

# Quarterly Report for the Period Ended 30 September 2019

## Summary

- SM58 011 BP01 well drilling the Cutthroat Prospect at SM58 confirmed a true vertical thickness net pay of 301 feet in the upper O Sands; Mud log data indicates a total hydrocarbon bearing interval thickness in the Lower O section of between 180 and 250 feet; a very substantial hydrocarbon accumulation that is transformational for the Company;
- 2P oil reserves, as of 30 June 2019, increased by 9.4 MMbbl to 17.4 MMbbl, an increase of 118%;
- Byron's share of oil and gas production (net sales volume) for the September 2019 quarter, from SM71 and SM58 E1 well, was 111,639 barrels of oil and 136,917 mmbtu of gas; and
- Net revenue recorded for the September quarter, from SM71 and SM58, was approximately US\$ 6.7 million (net to Byron after quality adjustments, transportation charges and royalties).

<b>Name:</b>	<b>Byron Energy Limited</b>
<b>ASX code:</b>	<b>BYE</b>
<b>Shares on issue at 30 Sep 2019:</b>	<b>705.4 million</b>
<b>Quoted shares:</b>	<b>705.4 million</b>
<b>Options on issue (unquoted):</b>	<b>50.6 million</b>
<b>Cash at Bank 30 Sep 2019:</b>	<b>US\$5.56 million</b>
<b>Market Capitalisation at 30 Sep 2019:</b>	<b>A\$254 million (@A\$0.36 per share)</b>

### Directors

Doug Battersby (Non-Executive Chairman)  
 Maynard Smith (Chief Executive Officer)  
 Prent Kallenberger (Chief Operating Officer)  
 Charles Sands (Non-Executive Director)  
 Paul Young (Non-Executive Director)  
 William Sack (Executive Director)

### Company Secretary and Chief Financial Officer

Nick Filipovic

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## Corporate

### Funding

As previously reported Byron is in the process of putting in place financing, which combined with existing production income, will support the Company's continued development plans in the SM73 field area.

### Issued Capital

As at 30 September 2019, Byron's issued capital comprised:-

Securities	Total issued	Quoted	Unquoted
Shares (ASX:BYE)	705,373,417	705,373,417	Nil
Options	50,600,000	Nil	50,600,000

During the September 2019 quarter Byron issued Metgasco Limited ("Metgasco") 10,000,000 fully paid ordinary shares for A\$ 2.5 million, upon conversion of 10,000,000 unlisted options, at A\$ 0.25 per security, by Metgasco.

### Loans

As at 30 September 2019, Byron's loans comprised:-

Repayment Date	US\$ M	A\$ M	US\$ Equivalent
31 December 2019	2.0	2.45	3.1
31 March 2021	2.0	2.1	3.4
<b>Total</b>	<b>4.0</b>	<b>4.55</b>	<b>6.5</b>

As previously reported, Byron had a short-term unsecured loan facility for US\$ 2.0 million and A\$ 3.1 million, equivalent to approximately US\$ 4.1 million at an exchange rate of A\$ 1 = US\$ 0.68 bearing interest at a rate of 10% pa ("the Loan Facility"), with US\$ 3.2 million sourced from four of the Company's directors (Messrs Battersby, Smith, Sands and Young) and the balance from two shareholders. Originally the Loan Facility was repayable on 30 November 2019. Five of the lenders have agreed to extend the repayment date of the Loan facility from 30 November 2019 to 31 March 2021, with interest rate and other terms remaining unchanged, while the remaining lender for A\$ 1.0 million, agreeing to extend the loan until 31 December 2019. Interest rate and security remain unchanged.

Byron established a second short term loan facility for US\$ 2.0 million and A\$ 1.45 million, equivalent to approximately US\$ 3.0 million at an exchange rate of A\$ 1 = US\$ 0.68 ("Loan Facility 2"), with US\$ 2.2 million sourced from four of the Company's directors (Messrs Battersby, Smith, Sands and Young). Loan Facility 2 is unsecured, repayable by 31 December 2019 bearing interest at a rate of 10% per annum.

## Reserves and Resources

Byron released its independent reserves and resources estimate to the ASX for the Company's projects in the shallow waters of the Gulf of Mexico on 19 September 2019. The independent reserves and resources estimates were prepared by Collarini Associates ("Collarini"), based in Houston, Texas, USA.

The combined reserves and resources, net to Byron, are as follows:

## Reserves and Resources (cont.)

Byron Energy Limited - Reserves and Resources (Net to Byron)				
Gulf of Mexico, offshore Louisiana, USA				
Remaining as at 30 June 2019 (Net to Byron)	Oil Mbbl	Gas MMcf	Oil % change	Gas % change
<b>Reserves (developed and undeveloped)</b>				
<b>Proved (1P)</b>	7,501	55,032	147.6%	13.9%
Probable Reserves	9,873	95,065	99.9%	18.9%
<b>Proved and Probable (2P)</b>	<b>17,374</b>	<b>150,097</b>	<b>118.1%</b>	<b>17.0%</b>
Possible Reserves	7,707	49,122	68.5%	9.2%
<b>Proved, Probable &amp; Possible (3P)</b>	<b>25,081</b>	<b>199,219</b>	<b>100.0%</b>	<b>15.0%</b>
<b>Total Prospective Resource</b>				
<b>Best Estimate (unrisked)</b>	<b>31,575</b>	<b>551,114</b>	<b>-11.7%</b>	<b>-6.9%</b>

**Reserves** - The aggregate 1P may be a very conservative estimate and the aggregate 3P may be a very optimistic estimate due to the portfolio effects of arithmetic summation.

