Bridgeport ENERGY
A New Hope Group company

Scientific and Technical Survey Report

09 September 2014 — 08 September 2015

ATPs 794, 944 and 948

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This Technical Report for Aerial Surveillance of ATPs 794, 944 and 948 is issued by authority of Bridgeport Energy (Qld) Pty. Ltd, under the authority of the Bridgeport Explorations Manager.

9 May 2016

CAMERON FINK EXPLORATION MANAGER

DATE

1. INTRODUCTION

Bridgeport Energy as operator of the licences ATPs 794 (Barcoo and Barcoo Junction blocks), 944 and 948 are required to produce a Scientific and Technical Survey Report to be submitted to the DNRM 12 months after a scientific technical survey's completion. This Report describes the physical, environmental and socio economic impacts on blocks within the ATPs 794,948 and 944 of the Fly-Over Audio Electro Magnetic Passive Transient Impulse (AEM-PTP) scientific and technical survey. The AEM-PTP survey was conducted over the three tenements in Cooper Eromanga Basin between November and December 2014.

This report is an integral aspect of ongoing lease compliance and environmental management of operations within the Authority To Prospect (ATP) areas. For the duration of the licence years, the licensee for ATPs 794, 944 and 948 was Bridgeport Energy (Qld) Pty.

2. PERMIT SUMMARY

The AEM-PTP Technical Survey was undertaken utilizing a fixed wing single engine aircraft which flew over the three ATPs – 794, 948 and 944 with a total fight path of over 5,000 kms. Bridgeport Energy acquired these tenements from Arrow in 2013 with various levels of interest in each tenement. These are outlined in Table 1 below.

2.1 History of previous survey work

The three tenements have had various exploration surveys conducted on the blocks prior and during Bridgeport's operatorship. Bridgeport Exploratory efforts are outlined in Table 1 below.

Table 1- History of previous survey work

TENEMENT NUMBER	DATE TENEMENT GRANTED	WORK UNDERTAKEN	DATE
ATP 794 B	31/11/2005 expires 31-Oct-17 Bridgeport has 65% interest and Senex 35%	A-P 794P, Barcoo Ethel seismic survey, final report	22/06/2014
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ATP 794 BJ	ATP 794P BJ Bridgeport 88% and Senex 12%	Barcoo Junction 3D Seismic November 2015	Seismic Acquisition report Due July 2016
ATP 948	20-May-14 expires 31-May-20 Bridgeport 100%	No previous work undertaken by Bridgeport	
ATP 944	31/10/2005 expires 31-Oct-17 Bridgeport 100%	No previous work undertaken by Bridgeport	

Further detailed Work Program of the AEM-PTP surveying is available in Table 2 below. This passive monitoring via light aircraft was conducted over the three petroleum exploration tenements in the Cooper Eromanga Basin. Reconnaissance flights have taken place in the Barcoo, Quilpie, & Longreach Council Districts across ATPs 948, 944 and 794.

The objective of the AEM-PTP survey is to detect transients of secondary electromagnetic fields associated with upward fluid flow associated with REDOX activity. Pinemont technology measures variability in the earth's passive electromagnetic field either at the earth's surface or from low-flying aircraft. Vertical components of this field contain transient impulses of energy varying across a wide frequency range, including the audio range. This passive apparent resistivity method used by Pinemont Technologies uses similar methodologies to those described in the AFMAG technique developed by Mr. S.H. Ward. The proprietary system developed can be seen conceptually as an E field adaptation of AFMAG. The source of the Earths electromagnetic fields is thought to be related to lightning strike activity combined with naturally occurring seismo-electric streaming potentials resulting from micro passive seismic activity occurring worldwide. As passive seismic events occur, seismo-electric potentials and associated magnetic fields are energized at depth and radiate to the surface.

Recent technological improvements have provided the ability to measure subsurface transient anomalies. As opposed to the earlier P-TEM technology, the current technology, Airborne "Audio-Frequency Electromagnetics" or (A-EM), can record, the earth's passively-generated transient pulses that are believed to be associated with REDOX cells. A-EM measures from an airborne platform, apparent conductivity as a function of depth in the earth. We note that the higher the conductivity of any given horizon, the fewer the number of transient pulses emanating from that horizon. Relationships can be derived from empirical evidence relating inherent frequency of the pulse energy to the depth beneath the surface from which the pulses emanated.

