



# SUN RESOURCES NL

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## **QUARTERLY REPORT FOR THE PERIOD** **ENDING 31 DECEMBER 2006**

22 January 2007

## HIGHLIGHTS

➤ **Project Margarita, Wandoo Joint Venture, Onshore Gulf Coast, Texas, USA (37.5% interest)**

During the December 2006 quarter a farmout on a six well drilling program of shallow gas prospects was consummated with AIM listed Empyrean Energy PLC (“Empyrean”) and the first well, El Viejito #1, commenced before Christmas. Further interpretation was also carried out on reprocessed 3D seismic to high grade the current deep prospect inventory. Land acquisition by leasing continues. The shallow gas prospects drilling program has a gross 8 to 10 BCF outcome and will run over 3 months and will be a precursor to commencement of a drilling program on the more substantial individual deep 60 to 200 BCF potential prospects from mid 2007.

➤ **Eagle North #1, Eagle Oil/Gas Development Project, California, USA (10% interest)**

In October 2006 the Eagle North #1 well was suspended for a future re-entry and new side track to drill, complete and test the lower Gatchell oil sand zone, as a work over rig was unable to pass through the production valve and retrieve it and the associated production plug at 3,963 metres depth and thence the completion string below it. Sun Resources is currently awaiting an independent report commissioned by the Operator evaluating past operations and the proposed forward program on the Eagle Oil Pool before making a decision on whether it will continue at its current level of interest in the joint venture or farm down and be carried on a farmin. The Eagle Oil Pool remains a valid target and the likelihood of the presence of the potential of 34 million barrels of oil and 58 billion cubic feet of gas (P<sub>10</sub> recoverable estimate) has been improved by the results of the Eagle North #1 well prior to the attempted completion and workover operation.

➤ **Flour Bluff Gas Development Project , Texas, USA (20.000 to 24.167% interest)**

Commencement of the Phase 2 development program, involving an 8 to 9 well program over 16-18 months, targeting 40.9 BCFe of 3P recoverable reserves has suffered a further delay from March quarter 2007 to the latter half of 2007. The further delay is a result of the rescheduling of drilling by the Operator and one other member of the Flour Bluff joint venture. Advice was received in December 2006 that these parties have large financial commitments to a prospect elsewhere in South Texas that has advanced technically during the waiting period for the drilling contractor to commence operations on Flour Bluff. As the parties together constitute 49% of the Flour Bluff project equity a stay on drilling has been forced on the joint venture until the latter half of 2007.

➤ **Drilling Activity March Quarter 2006**

**Project Margarita – continuing 6 well shallow gas drilling program with 8 to BCF outcome to run to March 2007**

## **A. OIL AND GAS EXPLORATION**

Sun Resources NL (“Sun Resources”) continued its active exploration/development programs during the quarter in mainly USA and Australia, with activity accelerating on the South Texas, USA projects as a consequence of the commencement of new exploration drilling on Project Margarita. If successful it should generate significant cash flow and assist in funding the Company’s exploration activities.

### **1. USA**

Sun Resources increasing presence in the USA is due to excellent investment opportunities offered to small companies by virtue of the country’s voracious and ever increasing energy consumption, infrastructure, prolific hydrocarbon bearing basins and importantly energy pricing. Notwithstanding oil is priced at prevailing world prices (US\$50 to 60 per barrel), gas prices per unit to the producer have been up to four to five fold flat Australian prices (US\$11 to 12 compared with \$US2.00 to 2.25) over the last year. Gas prices have come off considerably since that time to around the present \$6 to 7 level reflecting seasonal demand. Notwithstanding this, it is expected future gas prices will continue to hold at high levels probably in the range US\$6 to 8 rather than at the extreme highs seen in December quarter 2005. Gas price is a reflection of the current (and growing) 4 trillion cubic feet pa gas imports over 19 trillion cubic feet pa gas production (23 trillion cubic feet pa gas consumption). Gas price is also being underpinned by the prospect of increased importation of liquefied natural gas (“LNG”) to satisfy demand.

Sun Resources current exploration and production emphasis is on both oil and gas in conventional geological settings, principally located in Texas (Flour Bluff Gas Project and Project Margarita on the South Texas Gulf Coast) and California (Eagle Oil/Gas Development Project in the San Joaquin Basin).

