



PEL 118 & 119

Arckaringa Basin

South Australia

Year 4

Combined Annual Report

For the Period

3 October 2009 to 31 December 2012

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1. Introduction

Petroleum Exploration Licences (PEL's) 118 and 119 'Arckaringa Basin', cover an area of 17,151km² and lie within the Arckaringa Basin, surrounding Coober Pedy, South Australia. This report describes activities conducted during Licence Year 4 (3 October 2009 – 31 December 2012 inclusive), in accordance with Regulation 33 of the Petroleum and Geothermal Act 2000.

2. Licence Summary

PEL's 118 and 119 were awarded to SAPEX which currently maintains a 100% interest in all licenses.

In late October 2008 SAPEX Limited merged with Linc Energy Ltd. Following the merger and changes to company structure, ongoing review of target areas in the Arckaringa Basin continues to be a priority.

The original work commitments associated with the awarding of PEL's 118 and 119 are indicated in Table 1.

Table 1: Original Work Commitments by Licence year

PEL 118 Original work commitments

Year of Licence	Minimum Work Requirements
One	Geological and Geophysical Studies
Two	Geological and Geophysical Studies
Three	Drill one well
Four	Geological and Geophysical Studies
Five	Geological and Geophysical Studies

PEL 119 Original work commitments

Year of Licence	Minimum Work Requirements
One	Geological and Geophysical Studies
Two	Geological and Geophysical Studies
Three	Drill one well
Four	Geological and Geophysical Studies
Five	Geological and Geophysical Studies

- On 12 June 2008 SAPEX signed a merger agreement with Linc Energy under which Linc Energy proposed to acquire all of SAPEX's shares, affected by schemes of arrangement which were implemented on 15 October 2008.
- As a result of the merger some of the work commitments for Year 2 were deferred to Year 3. An application for a variation to the work programs dated 19 December 2008 was submitted to PIRSA and approved.

- Activity approval for a drilling program within the Arckaringa Basin was given on 28 August 2009.
- During the notification and approval process of on ground preparations for the nine (9) hole drilling program in the Arckaringa Basin, factors arose causing schedule and planning delays and attributed to the work program extending beyond the commitment of Year 3, these included:
 - The merger of SAPEX and Linc Energy at the start of the Year 3 program and subsequent change in resource appraisal process (from conventional petroleum to underground coal gasification) resulting in new prospect generation.
 - Unexpected delays in communications with the Department of Defence in terms of entry into PEL's 119, 123 and 124. Delays associated with these communications are estimated at four (4) to six (6) weeks.
 - Notice of Entry negotiations with overlapping Exploration Licence holders during activity approvals process delayed scheduling of program details and proposed well locations.
- In August 2009, Linc commenced a 14 well exploration program, covering all PEL's 117, 118, 119, 120, 121, 122 & 123 within both the Walloway Basin and Arckaringa Basin.
 - The program in the Arckaringa Basin followed on from a five (5) well drilling program within PEL 120, Walloway Basin.
 - Due to the delays in the notification and approval process as outlined earlier and general drilling delays of the Walloway program, it was determined that the Arckaringa Basin drilling program would not be completed before 2 October 2009, therefore resulting in the program encroaching into the first quarter of Year 4. Linc Energy made an application to PIRSA for Year 3 commitments to be rolled into the first quarter of Year 4.
 - PIRSA approved a suspension of the Year 3 work commitments for PEL 117, 118, 119, 121, 122 & 123 for a period of 12 months and requisite that both Year 3 and Year 4 commitments of each licence be undertaken by 2 October 2010, with the expiry of all the licences unchanged at 2 October 2011.
- Due to several months of pursuing a Deed of Access agreement from the Department of Defense (DoD) to enter the Woomera Prohibited Area (WPA), SAPEX sought a Suspension under section 90 with PIRSA to Suspend PEL's 118 and 119 for 12 months, Year 4 (19 January 2010 – 18 January 2011) until such time entry could be obtained.