REDOX cells are known to form in under the following conditions:

- Micro-seepage plumes above hydrocarbon accumulations.
- Migration of fluids associated hydrocarbon charge.
- Migration of hydrothermal fluids associated to minerals deposits (i.e. Carlin Style Gold deposits, Lead-Zinc, Uranium, Geothermal fluids).

The areas of higher E field transient density would help provide focus for Bridgeport's exploration efforts. It also allows Bridgeport to cost-effectively collect an large amount of scoping data in the safest possible manner and with minimal environmental impact. The survey results are subsequently processed and maps are produced showing areas of higher transient density.

The airborne survey was conducted utilizing a small plane flying low and slow along a grid. All of the flight plans were based on one-half nautical mile spaced east-west lines. GPS coordinates are downloaded to a computer and then mapped using mapping software; anomalous areas are highlighted for map reference. Digital data is recorded as a CSV txt file format X,Y,Z data set, that is compatible with most all mapping software packages.

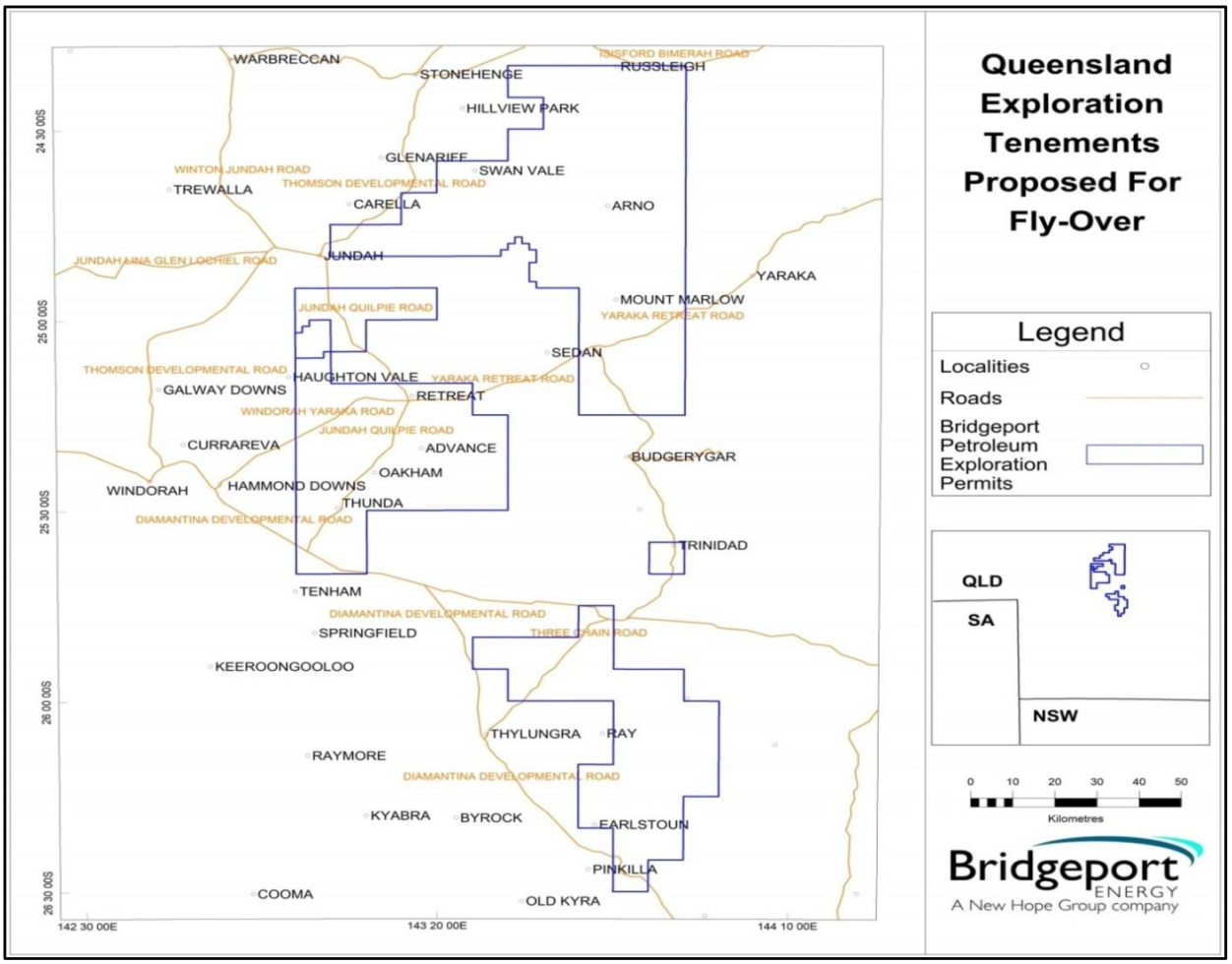
The associated cost for acquisition, processing and documentation of these flights is shown in the confidential Annex B attached under separate cover.