#### **1.1 FLOUR BLUFF GAS PROJECT, GULF COAST, TEXAS – 20.00 to 24.1667%**

The Flour Bluff Gas Project is a substantial gas project involving the redevelopment of a near depleted giant gas field complex at Flour Bluff, on the outskirts of Corpus Christi, Gulf Coast Texas on 10,400 acres of leasehold land. This field has seen 1.3 trillion cubic feet of gas (“TCF”) production with 64 million barrels of oil (“MMBO”) over the last 65 years with past production coming from 40 separate reservoirs at shallow and moderate depths above 2,400 metres. These shallow reservoirs are now largely depleted, but significant reserves are present (to 210 billion cubic feet of gas equivalent (“BCFe)) in virtually undeveloped deeper reservoirs between 2,750 to 3,600 metres depth. It is these reserves that are being targeted in the redevelopment of Flour Bluff. Any produced hydrocarbons can be fed into the existing extensive project infrastructure for immediate delivery to customers. Sun Resources’ interests in the various fields are; West Flour Bluff Gas Field and Pita Island Gas Field 20.0000% and East Flour Bluff Gas Field 24.1667%.

#### **Phase 1 of the Development Program**

Phase 1 of the development program was completed mid March quarter 2006 and comprised a proof of concept, three well exploration drilling programme, to principally assess multiple sand reservoirs at depth for future production. The overall outcome of this Phase 1 program was mixed. Two of the wells, BG Webb #1 and EFB D-24 proved the potential of the mid deep Frio J and upper K sand potential in both the East and West Flour Bluff Fields, but had poor production performance on initial reservoir completions with production reaching 5.233 million standard cubic feet of gas per day equivalent at the end of the program. Production during December quarter 2006 approximated 2.3 million standard cubic feet of gas per day equivalent. The reason for this poor production performance has been actively pursued by Sun Resources and the Operator (refer paragraph below). Notwithstanding this the important outcome from the Phase 1 program was the new reserve position at 1 December 2005 where a significant reclassification within 3P (Proved, Possible, Probable) reserves had occurred. Some 54% of total project 3P reserves (53.2 billion cubic feet of recoverable gas equivalent) is now in the overall Proved (1P) category as against 38% in October 2004.

A review of the Phase 1 well engineering and completion program on the BG Webb #1, Petty #2 and D-24 wells has been commissioned and undertaken by Sun Resources and continued by the Operator during the current drilling hiatus. Results of independent expert studies to date have shown the production performance of reservoirs completed in BG Webb #1 and EFB D-24 is not due to problems of reservoir per se. These reservoirs are capable of production at high rates (2 to 5 million cubic feet per day) with a high recovery of measured reserves when wells are completed correctly. The poor production performance is derived from the fact that the well bores are rugose and are over gauge due to formation caving into the bore hole. This leads to poor and incomplete cement bonding between drilled formations and the subsequent casing run and cemented into place in the wells for production. This can be exacerbated by subsequent stimulation of the formation by fracing. A poor cement bond allows migration of water from formation aquifers at differing depths to hydrocarbon bearing sands; this can substantially suppress and in some cases curtail hydrocarbon flow from the reservoir into the production casing. Often the water source is a considerable distance below the productive reservoir as is the case with the producing Frio K15 sand in the BG Webb #1 well. The problem of cement bond and poor casing seal should be overcome in future programs through use of synthetic based drilling mud and not water based drilling mud to drill in gauge well bores.

## **Phase 2 of the Development Program**

Phase 2 of the development program involves 8 new wells targeting 40.9 BCFe of 3P recoverable reserves (36.5 BCF gas and 723,700 barrels of oil) in the deep Frio J and K sands in both the East and West Flour Bluff Gas Fields and workovers of BG Webb #1 and EFB E-24 to improve current production performance.

Regrettably commencement of Phase 2 has suffered a further delay from the anticipated start in the March 2007 quarter. Deep rig availability as a consequence of a back up in the Operator's favoured drilling contractor's well scheduling in 2006 had pushed commencement out to March quarter 2007. The further delay is a result of the rescheduling of drilling by the Operator and one other member of the joint venture that together constitute 49% of the Flour Bluff project equity. Advice was received in December 2006 that these parties have large financial commitments to a project elsewhere in South Texas that has advanced technically during the waiting period for the drilling contractor to commence operations on Flour Bluff. The parties have forced a stay on drilling until the latter half of 2007.