**Prospective Resource** - The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbon.

On 17 October 2019 the Company updated its Prospective Resources for inclusion of the Lower O Sand from the Cutthroat area discussed below. With the inclusion of the Lower O Sand from the Cutthroat area discussed above, Byron's Prospective Resources for the SM58 have increased 2,065% since the announcement on 19 September. The following updated table contains all current Prospective Resources for Byron, including the Lower O Sand in SM58.

Byron Energy Limited Prospective Resources (net to Byron)			
Gulf of Mexico, offshore Louisiana, USA			
Best Estimate Unrisked 30 June 2019	Oil MBOE	Gas MMCF	MBOE (6:1)
SM 71	1,489	20,138	4,845
SM 74	0	0	0
SM 57 Block	1,531	75,243	14,072
SM 58 Block	11,216	29,448	16,124
SM 58 / SM 69 E2	2,260	1,976	2,589
SM 59 Block	17,356	164,431	44,761
EI 77	8,087	229,467	46,332
GI 95	334	44,388	7,732
<b>Total Prospective Resources (2019)</b>	<b>42,273</b>	<b>565,091</b>	<b>136,455</b>

## Reserves and Resources (cont.)

For additional information on the Company's reserves and resources, refer to the ASX releases date 19 September 2019 and 17 October 2019.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements of 19 September 2019 and 17 October 2019 and that all the material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

## Project Updates

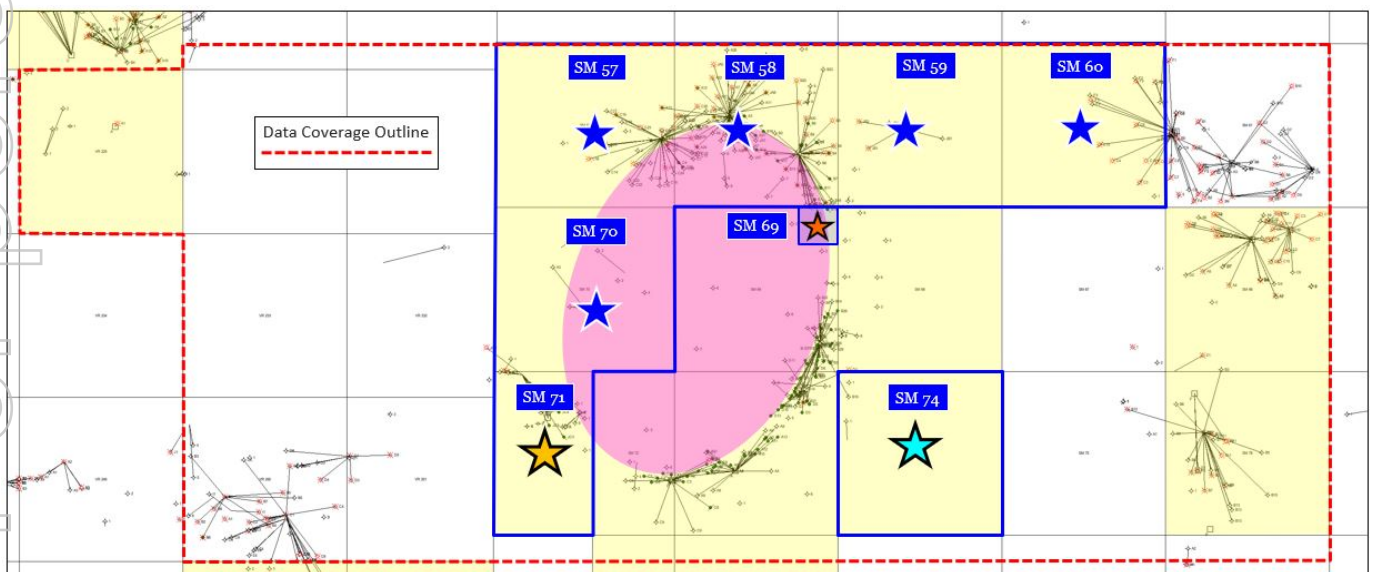
### Salt Dome Projects

#### 1. South Marsh Island 73 Salt Dome

The SM 73 field encompasses nine OCS lease blocks (81 square miles) which overlie a large piercement salt dome. The salt dome is responsible for providing the trapping mechanism for production in all portions of the SM73 field. The SM73 field is productive from discrete hydrocarbon-bearing sandstone reservoirs which are primarily trapped in three-way structural closures bound either by salt or stratigraphic thinning, on their updip edge. These reservoirs are Pleistocene to Pliocene age sands ranging in depth from 5,000 feet to 8,800 feet Total Vertical Depth ("TVD"). The majority of the field production has come from depths less than 7,500 feet in high quality sandstone reservoirs.

Byron is the operator and 100% working interest holder in 5 areas of interest around the SM73 field, comprising SM57/58/59/60/70 and north east portion of SM69, as shown below. Byron is also the operator of SM71 and SM74, where it has less than a 100% working interest.