The survey flight path was also modified to tie key points within each of the permit boundaries. An estimated twenty-three fly days were required to collect a series of east-west flight lines over these permits. As airborne preliminary surveys and airborne geophysical operations are generally short term, small scale and low impact, it is considered that the physical, environmental or socio economic impacts are negligible.

Table 2 - Detailed work programme

TENEMENT	FLIGHT Kms^2	TARGET DEPTHS (m)	DAYS IN FIELD
ATP 944 *	4,300	1700-1900	6
ATP 948 *	2,000	2300-2500	3
ATP 794 Barcoo *	2,300	2000-2300	2
ATP 794 Barcoo Jcn *	360	2000-2300	1
			18

Figure 1 - The map of the survey area.



2.2 Stakeholder Consultation

The two landholders potentially affected by the Barcoo Junction flyover include Harry and Susan George (on blocks L13 WOL5718 & L6-8 WS80:GHPL 28/495) the owners of Glenvalley Station. Julie and Ian Groves owners of Haughton Vale Station (planning map reference: 5CV 844082, county: Barcoo and Parish: Romula, title ref: PPH 28/3904). Both landholders run cattle on their property and an intrinsic part of the risk assessment associated with the PTEM were communications with the landholders regarding mustering as a key component.

The George family have signed both the NOIE entry for the indigenous clearances and the CCA, and all landholders on this lease were happy for the flyover to proceed. For ATP 944 and ATP 948 the stakeholders were notified via Local Newspaper – Warrego Times advertisements. This was deemed sufficient given the low impact of the AEM-PTP survey.

From the cultural heritage aspect as no indigenous sites were impacted Bridgeport exercised the management of risk from the Duty of Care guidelines for minimal or low impact on sites of heritage value. Bridgeport also has a Cultural Heritage Management Agreement in place with the Bidjara People.

3. REGULATED ACTIVITIES

3.1 Drilling and Related Activities

No regulated activities undertaken in the licence reporting period.

3.2 Seismic Data Acquisition

None during this reporting period.