Commencement of activities on Flour Bluff will be the subject of a technical meeting in Houston in early February 2007. Start date on FB #1, the first well in the program on the West Flour Bluff Gas Field, is a subject of the meeting and at this stage is probably September quarter 2007. FB-1 is updip of the Petty 2 well, which was a good producer that has produced nearly 2.6 BCFe from the J17 sand and still has about 1.2 BCFe in the remaining J sands. Some 6.73 BCFe reserves is predicted in the K15, J33 and J17 sands of FB#1. Workovers of BG Webb #1 and EFB D-24 to improve current production performance in conjunction with the completion of the as yet finished review of the Phase 1 well engineering and completion programs on the BG Webb #1, Petty #2 and D-24 wells is also scheduled. Besides better well engineering the aim of the review program is to substantially improve flow outcomes from improved fracture stimulations of reservoirs in uncompleted reserves in these wells and future step out development wells, ie obtaining sustained 2 to 3 fold increases in flow outcomes (3 to 5 million cubic feet per day) from single and multiple completions of reservoirs.

## **1.2 PROJECT MARGARITA, ONSHORE GULF COAST, TEXAS (37.5%)**

Sun Resources continues its exploration activities in Texas, USA, on the highly prolific oil and gas prospective onshore Texas Gulf Coast through a ground floor Joint Venture with Wandoo Energy, LLC ("Wandoo") on an extensive 2D and 3D seismic data base covering portions of four main producing trends on the onshore Texas Gulf Coast in the December 2005 quarter. Interests in the Joint Venture are Sun Resources 37.5%, Victoria Petroleum NL ("Victoria Petroleum") 37.5% and Wandoo 25%.

The first specific project in the Wandoo Joint Venture is Project Margarita where > 45 leads and prospects have now been recognised in prospective stratigraphic/structural settings at various depths ranging from

1,000 to 4,000 metres in 530 km<sup>2</sup> of 3D seismic. Historic production and plays in the project area and environs are Frio and Vicksburg sands at <1,800 meters depth. Deeper Yegua and Wilcox sands between 1,800 and 4,000 metres are under explored and only 5 wells >2,400 metres have been drilled within the 530 km<sup>2</sup> 3D seismic area and 4 of these were drilled prior to the 3D seismic. A number of the deeper high impact Wilcox targets to 200 BCF gas potential have been recognised with significant new discoveries lying on trend.

During the December 2006 quarter a farmout on a six well drilling program of shallow gas prospects was consummated with AIM listed Emphyrean Energy PLC (“Emphyrean”) and announced on 5<sup>th</sup> December 2006. The first well, El Viejito #1, commenced before Christmas. Further interpretation was also carried out on reprocessed 3D seismic to high grade the current deep prospect inventory and land acquisition by leasing continued. The shallow gas prospects drilling program has a gross 8 to 10 BCF outcome and will run over 3 months and will be a precursor to commencement of a drilling program on the more substantial individual deep 60 to 200 BCF potential prospects from mid 2007.

With respect to the Emphyrean farmin, Emphyrean has committed to drilling back to back three of six wells from the inventory of shallow gas prospects. These three wells are called the Initial Wells program. A commercial success in any of the wells in this program will trigger the drilling of a further three wells back to back on prospects from the shallow prospect inventory (Final Wells program).

All programmed shallow wells are being drilled on a turnkey basis at a fixed price for the joint venture and any costs over the fixed price due to drilling delays are to the contractor’s account. On completion of the six wells Emphyrean has options on participating on the same terms and conditions in further drilling of the shallow prospect inventory and to farm into the drilling of three of the deep prospects (>2,000 metres depth).

Emphyrean will contribute to well funding on a promoted basis and earn equity from each of the operating USA subsidiaries of Sun Resources, Victoria Petroleum NL (“Victoria”) and Wandoo Energy LLC (“Wandoo”). Wandoo in turn has a part carry on the drilling and completion from Sun Resources and Victoria as per an agreement between the parties dated 5<sup>th</sup> December 2005. For all subsequent completions and development activity on a successful well, the parties contribution to the costs will be on the basis of final equity %. The table below outlines the final equity position of the participants in six of the prospects to be drilled from the prospect inventory.

Participant	Final Equity %
Sun	20.0000
Victoria	20.0000
Wandoo	16.0000
Emphyrean	44.0000
Total	100.0000

The shallow prospects to be drilled in the Initial Wells and Final Wells programs are analogues of historic prolific Frio and Vicksburg sands production in the project area at <2,000 meters depth. The prospects with mean target outcomes and final well depths for the Initial Wells programs are as follows;

El Viejito Prospect	1.6 BCF	1,920 metres
Dos Dedos Prospect	1.2 BCF	975 metres
Milagro Prospect	2.0 BCF	1,585 metres.