### Byron Energy GOM South Marsh Island Leases and RTM Data Coverage Area



## Salt Dome Projects (cont)

### South Marsh Island 73 Salt Dome (cont)

#### (a) South Marsh Island 71

Byron owns the South Marsh Island block 71 ("SM71") a lease in the South Marsh Island Block 73 ("SM 73") field. Byron is the designated operator of SM71 and owns a 50% Working Interest ("WI") and a 40.625% Net Revenue Interest ("NRI") in the block, with Otto Energy Limited ("Otto") group holding an equivalent WI and NRI in the block. Water depth in the area is approximately 137 feet.

Oil and gas production from the Byron operated SM71 F platform began on 23 March 2018 from three wells.

#### (i) SM 71 Production

The F1 and F3 wells are producing in the primary D5 Sand reservoir and the F2 well is producing from the B55 Sand, a secondary exploration target.

As of 30 September 2019, the SM71 F facility has produced over 1.7 million barrels of oil (gross) since initial production began. The facility has also produced over 2.6 billion cubic feet of gas (gross) which, on a revenue basis, is approximately equivalent to an additional 140,000 barrels of oil.

#### (ii) Current Production

As of 30 September 2019, the SM71 platform gross production rate was approximately 3,100 barrels of oil per day and 3.0 million cubic feet of gas per day and no water from any of the wells. As of the date of this report, daily production rates are consistent with the daily production rates as of 30 September 2019.

#### (iii) SM 71 Production Statistics

Byron's share of SM 71 production for the quarter ended 30 September 2019 is shown in the table below.

SM71 Production (sales)	Sep 2019 Quarter	Jun 2019 Quarter	YTD 30 Sep 2019	YTD 30 Sep 2018
<b>Gross production</b>				
Oil (bbls)	264,126	264,992	264,126	324,595
Gas (mmbtu)	334,376	516,304	334,376	395,440
<b>Byron share of Gross Production (50% WI)</b>				
Oil (bbls)	132,063	132,496	132,063	162,298
Gas (mmbtu)	167,188	258,152	167,188	197,720
<b>Net production (Byron share 40.625% (after royalty))</b>				
Oil (bbls)	107,301	107,653	107,301	131,867
Gas (mmbtu)	135,840	209,749	135,840	160,648

## Salt Dome Projects (cont)

### South Marsh Island 73 Salt Dome (cont)

Oil production for the September 2019 quarter was in line with volumes achieved for the June quarter.

During September 2019 quarter, gross oil production averaged 2,871 barrels of oil per day (“bopd”).

SM71 Sale revenue (accrual basis) US\$ million	Sep 2019 quarter	Jun 2019 quarter	YTD 30 Sep 2019	YTD 30 Sep 2018
Net sales revenue (Byron share 40.625% after royalty)	6.5	7.3	6.5	9.6

For the quarter ended 30 September 2019, Byron’s share of net revenue was approximately US\$ 6.5 million compared to US\$ 7.3 million in June 2019 quarter, mainly due to lower realised oil prices.

Based on the high quality of Louisiana Light Sweet crude (“LLS”) produced at SM71, Byron receives a premium based on LLS verses West Texas Intermediate (“WTI”) price differentials. During the September 2019 quarter, Byron realised an average oil price after uplift for LLS price differentials and deductions for transportation, oil shrinkage and other applicable adjustments of US\$ 57.18 per bbl (US\$ 61.53 excluding transportation) compared to US\$ 62.41 per bbl and US\$ 66.74 per bbl respectively for the June quarter.

Byron realised an average price after transportation deductions of approximately US\$ 2.03 per mmbtu during the September quarter (US\$ 2.41 excluding transportation) compared to US\$ 2.28 per mmbtu and US\$ 2.66 per mmbtu respectively for the June quarter.

Gas was not processed for NGLs as direct gas sales delivered higher proceeds due to suppressed NGL commodity pricing during the quarter.

### (b) South Marsh Island 74

The Byron operated SM74 D-14 well, the first test well on the South Marsh Island 74 block, spudded on 15 May 2019 and was plugged and abandoned in July 2019.

### (c) South Marsh Island 58

Byron acquired South Marsh Island Block 58 (“SM58”) and associated SM69 assets in March 2019 for US\$ 4.25 million.

Byron holds all of the operator’s rights, title, and interest in and to the SM58 Lease Block to a depth of 13,639 ft. subsea with 100% WI and 83.33% NRI and a non-operated 53% WI (44.167% NRI) in the associated producing assets being the SM69 E Platform, the E1 wellbore, and the E platform to B platform pipelines located within SM69; all part of the greater SM73 Field. Below 13,639 ft. subsea, Byron has a 50% WI (41.67% NRI) under a pre-existing exploration agreement.

SM58 is located immediately between Byron’s SM57 and SM59 leases, which when combined provide Byron with contiguous exploration acreage across the northern half of the SM73 Field.

On 6 August 2019, the Enterprise 263 jack-up drilling rig commenced drilling operations on the Byron operated SM58 011 well, the Company’s first test well on its recently acquired SM58 block.

## **Salt Dome Projects (cont)**

### **South Marsh Island 73 Salt Dome (cont)**

The SM58 011 well was designed to test Byron's Cutthroat Prospect, targeting the highly productive normally pressured O Sands which account for about half of the 35 million barrels of oil produced on SM58 since production began in 1964.