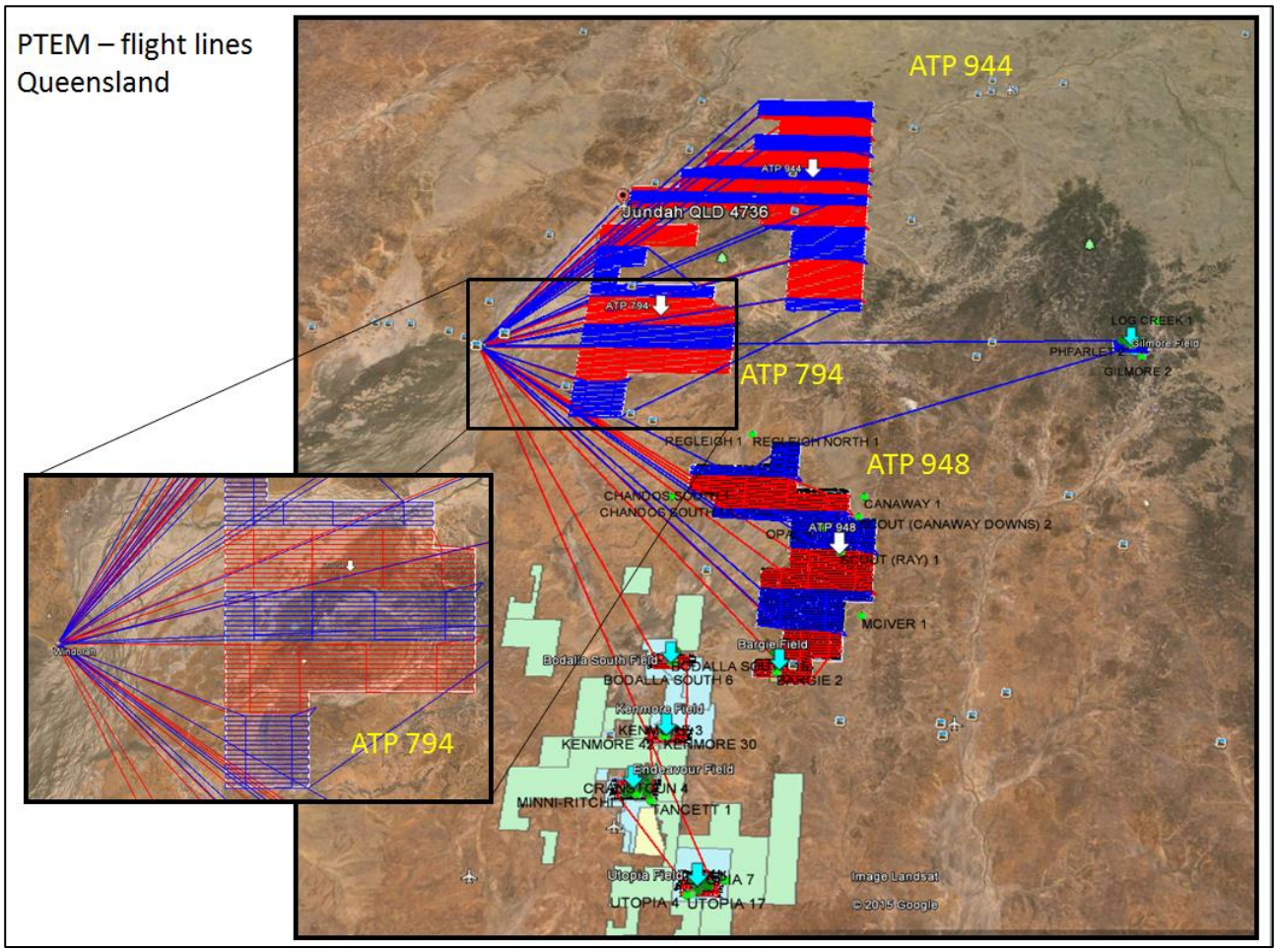
3.3 Geochemical, Gravity, Magnetic and other surveys

Survey Name	:	AEM-PTP (Audio Electro Magnetic Passive Transient Impulse)
Area flown	:	5,300 km^2
Duration	:	30 November - 20 December 2014
Contractor	:	Pinemont Technologies Australia

3.4 Geological and Geophysical Studies

Other technical studies during this permit term were primarily directed toward the regional interpretation of previous work undertaken by other exploration companies and successful drilling and production of conventional wells in the vicinity of the study area along with regional seismic interpretation. This “play based exploration” will continue for the duration of the term. The AEM-PTP survey data is being interpreted and will be submitted to DNRM shortly. AEM-PTP flight lines are outlined below.

Figure 2 – AEM-PTP flight lines



3.5 Geology of the Area Surveyed

The Cooper Basin covers a total area of 130,000 km2 and can generally be described as arid with a uniform climate. The Cooper Basin contains a wide diversity of land and ecosystem values that are defined by geological, geomorphological and hydrological influences. The Eromanga and Cooper basins are located in central and eastern Australia. The saucer-shaped Eromanga Basin extends over one million square kilometers in Queensland, New South Wales, South Australia, and the south-east of the Northern Territory.