The Final Wells program prospects will be finalised from the prospect inventory when the outcome of the Initial Wells program is known. These prospects have target size outcomes similar to the Initial Wells program.

### **1.3 SAN JOAQUIN BASIN, CALIFORNIA**

#### **1.3.1 EAGLE OIL/GAS DEVELOPMENT – 10.0% INTEREST**

The Eagle Oil/Gas Development Project is targeting a stratigraphic trap containing 34 million barrels of oil and 58 billion cubic feet of gas (P<sub>10</sub> recoverable estimate) in the Eocene age Upper and Lower Gatchell Sandstone through the drilling and testing of Eagle North #1.

At the end of the September 2006 quarter a deep work over rig on Eagle North #1 was attempting to extract the completion string in the hole and run a new completion to test the indicated 177 metres of oil bearing sand from 4,209 to 4,386 metres measured depth (“MD”). The TCP guns on the completion string in the hole had not fired to perforate the casing for testing. Regrettably after considerable effort it was not possible to pass through the production valve in the production plug at 3,963 metres depth and retrieve the production plug and below it the completion string in the horizontal well bore.

The joint venture partners decided that the money spent continuing the work over with uncertain outcome (the production valve being too damaged now to retrieve with certainty) would best be spent on a future re-entry and side track from the current cased Eagle North-1 well bore to target the good oil shows seen in the 177 metres of horizontal well in the lower Gatchell sand. Operations were curtailed on 19<sup>th</sup> October 2006.

The Eagle Oil Pool remains a valid target and the presence of moveable hydrocarbons has been upgraded by the well results. Of importance is the fact that;

- The original target potential of a mean of 13.5 million barrels of oil with 25 billion cubic feet of gas to the P<sub>10</sub> case of 34 million barrels of oil with 58 billion cubic feet of gas remains.
- There is the now established presence of oil in the target zone over a 177 metres of horizontal extent, coupled with the known ability to flow oil and gas to surface from this zone from the nearby Mary Bellocchi-1 vertical well (223 barrels of oil per day and 0.7 million cubic feet per day flow from a 12 metre interval of lower Mary Bellocchi sand which should be considerably enhanced by a flow from a 177 metre interval); and the current high oil price.

The above provides encouragement to continue to achieve a successful production well and eventually the development of the Eagle Oil Pool through a horizontal well development.

Planning has commenced for a potential future operation with the exact timing of the operation subject to the availability of the required deep drilling rig, equipment and personnel. A new operator and partner will be sought for this project with the opportunity for an incoming partner to farm in to the interests currently held by some of the parties. The joint venture is currently awaiting an independent report commissioned by the Operator evaluating past operations and the proposed forward program on the Eagle Oil Pool before each party makes a decision on whether it will continue at its current level of interest in the joint venture or farm down and be carried on a farm in on the further evaluation of the Eagle Oil Pool.

On completion of the Eagle North #1 well equities in the project development are Emyreum Energy PLC (38.5%), Victoria Petroleum (20%), First Australian Resources Ltd (“First Australian”) (15%), Lakes Oil NL (15%), Sun Resources (10%) and a USA private investor (1.5%).

## **2. OFFSHORE MALTA, SOUTHERN MEDITERRANEAN SEA – 20% INTEREST**

Anadarko International Energy Company (“Anadarko”), a subsidiary of Anadarko Petroleum Corporation (NYSE:APC), concluded a Participation (Farmin) Agreement in June 2005 with the then Malta Joint Venture comprising Sun Resources (20%) and Pancontinental Oil & Gas NL (“Pancontinental”) (80%). This agreement provides for Anadarko to earn an interest in the Malta Project by funding agreed activities on two contiguous permit areas (ESA Area 4, Block 3 and ESA Area 5) totalling 14,800 square kilometres on the Pelagian Platform in southern Maltese waters abutting Tunisia and Libya. These activities are further infill 2D seismic on ESA Area 5 leading to Anadarko at its option to enter into a Production Sharing Contract with Sun Resources, Pancontinental and the Government of Malta to drill up to two wells on either or both the very large Chianti and Limoncello Prospects. These prospects, delineated in 2004 by Sun Resources and Pancontinental in ESA Area 5, have large speculative reserve potential, ranging from a

mean 455 million barrels recoverable oil potential (Chianti) to a mean 968 million barrels recoverable oil potential (Limoncello). The potential estimates are based on current seismic mapping and using representative reservoir parameters from neighbouring commercial field analogues in Libyan and Tunisian waters. Anadarko, under the Agreement, has options to earn a 65% interest in the Production Sharing Contract on completion of one well, and to increase its interest to 75% by again drilling a further well at no cost to Sun Resources and Pancontinental.