- Application for a suspension on PEL 118 and PEL 119 was approved for a further 12 month period from 19 January 2011 – 18 January 2012.
- SAPEX signed a 6 month Deed of Access agreement with the Commonwealth of Australia 11 January 2011, allowing entry to conduct exploration subject to terms as set out in the agreement.
- Application for a suspension on PEL 118 and PEL 119 was approved for a further 3 month period from 19 January 2012 – 18 April 2012.

The following table displays the minimum work program and the actual work completed up and to the end of licence Year 4.

Table 2: Minimum work program and actual work completed - Year 4

PEL	Minimum Work Program - Year 4	Actual Work Carried Out
PEL 118	Drill One Well Geology and Geophysical Studies	One(1) Well Geology and Geophysical Studies
PEL 119	Drill One Well Geology and Geophysical Studies	One(1) Well Geology and Geophysical Studies

3. Regulated Activities

Regulation 33 (2) (a):

Regulated activities conducted

- Environmental Impact Reports (EIR) and Statement of Environmental Objectives (SEO) for Exploration Drilling Activities were officially gazetted on the 8th November 2007 and remain current documents for future on ground activities
- Notice of Entry' letters were sent to landholders for on ground exploration and drilling activities. Linc Energy utilised "consultation manger" a secure database designed to record all correspondence and contact with landowners post and during ground activities.
- Activity notification and approvals for high level official supervision for proposed commencement of on ground exploration activities and drilling of nine (9) wells in the Arckaringa Basin.
- From the commencement of on ground exploration and drilling activities of the 2 wells, submissions of daily drilling reports, daily geological reports, wireline logs and down hole diagrams were submitted to PRISA as per regulatory requirements.
- A Well Completion Report for each well, in accordance with Regulation 40 of the Petroleum and Geothermal Regulations was submitted to PIRSA.
- Technical re-processing and quality control of archive seismic data covering PELs 117, 118, 119, 121, 122, 123 & 124 was completed in early 2011.

Table 3: Wells drilled in Year 4

PEL	Well	Latitude	Longitude	GL (mSS)	Spud Date	Rig Release Date	Depth (mGL)
118	Nuba 1	28° 54' 43.62" S	134° 21' 36.84" E	201.80	3/10/09	7/10/09	215.70
119	Howard Hill 1	29° 20' 4.16" S	134° 37' 16.04" E	147.08	9/10/09	15/10/09	248.80

4. Compliance Issues

Regulation 33 (2) (b) (c):

Compliance with the Act, Regulations, Licence conditions and relevant statement of environmental objectives, Actions to rectify non compliance

Licence Compliance

- Work commitments for Year 4 on PEL 118 and PEL 119 were to drill one well and undertake Geological and Geophysical studies in accordance with condition 1, this was achieved.
- As part of Linc Energy’s environmental management system, site procedures were established in order to achieve the requirements of the Statement of Environmental Objectives (SEO) for both;
 - Exploration Drilling Activities and Geophysical Operations.
 - These procedures were followed throughout the drilling and seismic program and regularly checked by the project geologist and company representative. No issues of non-compliance were identified.

Licence Non-Compliance

There is no Licence Non-Compliance for the current reporting year

Regulatory Compliance

- Activity notification for high level official supervision activity was submitted for the drilling of wells, Arckaringa Basin.
- Completion of 2 well; Nuba 1 and Howard Hill 1 as listed in **Table 3**.
- From the commencement of the drilling, submissions of daily drilling reports, geological reports, wire line logs and down hole diagrams and well completion reports were submitted to PRISA as per regulatory requirements.
- A well completion report for each well, in accordance with Regulation 40 of the Petroleum and Geothermal Regulations was submitted to PIRSA, see Table 5 showing all regulatory data submissions and dates.
- Reporting of incidents in accordance with the SEO was undertaken as per regulatory requirements.

Regulatory Non-Compliance

There is Regulatory Non-Compliance for the current reporting year.