The Eromanga Basin is overlain by the Lake Eyre Basin, a succession of Tertiary and Quaternary age sediments occurring extensively throughout central Australia. Eromanga Basin sediments were deposited during the Jurassic-Cretaceous period, and reach a maximum thickness of between 1200 m and 2700 m over the Cooper Basin.

These sediments were deposited under fluvial, lacustrine and (later) shallow-marine conditions, and are broadly continuous across the basin. The Eromanga Basin is the largest of the group of basins that constitute the Great Artesian Basin (GAB). It lies within South Australia, Queensland and in part in New South Wales.

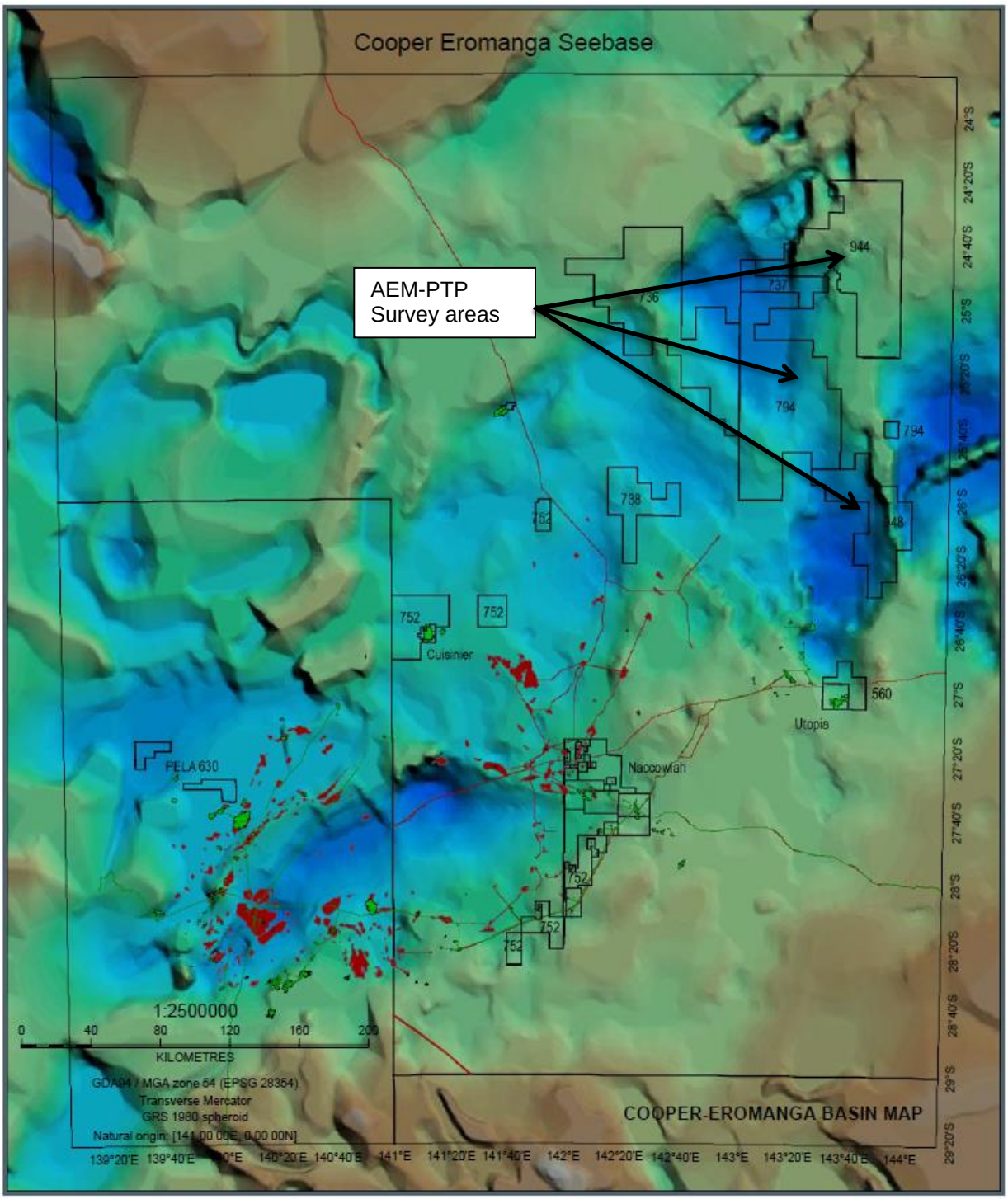
Beneath, and entirely covered by the Eromanga Basin, is the Jurassic – Triassic Cooper Basin, limited in its distribution by bounding faults and pinch-out edges. The tectonic history of the Cooper and Eromanga basins is complex and has been characterised by several periods of rift-related subsidence and compressional uplift and erosion. This history has resulted in the Cooper Basin being subdivided into a number of large scale sub-troughs separated by fault bounded ridges.