Byron's Cutthroat Prospect was identified and evaluated using high-tech Reverse Time Migration (RTM), Vector Image Processing (VIP) and Full Waveform Inversion (FWI) 3D seismic processing. Those datasets together revealed an undrilled trap designated the Cutthroat prospect within the central portion of SM58 that lies at the same structural depth as several oil wells immediately to the west. The Cutthroat prospect area was not defined by older seismic processing versions, but was imaged through careful reprocessing by WesternGeco, a Schlumberger company. Byron has identified several other drilling opportunities on the SM58 block using the same dataset.

Byron planned to drill the SM58 011 well to a depth of 11,466 feet Measured Depth ("MD") equivalent to 10,418 feet True Vertical depth ("TVD") and was expected to take approximately one month to drill and evaluate from the time the rig was on location.

The target O Sand in the SM58 011 well was encountered at a depth of 10,435 feet MD (9,340 TVD) in line with predrill expectations. Logging While Drilling ("LWD") Gamma Ray and Resistivity tools and Mudlog shows indicated the presence of hydrocarbons beginning at the top of the O Sand to a depth of 10,875 feet MD. Based on LWD logs, the O Sand appeared to be a very high quality and well-developed reservoir.

A Quad-combo suite of Electric, Porosity, and Sonic logs were obtained in the well bore by running Measurement After Drilling logs (MADPASS). Third party petrophysical calculations confirmed 302 feet of gross hydrocarbon bearing O Sand with 271 feet of net True Vertical Thickness ("TVT") were logged in the well bore and the O Sand package is filled to base. The logs confirmed a thick, clean, high quality O Sand with average porosity above 30 percent. The SM58 011 well has logged the thickest O Sand hydrocarbon column within the entire SM73 field in which over 350 wells have been drilled.

Byron also collected mud gas isotube data from the well like data collected at the Company's SM71 lease. Analysis of mud gas isotope samples indicated the O Sand hydrocarbon is a liquids rich gas with high quality oil, typical of O Sand completions on the block. The isotope analysis indicated that the hydrocarbons in the SM58 011 well are from the same source rock as hydrocarbons produced from the Byron operated SM71 F platform where the stratigraphic equivalent D5 Sand has now produced over 1.7 million barrels of high-quality oil and 2.6 billion cubic feet of gas.

Final liquids content of the O Sand will not be fully known until the well is completed and placed into production but are expected to range from 30 – 100 bbls of oil per million cubic feet of gas. Based on nearby well control and the fact the SM58 011 well is drilled high on structure, it is likely that there is a downdip oil leg and if so, it will be produced in the SM58 011 well later in its life.

Due to the outstanding result achieved in the SM58 011 well, it was decided to set casing across the very thick upper O Sand accumulation to ensure its protection and to optimise the cement job across the entire pay interval, to evaluate the lower O Sand.

Because of tight hole conditions a conditioning run was necessary prior to setting casing. While running in with a simple hole opener assembly, no resistance or issues were encountered until reaching a depth of 10,825 feet MD below the base of the O sand, whereby the hole opener immediately became stuck. Consequently, it was decided

## **Salt Dome Projects (cont)**

### **South Marsh Island 73 Salt Dome (cont)**

to bypass the well and redrill the bottom 900 feet of the SM58 011 so that the entire O Sand can ultimately be completed for production in the SM58 011 BP1 well.

The SM58 011 BP01 well was drilled to the casing depth of 10,811 feet MD in about 36 hours with no drilling issues. Interestingly, even though the bypass well is only 60 feet from the original hole and structurally flat to the original hole, the pay interval encountered was 30' thicker than the Upper O Sand with a TVT thickness net pay of 301 feet.

After reaching casing depth, on 11 September, Byron began running 7 5/8" casing to a depth of 7,940 feet MD at which time, while picking up a casing joint with the elevators, the pin holding the break drum catastrophically failed releasing the block, top drive and casing running tool, with approximately 60,000 lbs of pipe and equipment falling several feet before becoming wedged in between the stabbing board and racked back heavy weight drill pipe. The 7 5/8" casing became firmly wedged in the hole and could not be moved up or down. It was determined, by the running of a gauge ring tool on wireline, that the interior of the casing was undamaged.

On 19 September 2019, 5 1/2" liner was run to a depth of 10,811 feet MD in the SM58 011 BP01 wellbore and cemented in place across the Upper O Sand which means the hydrocarbon bearing Upper O Sand is now protected by the liner and is available for a future completion.

After picking up a slim hole drilling assembly with a 4 3/4" drill bit, drilling resumed on Sunday morning, 22 September 2019, (USCDT) to test the Lower O Sand section of the Cutthroat Prospect. After approximately 300 feet of measured depth hole had been drilled, mudlogging confirmed three distinct hydrocarbon shows indicating the presence of sand with fluorescence noted in two of those intervals

Byron deepened the 4 3/4" hole an additional 70 feet to a final total depth of 11,179 feet MD. The hole conditions were extremely unstable primarily due to the very slim hole that was required as a result of the casing incident, described earlier. This problem was further exacerbated by the fact that the well was drilling a thick, high-quality hydrocarbon saturated sand sequence and it was deemed imprudent to safely continue drilling under these difficult conditions. At total depth, Byron made several attempts to run wireline logs in the open hole section to total depth but was unable to do so.