In order to prevent this from occurring again in the future SAPEX has introduced and implemented the following changes to the PELs reporting:

1. Prior to submission to DMITRE all reports must be reviewed and checked by exploration manager or senior geoscientist
2. Tenements data base must be visited and updated on weekly basis

Table 4: Compliance with Petroleum and Geothermal Energy Regulations

Well	Title	Regulation	Due Date	Completed Date	Compliant
PEL 118 – Nuba 1	Daily Drilling and other drilling Reports	Reg 38	2/10/2009 - 7/10/2009	Daily during drilling operations	Yes
PEL 119 – Howard Hill 1	Daily Drilling and other drilling Reports	Reg 38	8/10/2009 - 15/10/2009	Daily during drilling operations	Yes
PEL 118 – Nuba 1	Wireline Logs	Reg 39	07/10/2009	28/06/2010	No
PEL 119 – Howard Hill 1	Wireline Logs	Reg 39	14/10/2009	10/06/2010	No
PEL 118 – Nuba 1	Drilling Downhole Diagram	Reg 44	6/12/2009	2/12/2009	Yes
PEL 119 – Howard Hill 1	Drilling Downhole Diagram	Reg 44	14/12/2009	10/12/2009	Yes
PEL 118 – Nuba 1	Well Completion Report	Reg 40	6/4/2010	6/4/2010	Yes
PEL 119 – Howard Hill 1	Well Completion Report	Reg 40	14/4/2010	14/4/2010	Yes
PEL 118 – Nuba 1	Well sample submission	Reg 48	6/4/2010	19/4/2010	Yes
PEL 119 – Howard Hill 1	Well sample submission	Reg 48	14/4/2010	19/4/2010	Yes

General Reporting	Regulation	Due Date	Completed Date	Compliant
3 Quarterly Cased Hole Activity Report July-September 09	Reg 41	30/11/2009	26/11/2009	Yes
Year 3 - Annual Report Combined PEL 117, 118, 119, 121, 122 & 123	Reg 33	2/12/2009	1/12/2009	Yes
4 Quarterly Cased Hole Activity Report October-December 09	Reg 41	28/1/2010	28/1/2010	Yes
1 Quarterly Cased Hole Activity Report January-March 10	Reg 41	30/4/2010	30/4/2010	Yes
2 Quarterly Cased Hole Activity Report April-June 10	Reg 41	30/7/2010	31/7/2010	Yes
3 Quarterly Cased Hole Activity Report July-September 10	Reg 41	31/10/2010	1/11/2010	Yes
4 Quarterly Cased Hole Activity Report October-December 10	Reg 41	31/1/2011	27/1/2011	Yes
1 Quarterly Cased Hole Activity Report January-March 11	Reg 41	30/4/2011	21/4/2011	Yes
2 Quarterly Cased Hole Activity Report April-June 11	Reg 41	31/7/2011	25/7/2011	Yes
3 Quarterly Cased Hole Activity Report July-September 11	Reg 41	31/10/2011	18/10/2011	Yes
4 Quarterly Cased Hole Activity Report October-December 11	Reg 41	31/1/2012	23/1/2012	Yes
1 Quarterly Cased Hole Activity Report January-March 12	Reg 41	30/4/2012	27/4/2012	Yes
2 Quarterly Cased Hole Activity Report April-June 12	Reg 41	31/7/2012	30/7/2012	Yes
3 Quarterly Cased Hole Activity Report July-September 12	Reg 41	31/10/2012	31/10/2012	Yes

Table 6: Compliance with Statement of Environmental Objectives

The drilling activities undertaken during this reporting period and all field assessments undertaken for the notification and activities approval process were carried out in accordance to the objectives of the Statement of Environmental Objectives (SEO) for Exploration Drilling Activities, as detailed in Table 6 below.

