uncontrolled flows to surface from aquifers intersected in upholes/shallow boreholes. There is no unnecessary interference with natural drainage features. <u>Fuel and Chemical Storage and Management</u> No spills occur outside of areas designed to contain them. Appropriate spill response equipment is available on site.</p>	<p>All access through watercourses area carefully assessed to determine the locations of least impact to channels and creek banks. Any artesian flows are to be immediately plugged and monitored to ensure effectiveness of plug(s). Any required remediation work carried out as soon as possible after completion of all activities. <u>Campsite and survey line preparation</u> Campsites and survey lines/traverses are located and constructed to avoid diversion of water flows. <u>Fuel and Chemical Storage and Management</u> No refuelling outside designated refuelling/servicing areas. Refuelling occurs at least 1km from watercourses or sensitive ecological environments (wetlands). Spills or leaks are immediately reported and clean up actions initiated promptly. Records of spill events and corrective actions are maintained.</p>	<p>Risks to surface waters are low due to short length of survey and use of existing tracks and roads. Drainage systems crossed by the survey routes would only be expected to flow intermittently following local rain or heavy falls in the nearby ranges. Removal of vegetation on creek banks will be minimised. Windrows or other forms of disturbance to drainage patterns will be removed from creek crossings to minimise soil erosion and alteration of surface flows. Vibroseis trucks will not be operated at full intensity immediately adjacent to water bores. Refuelling will not be carried out near watercourses. Fuel and chemical storage and handling will be carried out to a high standard, with appropriate storage and bunding to minimise the risk of land and water contamination. Spill kits will be held on site.</p>	<p>+2 Y</p>
<p>6. Minimise risks to the safety of the public, employees and other third parties</p>	<p>No injuries to the public or third parties as a result of seismic activities.</p>	<p>Compliance with relevant speed restrictions on roads and tracks. Signage in place to warn of presence of seismic vehicles when activities undertaken in areas with public access (e.g. along public roads) Control production and dispersion of dust on unsealed roads. Liaison / consultation with relevant public road managers where seismic activities are concentrated on public roads. Third party use of seismic lines discouraged by measures under Objective 8 "Minimise the visual impact of operations"</p>	<p>The main risk to the safety of the public, employees and third parties is associated with the presence of slow-moving survey vehicles and the localised increase in traffic. Traffic management will be implemented for the road and rail crossings. Depending on the level of risk assessed on site, warning signs will be erected to warn of survey vehicle movements ahead on the public roads. Vehicles will travel at appropriately slow speeds to minimise dust nuisance.</p>	<p>Y</p>

4.3. Management system audits

No Management System Audits were undertaken during Year One.

5. Reports and data generated during the reporting period

Reports and data generated by Torrens Energy Limited under the Act and submitted to PIRSA are show below:

Title	Compliance status	Date due	Date submitted
Geophysical Progress Report	Compliant	May 2009	May 2009
Geophysical Operations and Data Report	Compliant	8 th May 2010	January 2010
Environmental Audit Report	Non-compliant	January 2010	30 July 2010
Annual Report GEL 501 (this report)	Non-compliant	3 rd July 2010	30 July 2010
Geophysical Interpretation Report -Pending-			

The submission due date of this report is July 3rd 2010. The report is therefore overdue, and this represents non-compliance with respect to the Act. Torrens Energy have since then reviewed Section 33 of the Petroleum and Geothermal Regulations 2000 and are now fully aware of the strict requirements for the submission of annual reports. A system for monitoring of reporting due dates has been instigated, such that due dates are not missed.

6. Incidents

No reportable incidents occurred during Year One.

7. Threats

No threats to activities under the licences have been identified.

8. Proposed work program for Licence Year 2

Work planned on GEL 501 for the ensuing Licence Year 2 includes geological and geophysical review.