The purpose of deepening the SM58 011 BP01 well below the casing was to determine if a strong seismic anomaly below the Upper O Sand was also caused by hydrocarbons. The Lower O Sand seismic anomaly covers an area approximately two thirds the size of the Upper O Sand. While drilling this well the Company had observed that where wireline data was collected over the Upper O Sand, and can be compared to the mud log, the mud log reliably differentiates hydrocarbon bearing sands from water bearing or tight sands. In the lower part of the hole, the well bore encountered over 180 feet of high-quality mud log shows indicating the likely presence of hydrocarbons in good quality thick sands in the Lower O Sand section based on similar responses in the Upper O Sand.

Based on the available mud log, the hole section between 11,000 feet and 11,179 feet indicated the presence of high quality sand with samples that had dull yellow fluorescence with a fast streaming cut and a bright milky residue ring which is typically associated with oil reservoirs in this region. Byron also collected mud gas isotope data from the slim hole section and these samples are then sent to a lab for analysis. The isotube data collected



## **Salt Dome Projects (cont)**

### **South Marsh Island 73 Salt Dome (cont)**

over this same 179-foot interval, had computed hydrocarbon ratios that were identical to those ratios recovered from samples that Byron collected from the D5 Sand reservoir at SM71. Based on this, the Company would expect to produce similar high-quality light oil from this 179-foot interval. Importantly it should also be noted that the wellbore only penetrated the upper half of the seismic anomaly and the base of this interval has not yet been fully drilled.

Whilst it was not possible to collect sufficient open hole electric logging data to compute a pay count for this well, Byron is confident based on the mud log shows and the isotube data, that commercial hydrocarbons are present in the Lower O Sand.

Accordingly, the first development well that Byron will drill from the future SM58 G platform will be designed to test an optimum location to produce the hydrocarbon in the Lower O Sand Cutthroat prospect. This well will be designed with larger casing sizes and the Company will also investigate the use of synthetic mud systems to help mitigate the drilling problems encountered in the deeper section.

The mudline suspension was completed on 17 October 2019 and the rig was released on 20 October. Originally Byron expected the drilling of the well to be completed in approximately one month. Unfortunately, drilling difficulties resulted in the well taking approximately two months to drill and mudline suspend.

The Company's third-party reserve engineers, Collarini Associates ("Collarini"), based in Houston, Texas, USA, provided an estimate of the Prospective Resource for the Lower O Sand penetrated by the SM58 011 BP01 well utilizing all available mud log and mud gas isotube data. The Lower O Sand over the Cutthroat prospect was assigned 8,074 Mbbls of oil and 10.2 Bcf of gas net to Byron.

An additional Lower O Sand prospect is now included in the resource update as the North Cutthroat Prospect. The North Cutthroat Lower O Sand prospect is based on a high-quality seismic amplitude that lies upthrown to the main Lower O Sand prospect at Cutthroat. This prospect will be further evaluated with information gained from the drilling of the G2 well. The North Cutthroat Lower O Sand prospect has net to Byron a Prospective Resource of 2,624 Mbbls of oil and 3.2 Bcf of gas.

Collarini's overall Prospective Resources for the Lower O Sand on SM58 are 10,698 Mbbls and 14.0 Bcf of gas (net to Byron). With the inclusion of the Lower O Sand from the Cutthroat area discussed above, Byron's Prospective Resources for the SM58 have increased 2,065%.

For further information on SM58 reserves and prospective resources refer to the Company's ASX announcements on 19 September 2019 and 17 October 2019.

#### **(i) SM 58 Production Statistics**

Byron's share of production for the quarter ended 30 September 2019 is shown in the table below.

## Salt Dome Projects (cont)

### South Marsh Island 73 Salt Dome (cont)

SM58 Production (sales)	Sep 2019 quarter	Jun 2019 quarter	YTD 30 Sep 2019	YTD 30 Sep 2018
<b>Gross production</b>				
Oil (bbls)	9,821	10,525	9,821	n/a
Gas (mmbtu)	2,438	2,524	2,438	n/a
<b>Byron share of Gross Production (53% WI)</b>				
Oil (bbls)	5,205	5,613	5,205	n/a
Gas (mmbtu)	1,292	1,346	1,292	n/a
<b>Net production (Byron share 44.167% (after royalty))</b>				
Oil (bbls)	4,338	4,649	4,338	n/a
Gas (mmbtu)	1,077	1,115	1,077	n/a

SM58 Sale revenue (accrual basis) US\$ million	Sep 2019 quarter	Jun 2019 quarter	YTD 30 Sep 2019	YTD 30 Sep 2018
Net sales revenue (Byron share 44.167% after royalty)	0.2	0.3	0.2	n/a

#### (d) South Marsh Island 57 and 59

Byron currently holds a 100% WI and an 81.25% NRI in SM 57/59. Water depth in the area is approximately 125 feet.

The SM57/59 blocks, as part of the larger SM71 project area, are also focus areas of the seismic processing project, which Byron has undertaken with Schlumberger's subsidiary WesternGeco to help evaluate potential future exploration drill sites.