Objective	Assessment Criteria	Compliant/Non-Compliant	Comments
1. Avoid disturbance to sites of cultural and heritage significance	No impact to sites of Aboriginal or non – indigenous heritage significance without approval under the Aboriginal Heritage Act 1988 and Heritage Places Act 1993	Compliant / Achieved	Work Area Clearances (WACs) with the relevant native title group have been carried out. Activities were confined to the areas cleared by the WAC’s
2. Minimise disturbance to native vegetation and native fauna	Any sites of rare, vulnerable and endangered flora and fauna have been identified, flagged and subsequently avoided. Significant remnant vegetation has not been cleared without specific consultation with PIRSA, Native Vegetation Council and DEH prior to activity approval. The attainment of either 0, +1 or +2 GAS criteria for ‘Minimise disturbance to native vegetation’ objective for well site construction . The attainment of 0, +1 or +2 GAS criteria for “Re-establish native vegetation on abandoned well sites and access tracks” No fires during drilling activities. Fuel and Chemical Storage and Handling Waste Management	Compliant / Achieved	Assessments indicated that significant (or rare or threatened) flora and fauna are not present or likely to occur at the sites. Vegetation clearance was minimised and the clearance of long-lived/significant species avoided, in accordance with standard procedures. Previously disturbed areas were selected for the drilling sites. Access tracks and drilling sites have been rehabilitated and remediated according to industry standards (e.g. as outlined in the EIR (Section 6) and the SEO). Rehabilitation signoff has been finalised. The storage, use and disposal of hazardous material were in accordance with legislative requirements. Fire risk formed part of the onsite induction and fire fighting equipment appropriate to the site and seasonal conditions was present. Sparse vegetation poses minimal fire risk.

<p>3. Prevent the introduction or spread of exotic species and implement control measures as necessary</p>	<p>Weeds are not introduced into, or spread in, operational areas as a consequence of activities</p>	<p>Compliant / Achieved</p>	<p>Landholders were consulted regarding weed management.</p> <p>Equipment brought to site was free of soil or weed material. Any equipment that had been operating outside the Walloway Basin or in an area of weed infestation was thoroughly inspected and washed down before going to site.</p> <p>Good housekeeping practices were followed to discourage pest animal species.</p>
<p>4. Minimise disturbance and contamination to soil resources</p>	<p>The attainment of 0, +1 or +2 GAS criteria for 'Minimise impacts to soil' No construction activities are carried out on salt lakes, steep slopes or in areas of boggy coastal soils.</p> <p>No soil contamination as a result of drilling activities.</p> <p>Fuel and Chemical Storage and Handling - Soil in areas affected by any spill is removed and/or bio-remediated.</p> <p>No soil contamination as a result of fuel and chemical storage and handling.</p> <p>Waste Management</p>	<p>Compliant / Achieved</p>	<p>The area utilised for drilling was restricted to the smallest practicable.</p> <p>Unnecessary/unauthorised off-road driving or creation shortcuts were avoided.</p> <p>No sensitive land systems (salt lakes, steep slopes or boggy coastal areas) were present.</p> <p>Topsoil from the sump was stockpiled separately and respread on reinstatement.</p> <p>Areas of compaction ripped where appropriate in accordance with industry standards (e.g. EIR (Section 6) and SEO).</p> <p>Drilling muds were water-based and low- or non-toxic. Ground water and associated drilling mud/fluids contained within designated sumps.</p> <p>Bunding and/or polythene lining for fuel and chemical storage, refuelling etc were adequate to contain spills and meet legislative requirements (e.g. EPA guidelines). Drip trays used for refuelling and underneath any parts of the rig that may pose a potential leak or spill hazard. Appropriate spill response equipment was maintained on site.</p> <p>Linc and/or contractor procedures covered spill response. Material Safety Data Sheet (MSDS) information was readily available on site.</p>