With respect to hydrogeology, the rock column of the Eromanga and Cooper basins can be broadly subdivided into aquifers and confining beds (aquitards and seals). Aquifers are porous and permeable units that area able to store and transmit water and are generally analogous to the petroleum reservoirs in that they have storage capacity for fluids as well as permeability which enables the passage of fluids through them. In several instances, porous-permeable units are both aquifers and petroleum reservoirs.

Confining beds (aquitards) are units that impede the movement of water, and in general have low hydraulic conductivities or permeability. Aquitards can have such a low conductivity that no fluid permeates them under the pressure conditions inherent in that part of the basin. Seals are proven by their ability to trap and hold gas under pressure.

The Birkhead-Hutton formation with its extremely low permeability is one such aquitard, it has a permeability of 1-10 millidarcys (mD) and an impermeable shale barrier located immediately below and above the formation. Consequently no formation or stimulation fluids can migrate from this formation upwards.

Figure 3 - Geological map of the survey area.



The physical environmental and socio-economic safeguards and objectives with which the AEM-PTP Survey was required to comply are outlined in Table 3 below.

Table 3 - Socio economic and physical objectives

PHYSICAL AND SOCIO ECONOMIC OBJECTIVES	STRATEGIES TO ENABLE ACHIEVEMENT OF OBJECTIVES	ASSESSMENT CRITERIA	COMMENT
1. To minimise disturbance to landowners	The project has a nominated person with specific responsibility of maintaining contact with all potentially affected landowner/managers. All reasonable landowner requirements are incorporated into management strategies/ procedures. Landowner/managers are provided with information regarding the surveys including the location and duration of the survey. Landowner complaints are recorded and reported to the licensee.	No unresolved reasonable complaints from the landowner	The strategies suggested achieving these objectives have been developed on the basis of current understanding of the risks of overflying properties at a low altitude (90 to 500 metres above ground level) by light piston-engine aircraft
2. To minimise disturbance to stock	Landowner/managers are provided with adequate prior notice. Aircraft avoid overflying concentrations of livestock particularly at stockyards, trucking yards and watering-points. Landowner complaints are recorded.	No unresolved reasonable complaints from the landowner	Low flying aircraft unsettles livestock. Not flying over concentrations of sheep and cattle etc in yards or watering points reduces the risk of interfering with stock.
3. To prevent disturbance to native fauna and avifauna	Undertake identification of significant wetland areas (e.g. .RAMSAR sites) in planning stage of the survey. Aircraft alters course to avoid any concentration of birds - particularly in wetland areas	No evidence of disturbance to native fauna or avifauna. Areas or periods of aggregation/breeding have been avoided	Low-flying aircraft may disturb native fauna. - Particularly nesting water birds. However impact is considered to be of negligible to low due to the limited time of exposure during in survey flights
4. To Minimise the impact on the environment of waste handling and disposal	No litter that can be attributed to the survey is present in the survey area. Domestic wastes are disposed of in accordance with EPA licensing requirements. All fuel oil and chemicals are stored, handled and transported in accordance with appropriately e.g. EPA guidelines 080/07 Bunding and Spill M management, AS 1940 and Australian Dangerous Goods (ADG) Code.	No fuel, oil or chemical spills.	Operators should dispose of any waste in an appropriate manner when landing and refuelling.