#### (e) South Marsh Island 69

On 1 April 2019, Byron announced that it has signed a Letter of Intent with SM69 leaseholders to drill a SM69 E2 development well off the recently acquired E Platform to earn interest in the north-east portion of the SM69 lease block. Byron and SM69 leaseholders are finalising a Joint Exploration Agreement for the E2 well and the north-east ¼ of the north east ¼ of SM69.

By funding 100% of the well Byron will earn 100% WI and 83.33% NRI until E2 Project Payout, at which time and at the leaseholder's election, Byron's NRI will either adjust to 76.33% OR the leaseholders can convert to a 30% WI and Byron's interest in the project would adjust to 70% WI with an unburdened 58.33% NRI.

## **Salt Dome Projects (cont)**

### **South Marsh Island 73 Salt Dome (cont)**

During the September quarter Byron and the SM69 leaseholders finalised documentation of a formal Joint Exploration Agreement relating to the E2 well and the north-east 1/4 of the north-east 1/4 of SM69 lease block and related Production Handling Agreement.

If the first well on SM 69 is successful, first production from the E2 well is expected within six to twelve months.

For additional information of the SM69 E2 development well agreement, refer to the Company's ASX release dated 1 April 2019.

### **(f) South Marsh Island 60**

Byron Energy Inc, a wholly owned subsidiary of the Company, acquired the South Marsh Island 60 lease ("SM60" at the Gulf of Mexico, Outer Continental Shelf ("OCS") Lease Sale 252 held in New Orleans, Louisiana on 20 March 2019.

From 1978 through 2006, nine wells completed for production on SM60 produced a combined total of 385 billion cubic feet of gas and 787,000 barrels of oil. SM60 lies within the area of Byron's RTM reprocessing project which was used to evaluate the prospect potential on the block.

### **(g) Production Platform Purchase**

As reported on 9 May 2019 Byron purchased a production platform consisting of two decks, a jacket and production equipment from a private company for a total price of US\$ 1.0 million.

Significant time savings of six to nine months and cost savings in the order of US\$ 4 to 6 million are expected through the purchase of this facility. Overall, the modifications to the facility are moderate.

Because the bulk of engineering design work is already done, engineering costs and design time will also be substantially lower.

Following the substantial hydrocarbon accumulation unearthed by the drilling of SM58011 well, Byron is now moving forward with the development of SM58. Initial engineering studies on structural modifications to the jacket and decks have been completed in order to fast track construction on the platform. Work is well underway to remove existing production equipment from the platform for refurbishment. The facility is being redesigned to accommodate up to 8,000 barrels of oil per day, 80 million cubic feet of gas per day and 8,000 barrels of water per day. Pipeline design and route surveying is also in progress.

### **(h) South Marsh Island 70**

Byron has a 100% WI and 87.5% NRI (royalty rate of 12.5%) South Marsh Island 70 ("SM 70") at the Gulf of Mexico OCS Lease Sale 250 held on 21 March 2018 in New Orleans, Louisiana.

Byron has identified several higher risk exploratory leads on SM 70. These leads are being evaluated following completion Byron's South Marsh Island project seismic reprocessing work in late 2018.

No material activity was undertaken on SM70 during the September 2019 quarter.

## **Salt Dome Projects (cont)**

### **2. Eugene Island blocks 62, 63, 76 and 77**

Byron acquired Eugene Island blocks 62, 63, 76 and 77 ("EI 62/63/76/77"), at Gulf of Mexico OCS Lease Sale 250 held on 21 March 2018 in New Orleans, Louisiana. Water depth in the area is approximately 20 feet.

Byron currently holds a 100% WI and an 87.5% NRI in EI 62/63/76/77, reflecting the recently reduced Federal Government Royalty of 12.5% versus pre-2017 rate of 18.75%.

EI 62/63/76/77 were designated as the Eugene Island 77 Field in the 1960's and have produced 362 billion cubic feet of gas and 6.5 million barrels of oil from sands trapped by the Eugene Island 77 salt dome. Initial production from the field began in 1957. There is no production on these blocks currently.

The EI 63 and 76 leases were previously held by the Company before being relinquished in January 2018.

In 2014, Byron engaged WesternGeco (a Schlumberger group company) to undertake a proprietary RTM of its 3D seismic data over the entire four block Eugene Island 77 Field. As a result of this work, Byron identified several exploration and development opportunities. In 2017 and 2018, Byron undertook a detailed year-long reservoir analysis which resulted in the identification of several low risk development opportunities which are updip from productive reservoirs. On the basis of this work, Byron acquired EI 62/63/76/77 at the OCS Lease Sale 250. As a result of this detailed work, in combination with the RTM, Byron significantly upgraded the reserve potential of EI 62/63/76/77.

In the September 2018 quarter, Byron began a reprocessing effort similar that undertaken on the SM71 Project Area with WesternGeco over all four Eugene Island blocks leased by the Company. The objectives of this work were to improve seismic imaging in some geologically complex portions of the project. The scope of work is focussed on refining the sediment and salt velocity model. The final products include new RTM migrations, Kirchhoff migrations and inversion products. VIP imaging will also be viable as post of the work scope and should prove to be extremely helpful in mapping the sediment - salt interface and delineating prospects. Final deliverables were received during the June quarter 2019.

Drilling plans for EI 77 have been paused, with SM58 now being brought forward ahead of the EI77 field wells.