At the end of June 2005 Anadarko was tendering for a seismic vessel for the 2D infill seismic program in ESA Area 5 that was expected to take four weeks in September 2005. However, at the Maltese Government's request, the Joint Venture suspended the seismic survey to assist the government in facilitating the resolution of the maritime border issues it has with both Tunisia and Libya. These border issues affect the western and southern boundaries of ESA Area 5. The 2004 seismic survey was conducted within undisputed Maltese waters away from these unresolved border areas and it was this seismic survey that revealed a number of significant world class prospects and leads in undisputed Maltese waters which motivated Anadarko to conclude a Participation (Farmin) Agreement with Sun Resources and Pancontinental.

Significant progress continues to be made on resolution of the maritime borders, particularly between Malta and Tunisia. An Agreement between Malta and Tunisia was signed on 27<sup>th</sup> February 2006 for joint oil and gas exploration and exploitation in zones of the Continental Shelf located between Malta and Tunisia which in part encompasses the western area of the ESA in Area 5. Since the agreement, Malta and Tunisia, through a joint expert committee reporting to the two country's Ministers of Foreign Affairs, Dr Frendo (Malta) and H.E. Abdallah (Tunisia), have been working on the determination of the exact coverage of the joint exploration and exploitation zone between the two countries. Similar discussions between Malta and Libya are current on resolving the southern boundary issue in the southern area of the ESA, and it is hoped that a similar agreement will be forthcoming in the very near future.

Anadarko has been actively monitoring the border situation with the Government of Malta and is keen to commence seismic. It has been proactive in the matter by seeking tenders for the seismic survey on a seismic boat passing by to other work basis and / or integrating the seismic with seismic to be carried out on permits held in adjacent Tunisian waters. Hopefully, matters between all parties, ie Malta and Tunisia and Malta and Libya, can be resolved and concluded by February 2007 as seismic activity will be curtailed until that date because of the winter season in the Mediterranean Sea.

### **3. CARNARVON BASIN, WESTERN AUSTRALIA**

Sun Resources is part of various consortiums of companies exploring at quarter end four permits in the Dampier Sub-Basin (WA-254-P, WA-257-P, WA-261-P and WA-340-P). The greater Carnarvon Basin has become Australia's richest oil and gas province since Bass Strait, with reserves in excess of nine billion barrels of oil equivalent. It is probable from developments outlined below that 2 to 4 wells will be drilled on these permits in the next few years commencing second half 2007.

#### **3.1 WA-254-P – 7.86% TO 9.25% INTEREST**

The permit prospect and lead inventory is Duomonte, Dr Zeus, Janus revisited, Helly Belly, Jayasuriya and Little Joe. On going work by Operator, Apache Energy ("Apache") in 2006 has been directed towards maturing the first three mentioned prospects for drilling particularly as new deeper levels of interest in structures are indicated in new seismic reprocessing (Panaeus refresh data) received in December quarter 2005. From developments outlined below 2 to 3 wells will be drilled in the last term of the permit which was granted renewal in March quarter 2006 for a further five years.

A joint venture meeting, scheduled late in the December 2006 quarter to confirm the 2007 exploration program, ie the possible drilling of one of the prospects outlined below, and to discuss the results of the 2006 year program has been deferred until March quarter 2007.

An Apache peer group prognosis on the Duomonte Prospect has confirmed progression to drilling. However, drilling has been delayed because of the now recognised potential of deeper formations from acquired Panaeus refresh seismic data and the need to integrate this information into the prospect data base. The Duomonte Prospect consists of two similar sized lobes, one in WA-254-P the other in adjacent WA-1-P. WA-254-P potential ranges from 20 (mean) to 44 million barrels of oil recoverable ( $P_{10}$ ) with primary target formation (pre recent seismic developments) being shallower Legendre Formation sands at approximately 2,500 metres depth. A nearby well Janus #1 targeted Legendre sands at a shallower depth than Duomonte and these sands were found to be water wet with oil shows. A re-look at the seismic data suggests the younger and shallower Calypso Formation sands are also a secondary target, but could be gas prone. New (Panaeus refresh) seismic data deeper seismic events in structure now also need assessment at North Rankin and Mungaroo levels for a Caribou gas (oil) target before Duomonte can be drilled. The outcome of the assessment of the new seismic data is an agenda item of the pending joint venture meeting.