4. COMPLIANCE ISSUES

4.1 Licence and Regulatory Compliance

Pursuant to the requirements of the Petroleum and Gas (Production and Safety) Act 2004 section 40(1) – (3) relevant details are encapsulated in this report. The NOI regarding this AEM-PTP was submitted to DNRM on the 27th of November 2014.

There has not been any licence non-compliance identified for ATPs 794,944 and 948 during the Licence reporting year.

4.2 Regulatory Non-Compliance

No regulatory non-compliance has been identified for ATPs 794,944 and 948 during the Licence reporting year.

The AEM-PTP geochemical survey was conducted in the last few years of the licence period, Bridgeport utilised a due diligence checklist which reflects the necessary compliance actions to satisfy the safety, physical and socio-economic requirements. This checklist is attached at Attachment A. In summary the Air Operating Certificate (AOC) endorsed for aerial work with low-level flying and the survey managers ensures that we are using pilots with appropriate experience and low level flying permissions.

The flyover geochemical survey did not impact on any of the Native title values or land owner land values. The AEM-PTP airborne survey acquisition is rated as low impact and no physical impacts are expected to affect the landowners. Bridgeport has also placed advertisements in the Monitor Newspaper and the Cooper Pedy Regional Times notifying the Stakeholders of the low flying aircraft activity in the area.

4.3 Management System Audits

No management system audits undertaken during the reporting period.

4.4 Report and Data Submissions

Data acquired in raw and processed format will be submitted on CD or USB once processing is completed.

4.5 Incidents

There were no reportable incidents during the reporting period.

5. EXPENDITURE STATEMENT

Commercial–in-confidence submitted under separate cover Annex B.

ATTACHMENT A

AEM-PTP COMPLIANCE CHECKLIST

ANNEXURE B: RISK MANAGEMENT CHECKLIST

Aviation Task Profile - Aerial Surveillance

Task Profile Name	Aerial Survey –/Fixed Wing
Objectives of Task	To identify and record areas of interest in support of seismic potential assessment operations for Bridgeport Energy

Task	Hazards and risk management	Risks managed YES/NO
Description of task	• Heights flown need to be commensurate with the type of target and conditions.	YES
	• Landings may be required risks identified in what conditions the aircraft may need to land.	YES
CASA permit/approval	• Air Operating Certificate (AOC) endorsed for aerial work with low-level Approval/exemption and using pilots with appropriate *experience and low level flying permissions.*	YES
	• Operations conducted within the parameters permitted by the Civil Aviation Regulations, associated orders and relevant advisory publications.	YES
Aircraft Type	The fixed wing aircraft shall be high-winged and must be capable of operating normally straight level and manoeuvring safely straight and level at speeds down to 55 knots (kts).	YES
Number of engines	• Single or multi-engine	Single
Task profile	• Planning include map reconnaissance for hazards Briefing including update of hazards as shown on appropriate map	YES
	• Flight following procedures, weather, task objectives, target/surveillance area, communications, aerial risk assessment.	YES
	• Contacted landowners/community	Yes Bridgeport
	• Fuelling when required	YES
	• Conduct Crew Brief	YES
	• Area of operation not below 500 feet (ft) **Above Obstacles (AO).**	Survey conducted ~100 metres
	• Conduct route and area of operations identification, aerial hazard survey and pre-descent brief prior to descent below 500ft AO.	YES