### **3. Main Pass 293, 305 & 306**

Byron currently holds a 100% WI and an 87.50% NRI in Main Pass 293, 305 & 306 ("Main Pass 306 Field") acquired at the Gulf of Mexico, Outer Continental Shelf ("OCS") Lease Sale 251 ("Lease Sale 251") held in New Orleans, Louisiana on 15 August 2018.

The three leases comprise the MP 306 field as formerly designated by the Bureau of Ocean Energy Management ("BOEM"). The MP 306 Field was discovered in 1969 and lies in approximately 200 feet of water. Total produced hydrocarbons from the field are 96 million barrels of oil and 107 bcf of gas from 172 of the 249 total wells drilled. The field ceased production in late 2009 and the last well drilled on any of these blocks was in 2004. The production was from a number of sands ranging from a depth of 4,000 to 9,000 feet.

The structural complexity of the salt dome combined with the stratigraphic variation of the trapping sands and possible deeper stratigraphic targets makes this salt dome an ideal candidate for RTM seismic imaging, similar to Byron's operated SM 71 salt dome project.

No material activity was undertaken on Main Pass 306 during the September 2019 quarter.

## ***Non-Salt Dome Projects (Byron Operated)***

### **1. Bivouac Peak Leases**

Byron announced on 11 October 2018, that the Bivouac Peak state leases were relinquished in 2018 and the private leases were relinquished during the September quarter 2019.

### **2. Grand Isle Block 95**

Grand Isle Block 95 ("GI95") is located in US Federal waters, approximately 100 miles southeast of New Orleans, Louisiana, at a water depth of approximately 201 feet. The Company has a 100% operated WI and an 87.5% NRI, reflecting the recently reduced Federal Government Royalty of 12.5% versus pre-2017 rate of 18.75%. Water depth in the area is approximately 197 feet.

Byron acquired the GI95 lease at Central Gulf of Mexico OCS Lease Sale 249 held on 16 August 2017 in New Orleans, Louisiana.

No material activity was undertaken on GI 95 during the September 2019 quarter.

## Properties

As at 30 September 2019, Byron's portfolio of properties, all in the shallow waters of the Gulf of Mexico, and coastal marshlands of Louisiana, USA comprised:-

Properties	Operator	Interest WI/NRI* (%)	Lease Expiry Date	Area (Km <sup>2</sup> )
South Marsh Island Block 71	Byron	50.00/40.625	Production	12.16
South Marsh Island Block 57	Byron	100.00/81.25	June 2022	21.98
South Marsh Island Block 59	Byron	100.00/81.25	June 2022	20.23
South Marsh Island Block 60	Byron	100.00/87.50	June 2024	20.23
South Marsh Island Block 58 (Excl. E1 well)	Byron	100.00/83.33**	Production	20.23
South Marsh Island Block 58 (E1 well in S ½ of SE ¼ of SE ¼ and associated production infrastructure in NE ¼ of NE ¼ of SM69#)	Ankor	53.00/44.167		
South Marsh Island Block 74***	Byron	100.00/81.25	June 2022	20.23
South Marsh Island Block 70	Byron	100.00/87.50	June 2023	22.13
Eugene Island Block 62	Byron	100.00/87.50	June 2023	20.23
Eugene Island Block 63	Byron	100.00/87.50	June 2023	20.23
Eugene Island Block 76	Byron	100.00/87.50	June 2023	20.23
Eugene Island Block 77	Byron	100.00/87.50	June 2023	20.23
Main Pass Block 293	Byron	100.00/87.50	October 2023	18.46
Main Pass Block 305	Byron	100.00/87.50	October 2023	20.23
Main Pass Block 306	Byron	100.00/87.50	October 2023	20.23
Grand Isle Block 95	Byron	100.00/87.50	September 2022	18.37

# Byron has also entered into a Joint Exploration Agreement to earn a 100% WI in the proposed E2 well (see pp 10-11 for details).

\* Working Interest ("WI") and Net Revenue Interest ("NRI").

\*\* 100.00% WI to a depth of 13,639 ft TVD and 50% WI below 13,639 ft TVD.

\*\*\* Metgasco Limited ("Metgasco") paid 40% (US\$ 4.5 million, of the initially estimated drilling costs of SM74 D14 to earn a 30% WI in SM74. On 18 July 2019 Byron announced that agreement had been reached with Metgasco to limit Metgasco's financial exposure to the SM74 project. Byron capped Metgasco's additional costs for the drilling of SM74 D14 well at A\$ 1.75m (in addition to US\$ 4.5 million already contributed by Metgasco).

## **Glossary**

Bbl = barrels  
Bcf = billion cubic feet  
Boe = barrels of oil equivalent  
Bopd = barrels of oil per day  
Btu = British Thermal Units  
mcf = thousand cubic feet of gas  
mcfcpd = thousand cubic feet of gas per day  
mmcf = million cubic feet  
Mbbbl = thousand barrels of oil  
MMbbbl = million barrels of oil  
Mboe = thousand barrels of oil equivalent  
MMboe = million barrels of oil equivalent  
Mcf = thousand cubic feet  
MMcf = million cubic feet  
mmbtu = million British Thermal Units

## **Conversions**

6:1 BOE conversion ratio for gas to oil; 6:1 conversion ratio is based on an energy equivalency conversion method and does not represent value equivalency

1 mcf = 1.09 btu's currently for SM 71 production; the heat content of SM 71 gas may vary over time.