A new prospect Dr Zeus (formerly Lead Z) is now a highlight of the prospect and lead inventory. The prospect is a mid *M Australis* (Saffron Sand equivalent) stratigraphic trap with some structural closure outlined by a prominent amplitude anomaly. Prospect potential ranges from; 23 (mean recovered) to 52 million barrels of oil recoverable ( $P_{10}$ ). An internal Apache peer group has also reviewed and approved this prospect for drilling. However, as with the Duomonte Prospect new Panaeus refresh seismic data has highlighted deeper seismic events, particularly at Angel Formation level, that need assessment. Angel Formation is in faulted juxta position to Eliassen Formation sands with probable by passed oil pay that has been determined by the reassessment of shows in this formation in the Janus #1 well (refer below)

The Janus #1 well was drilled by the joint venture in late 1997 and the target Legendre Formation sands in a structure was found to be water wet with oil shows. The higher Eliassen sands in the well had some shows which were unexpected at the time and were not followed up. The target potential of the Eliassen sands has recently been recognised by the January 2005 discovery of a 76 metre gas condensate column in the Hurricane 1 well in northern adjacent WA-208-P. This gas condensate discovery was of note as a gas – water contact was not encountered and suggests the possibility of a down dip oil leg. As a result Janus #1 has been re-examined through a detailed petro-physical study. The results of this study suggest the presence of by passed pay in the well. It has been estimated that 11.5 metres of net pay is present from 39.5 metres of gross pay with an oil-water contact at 1,926 metres MDRT in the well. The size of the accumulation has not yet been estimated, but depends on mapping the down dip leg of the inferred accumulation in ongoing work this past calendar year.

Miscellaneous prospects Little Joe, Helly Belly (Lower Cretaceous / Angel Formation sands in structural closure in a buttress trap) and leads, Jayasuriya and Kleopatra (Eliassen sands stratigraphic pinch out on the basin slope) require more interpretative work, especially as new Panaeus refresh seismic data is now available to determine if they are possible drilling candidates too.

Participants in WA-254-P are Sun Resources (7.86% to 9.25%), Operator Apache (47.89% to 47.90%), Woodside Energy Limited (17.06% to 24.38%), First Australian (10.71% to 11.25%), Victoria Petroleum (6.17% to 9.30%) and New Zealand Oil and Gas NL (2.99% to 5.23%). The latter larger interests of the junior participants reflect the interests of the junior participants in the graticular block containing the stranded Sage Oilfield. Sage is currently waiting for a nearby discovery to be made to move forward by sharing development costs.

### **3.2 WA-257-P – 9.64% INTEREST**

Operator, Apache, has focused on bringing two structural – stratigraphic traps to drill status in the last 12 months. These are the previously known up to 100 ( $P_{10}$ ) million barrels of oil recoverable *W Spectabilis* sands Hekla Prospect, and the new *P inhiense* (Angel Formation) sands Sextant Prospect. A joint venture meeting scheduled late in the December 2006 quarter to confirm the 2007 exploration program, ie the possible drilling of Sextant, and to discuss the 2006 year program has been deferred until March quarter 2007.

The Sextent Prospect is a truncation sub crop play at the *P iehiense* (Angel Formation) level and is an extrapolated analogue to the Mutineer / Exeter oil discoveries in the southern Carnarvon Basin off Exmouth which are being brought into production. It overlaps into eastern adjacent WA-246-P and the prospect style is repeated along strike as another prospect called Windlass. Target potential for Sextant ranges from 50 (mean) to 130 (P<sub>10</sub>) million barrels of oil recoverable with two thirds of the potential falling in WA-257-P. Sextant #1 is now a conditional well on the Operator's drilling schedule for 2007 as the prospect has been shown to have less structural risk than the Hekla Prospect. However, a firm well recommendation from the Operator for the Sextent Prospect is pending the analysis of the Libris 1 well drilled in early September 2006 in eastern adjacent WA-246-P held by Apache, Kufpec Australia Pty Ltd ("Kufpec") and Pan Pacific Petroleum NL. The Libris 1 well was plugged and abandoned after wireline log results indicated sub-economic oil discoveries in the Upper and Lower Angel Formation objectives.

Participants in WA-257-P are Sun Resources (9.64%), Operator Apache (51.78%) and Kufpec (38.58%).

### 3.3 WA-261-P – 6.15% INTEREST

On going work with Operator, Apache, in the 2006 year was directed towards fully maturing the Hestia Prospect for drilling in 2007. In particular, interpretation of deeper stratigraphic levels indicated in new reprocessed seismic data acquired in December 2005. A joint venture meeting, scheduled late in the December 2006 quarter to confirm the 2007 exploration program and to discuss the results of the 2006 year program occurred post quarter on 3 January 2007.