Task	Hazards and risk management	Risks managed YES/NO
	• Conduct area surveillance initially not below 500ft AO. Further descent requires (sequence) prior authorisation, risk assessment, hazard identification, and required to achieve the task.	YES
Flying safety conditions	• Information from aerial surveillance may, where practicable, be augmented by information obtained from ground-based teams.	YES
	• The inspection is conducted in day visual conditions only in low to medium turbulence at a speed commensurate with safe operations in the environmental conditions being experienced.	YES Flight Discontinued above moderate turbulence
	• Consideration shall also be made of extreme environmental heat and cold on the safety of aircraft operations.	YES
	• Maps provided to assist aerial inspection crews, but these should not be relied on for the identification of hazards and therefore the reconnaissance of operating areas essential	YES
	• Grid search techniques employed involving locating targets using GPS or locating and recording a target location using GPS.	YES
	• Although 500ft has been nominated as the safe level of operations, it should be noted that wires may be strung between hills at higher levels and therefore constant vigilance by pilots and crew is required.	YES
	• Descent below 500ft may be conducted if authorised, required for the task and the pre-descent reconnaissance has been completed. The entire area that the aircraft operates below 500ft shall have been fully inspected in the pre-descent reconnaissance.	YES Pilots have CASA low level Endorsement or Agricultural Endorsement
	• The area should be continually assessed during the descent and operations below 500ft.	YES
	• Aircraft are not to be operated with any part of the aircraft extending into vegetation (e.g. long grass which may be hiding fences, ant hills or posts).	YES
Terrain description – management of risk identified	• The areas of operations will encompass all types of terrain including paddocks, hills, and urban areas.	YES
	• The high terrain areas can experience low air density which can adversely affect aircraft performance. Also, the terrain can experience severe downdraughts and turbulence as a result of the strong winds. Cloud can roll in quickly.	YES
	• The lower areas can experience extensive areas of fog, mist or smog, which can limit visibility.	YES
	• The areas can be extensively wooded and/or populated with domestic structures in close proximity to power lines. Fences may be hidden in long vegetation.	YES
Flight risks	• Descent below a safe height (clear of all known and potential obstacles - generally 500 ft AO) is not to be conducted until the pilot confirms a low level of risk factoring in the route and area of operations: o aircraft performance,	YES

Task	Hazards and risk management	Risks managed YES/NO
	○ aerial hazard and obstacle survey, ○ environmental conditions and has conducted a low level flying pre-descent brief. ○ This must be conducted for each descent below a safe height.	
Pest and bird strike	• Traversing near ground level is considered often unnecessarily risky and is normally limited;	YES
	• Known bird roosting areas identified – high tree tops, marshes and swamps	YES
	• Known Spur Throated Locust swarm areas identified particularly around Queensland tenements	YES
Height restrictions	• Any operations below 500ft AO shall be identified in the task plan.	YES
Operating Company Requirements	Company must have: - 1. an AOC and CASA authorisations suitable to the task	YES
	2. a minimum 5-year history general operations with no accidents	YES
	3. a demonstrably functioning Safety Management System fatigue management, or CASA approved flight and duty time, system	YES
	4. been audited and assessed as being suitable and capable of conducting flyover surveillance operations	YES
	5. detailed and documented training system supplied on request	YES
Qualification / Training of each crew member **Communication requirements crucial in managing risks**	• **Pilot** – CASA licenced, medically current, appropriate approvals and experience • **Air Surveillance Officer** – Crew Resource Management, GPS and map reading skills, medically suitable, Work Safety Around Aircraft, Fly the Wire (optional), • A communications Plan available viewed by Bridgeport manager	YES
	• The communications requirements for flight following purposes shall be detailed during the pre-flight briefing.	YES
	• It should be noted that the communications management may reside with the Company but the surveillance support on ground shall be responsible for ensuring that the flight route following is being conducted.	YES
	• Communications need to be maintained at all times between the pilot, the air surveillance officer(s) and any passenger in relation to hazard and targets identification.	YES
	• Communications should also be established and maintained between the aircraft and the ground crew element as appropriate in order to facilitate the communication of operational and hazard related information.	YES
	• Communications are to be established and maintained with other low flying aircraft in the immediate vicinity.	YES
Appropriate	• Appropriate flying helmet (equipped with clear visor) worn by each helicopter crew member	N/A

Task	Hazards and risk management	Risks managed YES/NO
PPE	• Flammable resistant clothing worn by each crew member and passenger	YES
	• Enclosed leather footwear (hardened toe and supported heel preferred)	YES
	• Cotton or wool underclothing, socks Aviation standard gloves (recommended)	YES

ATTACHMENT B

EXPENDITURE STATEMENT – COMMERCIAL IN CONFIDENCE