## **Forward Looking Statements**

This document may contain forward-looking information. Forward-looking information is generally identifiable by the terminology used, such as "expect", "believe", "estimate", "should", "anticipate" and "potential" or other similar wording. Forward-looking information in this document includes, but is not limited to, references to: well drilling programs and drilling plans, estimates of potentially recoverable resources, and information on future production and project start-ups. By their very nature, the forward-looking statements contained in this document require Byron and its management to make assumptions that may not materialise or that may not be accurate. Although Byron believes its expectations reflected in these statements are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements.

## Appendix 5B

### Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

<b>Name of entity</b>		
Byron Energy Limited		
<b>ABN</b>	<b>Quarter ended ("current quarter")</b>	
88 113 436 141	30 September 2019	
<b>Consolidated statement of cash flows</b>	<b>Current quarter US\$'000</b>	<b>Year to date (3.months) US\$'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers (net of royalties)	7,102	7,102
1.2 Payments for		
(a) exploration & evaluation	(11,916)	(11,916)
(b) development	(475)	(475)
(c) production	(794)	(794)
(d) staff costs	(486)	(486)
(e) administration and corporate costs	(489)	(489)
1.3 Dividends received (see note 3)		
1.4 Interest received	3	3
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Research and development refunds		
1.8 Other (provide details if material)		
- Refundable Security Deposits	-	-
- Cash contributions from farminees / JV partners	1,213	1,213
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(5,842)</b>	<b>(5,842)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	-	-
(b) tenements		
(c) investments	-	-



**Appendix 5B**  
**Mining exploration entity and oil and gas exploration entity quarterly report**

<b>Consolidated statement of cash flows</b>	<b>Current quarter US\$'000</b>	<b>Year to date (3.months) US\$'000</b>
(d) other non-current assets	-	-
2.2 Proceeds from the disposal of:		
(a) property, plant and equipment	-	-
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>-</b>	<b>-</b>
<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of shares	-	-
3.2 Proceeds from issue of convertible notes	-	-
3.3 Proceeds from exercise of share options	1,742	1,742
3.4 Transaction costs related to issues of shares, convertible notes or options	-	-
3.5 Proceeds from borrowings	2,990	2,990
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	(27)	(27)
<b>3.10 Net cash from / (used in) financing activities</b>	<b>4,705</b>	<b>4,705</b>
<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of period	6,783	6,783
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(5,842)	(5,842)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4 Net cash from / (used in) financing activities (item 3.10 above)	4,705	4,705
4.5 Effect of movement in exchange rates on cash held	(89)	(89)
<b>4.6 Cash and cash equivalents at end of period</b>	<b>*5,557</b>	<b>*5,557</b>

\*Note: The cash balance shown above does not include US\$ 0.50 million paid into an escrow account for the subsequent payment of the SM74 D-14 Raptor well costs.

**Appendix 5B**  
**Mining exploration entity and oil and gas exploration entity quarterly report**

<b>5. Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter US\$'000</b>	<b>Previous quarter US\$'000</b>
5.1 Bank balances	5,557	6,783
5.2 Call deposits		
5.3 Bank overdrafts		
5.4 Other		
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>5,557</b>	<b>6,783</b>

<b>6. Payments to directors of the entity and their associates</b>	<b>Current quarter US\$'000</b>
6.1 Aggregate amount of payments to these parties included in item 1.2	260
6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2	

<b>7. Payments to related entities of the entity and their associates</b>	<b>Current quarter US\$'000</b>
7.1 Aggregate amount of payments to these parties included in item 1.2	-
7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2	

<b>8. Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	<b>Total facility amount at quarter end \$'000</b>	<b>Amount drawn at quarter end \$'000</b>
8.1a Loan facilities (unsecured and repayable by 31 December 2019 and bearing 10% interest p.a.)	A\$ 2,450 & US\$ 2,000	A\$ 2,450 & US\$ 2,000
8.1b Loan facilities (unsecured and repayable by 31 March 2021 and bearing 10% interest p.a.)	A\$ 2,100 & US\$ 2,000	A\$ 2,100 & US\$ 2,000
8.2 Credit standby arrangements	-	-
8.3 Other (please specify)	-	-
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

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<b>9. Estimated cash outflows for next quarter</b>		<b>US\$'000</b>
9.1	Exploration and evaluation	10,600
9.2	Development (platform refurbishment)	4,600
9.3	Production	500
9.4	Staff costs	600
9.5	Administration and corporate costs	600
9.6	Other (provide details if material) loan repayments	3,700
<b>9.7</b>	<b>Total estimated cash outflows</b>	<b>20,600</b>

<b>10.</b>	<b>Changes in tenements (items 2.1(b) and 2.2(b) above)</b>	<b>Tenement reference and location</b>	<b>Nature of interest</b>	<b>Interest at beginning of quarter</b>	<b>Interest at end of quarter</b>
10.1	Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced	Bivouac Peak lease		43%	0%
10.2	Interests in mining tenements and petroleum tenements acquired or increased				

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**Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here:   
(Company secretary)

Date: 31 October 2019

Print name: Nick Filipovic.

**Notes**

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

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