The Hestia Prospect is a result of the observations of excellent oil shows in good reservoir sands in principally the *C halosa* and *N gracilus* of the Athol Formation in Ceres 1. The buttress-stratigraphic trap lies southward of the Ceres 1 and south westwards of the Gats 1 locations. The *C halosa* sand only is the target in the prospect at 780 meters MDRT as deeper Mungaroo Formation sands below the main Athol Formations target sands in the buttress trap considered to be analogous in setting to the Tusk oil accumulation to the northwest in nearby WA-246-P were downgraded by the new seismic reprocessing. Notwithstanding prospect size ranges from 11.5 (mean) to 23.2 (P<sub>10</sub>) million barrels of oil recoverable at the *C halosa* level, and it is favourably located with respect to the nearby Stag Oilfield infrastructure for a tie-in, the largest risk for the Hestia Prospect is seal at the reservoir sub crop interface with the basal Cretaceous unconformity. Tight indurated sand at the reservoir sub crop interface was prognosticated from the nearby Gats 1 drilled in August 2005. Two to four metres of induration was present in the sandy facies on the basal Cretaceous unconformity in the Gats well and was so tight it could not be cored and hence could be an effective seal to the reservoir. At the joint venture meeting the results of further work on the seal issue was outlined to the joint venture by the Operator. This work has resulted in a substantial increase in drilling risk for the prospect, ie the probability of drill success being reduced from 25% to a marginal 10%. Due to the revised risk assessment Hestia is no longer on the Operator's drilling list.

At the joint venture meeting the Operator also recommended the WA-261-P joint venture shoot an OBC 3D seismic survey over the area of the North Chamois Prospect to delineate a possible *M australis* (Stag oilfield reservoir) stratigraphic play. This would be carried out at the same time as the Operator's OBC 3D seismic survey over the Stag Oilfield after WA-261-P has been renewed by the federal authority. The OBC 3D seismic survey provides the best opportunity to find additional prospects to assist in the development of the Chamois oil accumulation (2.4 (mean) to 3.9 (P<sub>10</sub>) million barrels of oil recoverable) immediately to the south, as minimum economic field size for a small FPSO development is now 5 million barrels of oil under a >\$US50 per barrel oil price regime.

Participants in WA-261-P are Sun Resources (6.15%), Apache (Operator) (45.12%), Strike Oil NL ("Strike") (16.22%), Tap Oil Limited (10.00%), Victoria Petroleum (12.50%) and Bow Energy NL (10.0%).

### 3.4 WA-340-P – 20% INTEREST

Operator Strike finalised the seismic study on the permit in the quarter to upgrade four Jurassic to Cretaceous age structural stratigraphic leads to allow a decision by the joint venture on possible drilling in

2007. The seismic study was discussed at a joint venture meeting on 30 November 2007. Reprocessed old seismic data received during June quarter 2006 integrated and interpreted with the seismic carried out by the joint venture in November-December 2005 over the adjacent Sherlock and Peawah prospects formed the basis of the study. Prospects in the permit were thought to have moderate size potential in the 10 to 30 million barrels of oil recoverable range. However, interpretation of the merged data set has shown the main prospects to be considerably reduced in size with high structural and reservoir risk. It is probable the joint venture will relinquish the permit in March quarter 2007 as the recent work has shown there are no longer high priority drill targets in the permit to meet a statutory drilling commitment to the federal authority in 2007.

Permit participants are Strike as Operator (40.00%), Victoria Petroleum (20.00%), Pancontinental (20.00%) and Sun Resources (20.00%).

#### **4 SYDNEY BASIN, ILLAWARRA CSM/CMM PROJECTS**

Sun Resources 20% and unlisted Apex Energy NL ('Apex Energy') as Operator 80% are joint venture partners in the Wollongong CSM and CMM project comprising granted Petroleum Exploration Licences PEL 442 and PEL 444 and access to Helensburgh Coal Pty Ltd's Metropolitan Mine Coal Concession Leases CCL 703 and CCL 379 ("Metropolitan") and the Burrigong Project PEL78. Significant CSM and CMM resources are being targeted in the project licences to feed small scale energy projects such as local "green" power generation, mini CNG and LNG schemes. The projects have two main attributes for success; the presence of large amounts of gas above the water table and a doorstep market of large population bases at Wollongong – Port Kembla and Sydney.