<p>5. Minimise loss of reservoir and aquifer pressures and avoid aquifer contamination</p>	<p>No aquifer contamination as a result of drilling, completion or production testing activities.</p> <p>No uncontrolled flow to surface (i.e. blow out). Sufficient barriers exist in casing annulus to prevent crossflow between separate aquifers or hydrocarbon reservoirs.</p> <p>Activities No crossflow behind casing between aquifers, and between aquifers and hydrocarbon reservoirs unless approved by the Department of Water, Land and Biodiversity Conservation.</p>		<p>Hole casing, cementing and abandonment in accordance with SEO requirements.</p> <p>A properly balanced mud system was utilised and monitored.</p> <p>On completion of drilling the following occurred:</p> <ul style="list-style-type: none"> • Cement back to surface. • Cut well head 0.5m below ground.
<p>6. Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow groundwater resources</p>	<p>Well sites and access tracks are located to maintain pre-existing water flows (i.e. channel contours are maintained on floodplains and at creek crossings). The attainment of 0, +1 or +2 GAS criteria for 'Minimise disturbance to drainage patterns'</p> <p>No contamination of surface waters and shallow groundwater resources as a result of drilling activities.</p> <p>No contamination of surface waters and shallow groundwater resources as a result of fuel or chemical storage and handling.</p> <p>Waste Management</p>	<p>Compliant / Achieved</p>	<p>Drainage at sites mostly local; interception of flows by drill sites will be minor to negligible.</p> <p>Sump adequately sized to prevent overflow.</p> <p>Surface water flow directed away from sump. Release of groundwater and drill mud beyond the designated drilling area avoided. Sumps backfilled with at least 0.5m cover.</p> <p>Bunding and/or polythene lining for fuel and chemical storage, refuelling etc adequate to contain spills and meet legislative requirements (e.g. EPA guidelines).</p> <p>Drill rig generators and fuel tanks appropriately banded (e.g. located in polythene lined banded areas) to contain any oil spills.</p> <p>Fuel tanks and delivery systems regularly inspected by Linc Drilling Supervisor and rejected if found unsuitable.</p> <p>The storage, use and disposal of hazardous material was undertaken in accordance with legislative requirements. Material Safety Data Sheet (MSDS) information will be readily available on site.</p>

<p>7. 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 drilling, completion and initial production testing activities</p>	<p>Compliant / Achieved</p>	<p>Health and Safety plans, Drilling Program, Emergency Response Plan developed and implemented by Linc and its contractors in accordance with legislative requirements, SEO and industry standards (e.g. as outlined in the EIR (Section 6).</p> <p>All employees undertook a safety induction prior to commencing work in the field. Warning signage (and fencing if necessary) erected to deter unauthorised third party access.</p> <p>The public was not permitted to access to the drill sites.</p> <p>Rig moves and significant transportation events were communicated to affected parties.</p> <p>Fire prevention equipment, inductions and emergency response plans were in place. Fire risk formed part of the onsite induction and fire fighting equipment appropriate to the site and seasonal conditions was present. Sparse vegetation poses minimal fire risk.</p> <p>The sump and any other hazards were fenced following drilling to minimise public safety risks.</p> <p>Site rehabilitation works were in accordance with the SEO and EIR (Section 6).</p>
<p>8. Minimise disturbance to stakeholders and associated infrastructure</p>	<p>No adverse impact (outside agreed disturbance/compensation areas) on livestock or crops as a result of activities. No reasonable concerns raised by stakeholders are left unresolved.</p>	<p>Compliant / Achieved</p>	<p>Landholders have been consulted regarding the drilling and any issues raised were incorporated into the planning of the drilling program.</p> <p>Formal notices of entry were issued to landholders. Close consultation was maintained with landholders regarding issues such as stock management and use of tracks and water bores, to ensure that drilling activities are undertaken in a way that minimises disruption.</p> <p>Drill sites were located away from houses, bores and yards. Vehicles driven at appropriately slow speeds to avoid undue disturbance.</p> <p>During site restoration, suitable fencing was erected to isolate the sump. The sites were restored according to industry standards (e.g. as outlined in the EIR (Section 6) and SEO). No reasonable stakeholder concerns / complaints were left unresolved.</p>