Work on the project during the December 2006 quarter was again extremely limited and is still waiting on Apex Energy's flotation on the ASX and in particular finalisation of a Development Agreement to supply gas to a generator.

##### **4.1 WOLLONGONG COAL SEAM METHANE/COAL MINE METHANE - 20% INTEREST**

The Wollongong CSM and CMM project, comprising granted Petroleum Exploration Licences PEL 442 and PEL 444 and access to Helensburgh Coal Pty Ltd's Metropolitan Mine Coal Concession Leases CCL 703 and CCL 379 ("Metropolitan"), lies between Port Kembla and Helensburgh .

The joint venture is investigating the economic potential of both CSM and CMM in the licences, especially CSM of all Permian age gassy coal seams. Data from current programs is being used to increase confidence in present Most Likely P<sub>50</sub> (128 billion cubic feet) in place gas estimates for all the leases and to advance local power generation schemes within the leases using both CSM and in particular CMM, as per the February 2004 Darkes Forest 1 discovery made by the joint venture in PEL 444 which flowed 1.2 million cubic feet of gas per day. The first of these power schemes is being planned on the Metropolitan Mine site using initially part of the 4.7 million cubic feet of gas per day currently being drained from the Bulli Seam ahead of mining. The concept of supplying both CMM and CSM to a local at or near site power generator is well proven locally on a far larger scale than what is currently contemplated by the Sun Resources-Apex Energy study. Abutting to the west of the joint venture's leases lies the Westcliff-Appin-Tower colliery complex of BHP-Billiton Limited. Some 7 billion cubic feet of CSM gas per annum drained from the Bulli Coal Seam ahead of long wall mining is supplied to two local power stations owned by Energy Developments Limited having a total 96.8 MW of generating capacity.

##### **4.2 BURRAGORANG PROJECT PEL 78 (FORMERLY PSPA 10) – 14.00% INTEREST**

Following an assessment of PSPA 10 held by the joint venture, comprising Apex Energy (56%) as Operator, Australian Coalbed Methane Pty Ltd (30%) and Sun Resources (14%), an application was made in December 2005 over the more prospective portion of the former PSPA 10 area for a PEL (PEL 78) to test sealed stope targets in abandoned coal mines in the Burrigorang Valley by keyhole drilling to ascertain the presence of significant methane gas accumulations. An offer of grant for PEL 78 was received by the joint venture at the end of the September 2006 quarter and accepted in the December 2006 quarter with bonding put in place for the grant to be effected.

PEL 78 lies in the south western margins of the Sydney Basin, inland from Wollongong in the Illawarra. Very little work has been done on CSM in this part of the Sydney Basin as it now lies within the Sydney Water Catchment, and all activities are subject to authorisation by the Catchment Authority.

Part of the former area of PSAP 10, now PEL 78, offers potential for shallow biogenic methane resources generated by bacteria which have entered both the coal seams with groundwater and the abandoned coal mine workings (goaf) within the licence area. The deeply incised topography of much of this region results in extensive exposure of coal seams which in turn facilitates the entry of water and bacteria. It is quite possible for methane gas generated by biogenic activity to attain potentially commercial accumulations in the goafs in the decade or so since the cessation of all mining activities in the region. Based on recent carbon isotope determinations by CSIRO, methane gas from the Burragorang Valley mines in PEL 78 have an extremely strong biogenic signature. The detailed 12 months assessment of former PSPA 10 in 2005 showed that there is little opportunity to monitor mine gas accumulation without resort to drilling which can only be done under a PEL.

## **B. MINERAL EXPLORATION/INVESTMENT**

The Joint Venture on the vestigial mineral interest of the Butterfly gold tenement in the North Coolgardie Mineral Field, Western Australia in which the Company has a 5% NPI interest remains current with Barmenco Limited a successful underground mining contractor and Atlantic Gold Limited.

## **C. NEW PROJECT DEVELOPMENT**

During the quarter Sun Resources continued its involvement in new project generation and development to the benefit of its Shareholders as outlined above.

## **BY ORDER OF THE BOARD**



**B L FARRELL**  
**EXECUTIVE CHAIRMAN**

This quarterly report is lodged on the Company's website, [www.sunres.com.au](http://www.sunres.com.au).

Information contained in this report was compiled by the Executive Chairman of Sun Resources, Dr B. L. Farrell, PhD, MSc, BSc (Hons Eco.Geol), FAIMM, MIMM, MPESA, who has had 37 years experience in the practice of geology and more than 5 years experience in petroleum geology.