9. Minimise the visual impact of operations	The attainment of 0, +1 or +2 GAS criteria for 'Minimise visual impact' objective for wellsite restoration listed in Appendix 2.	Compliant / Achieved	Previously disturbed areas were selected for drilling, which minimised the visual impacts. Minimal vegetation clearance and earthworks were required for site and access preparation. Rehabilitation signoff has been finalised. Sites were ripped where compaction was evident. Sumps backfilled when dry, surface contours restored and stockpiled topsoil respread over the sump area.
10. Minimise the impact on the environment of waste storage, handling and disposal	No soil, surface water or ground water contamination as storage and disposal a result of waste All wastes have been disposed of at an EPA licensed facility with the exception of drilling fluids, drill cuttings and other fluids disposed during well clean-up. The attainment of 0, +1 or +2 GAS criteria for 'Site to be left in a clean, tidy and safe condition'	Compliant / Achieved	Covered bins were available on site for the capture of all solid waste materials and waste securely transported to an approved disposal facility. Portable, self-contained toilet facilities were located on site, and sewage transported off site and disposed in accordance with Health Department regulations. Litter cleaned up during and post drilling. Drill cuttings/chippings and muds disposed of in drill sump. Rehabilitation signoff has been finalised.
11. Remediate and rehabilitate operational areas to agreed standards	The attainment of 0, +1 or +2 GAS criteria for 'Minimise visual impact', 'Re-establish native vegetation on abandoned wellsites and access tracks' where the revegetation of native species is required and 'Site to be left in a clean, tidy and safe condition' objectives listed in Appendix 2	Compliant / Achieved	Access tracks and drilling sites rehabilitated and remediated according to industry standards and SEO requirements. Refer also to Objectives 2, 4, 5, 6, 7, 8, 9, 10. Linc EMS procedures address quality of rehabilitation prior to contractor sign-off. Rehabilitation signoff has been finalised.

Regulation 33 (2) (d):

Management System Audits

No management system audits were undertaken during the term.

Regulation 33 (2) (e):

Reports generated during the Licence year

Archimedes Consulting Pty Ltd (April 2010). Interpretation of Magnetic and Gravity Data, Arckaringa Basin, South Australia.					
Due Date	N/A	Date Submitted	30 January 2013	Compliant	
SAPEX Ltd / Linc Energy Ltd, (2009). Combined Annual Report PEL 117, 118, 119, 121, 122, 123 Arckaringa Basin South Australia for the Period 3 October 2008 to 2 October 2009.					
Due Date	2 December 2009	Date Submitted	1 December 2009	Compliant	Yes
McGee Associates and Daybro Geophysical, (2011). Linc 2010 Reprocessing Program Interpretation Report PELs 117, 118, 119, 121, 122, 123 & 124 Arckaringa Basin South Australia.					
Due Date	21 December 2011	Date Submitted	29 March 2011	Compliant	Yes
McGee Associates and Daybro Geophysical, (2011). Linc 2010 Reprocessing Program Processing Report PELs 117, 118, 119, 121, 122, 123 & 124 Arckaringa Basin South Australia.					
Due Date	21 December 2011	Date Submitted	29 March 2011	Compliant	Yes
SAPEX Ltd / Linc Energy Ltd, (May 2012). Geochemical Analyses on Core and Cuttings Samples from the Stuart Range Formation Report PELs 118, 119, 121, 123.					
Due Date	16 May 2012	Date Submitted	14 May 2012	Compliant	Yes

Regulation 33 (2) (f):

Incidents reported to the Minister under the Act

- No reportable incidents occurred during this reporting period.

Regulation 33 (2) (g):

Foreseeable threats that present a hazard to facilities or activities

- No facilities in licence areas.
- No threats to activities which are not already covered in the relevant EIR's for exploration drilling.

Regulation 33 (2) (h):

Operations proposed for Year 5

Table 4: Petroleum Exploration Licence planned work program – Licence Year 5

Licence	Planned Work Program (Year 5)
PEL 118	Geological and Geophysical Studies
PEL 119	Geological and Geophysical Studies

5. Expenditure Statement

Regulation 33 (3):

An annual report must be accompanied by a statement of expenditure on regulated activities conducted under the Licence for the relevant licence year, showing expenditure under each of the following headings:

- (a) drilling activities;*
- (b) seismic activities;*
- (c) technical evaluation and analysis;*
- (d) other surveys;*
- (e) facility construction and modification;*
- (f) operating and administration expenses.*

Please refer to Appendix 1 for the Expenditure Statement for the current reporting period.