pulse seismic

TSX: PSD
OTCQX: PLSDF

2019 Year-End Financial Report

FINANCIAL HIGHLIGHTS

(thousands of dollars except per share data, numbers of shares and kilometres of seismic data)	Three months ended December 31, **2019**	Three months ended December 31, 2018	Years ended December 31, **2019**	Years ended December 31, 2018
Revenue				
Data library sales	**5,281**	4,286	**23,635**	10,076
Other revenue	**83**	27	**520**	112
Total revenue	**5,364**	4,313	**24,155**	10,188
Amortization of seismic data library	**3,500**	1,811	**14,200**	7,337
Net earnings (loss)	**(759)**	1,024	**(3,411)**	(1,730)
Per share basic and diluted	**(0.01)**	0.02	**(0.06)**	(0.03)
Cash provided by operating activities	**1,127**	2,457	**8,605**	(3,250)
Per share basic and diluted	**0.02**	0.05	**0.16**	(0.06)
Cash EBITDA[(a)]	**3,879**	3,209	**17,557**	5,037
Per share basic and diluted[(a)]	**0.07**	0.06	**0.33**	0.09
Shareholder free cash flow[(a)]	**2,981**	2,616	**13,605**	4,671
Per share basic and diluted[(a)]	**0.06**	0.05	**0.25**	0.09
Capital expenditures				
Seismic data purchases, digitization and related costs	**-**	**-**	**61,029**	62
Property and equipment	**41**	9	**439**	18
Total capital expenditures	**41**	9	**61,468**	80
Weighted average shares outstanding				
Basic and diluted	**53,793,317**	53,793,317	**53,793,317**	53,838,106
Shares outstanding at period-end			**53,793,317**	53,793,317
Seismic library				
2D in kilometres			**829,207**	450,000
3D in square kilometres			**65,310**	28,956

FINANCIAL POSITION AND RATIOS

(thousands of dollars except ratios)	**December 31, 2019**	December 31, 2018
Working capital	**596**	25,804
Working capital ratio	**1.11:1**	15:1
Cash and cash equivalents	**1,356**	23,016
Total assets	**69,807**	38,847
Long-term debt	**31,511**	–
Cash EBITDA	**17,557**	5,037
Shareholders' equity	**31,973**	35,238
Long-term debt to cash EBITDA ratio	**1.79**	0.00
Long-term debt to equity ratio	**0.99**	0.00

(a) This non-GAAP financial measure is defined, calculated and reconciled to the nearest GAAP financial measures in the Management's Discussion and Analysis.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

YEAR ENDED DECEMBER 31, 2019

The Annual Meeting of Shareholders of Pulse Seismic Inc. will be held on Thursday, April 23, 2020 at 3:00 p.m. MDT in the Cardium Room of the Calgary Petroleum Club, located at 319 – 5th Avenue S.W., Calgary, Alberta.

CONTENTS

The following Management's Discussion and Analysis (MD&A) of the financial condition and results of operations of Pulse Seismic Inc. ("Pulse" or "the Company") for the year ended December 31, 2019 was prepared taking into consideration information available to February 12, 2020 and is supplemental to the audited consolidated financial statements and related notes for the year ended December 31, 2019. Throughout this MD&A reference will be made in the text and tables to "2019", which refers to the year ended December 31, 2019, and to "2018", which refers to the year ended December 31, 2018.

The consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS) with comparative figures for the prior year. Certain comparative figures have been reclassified to conform to the current year's presentation. The consolidated financial statements and the MD&A were reviewed by Pulse's Audit and Risk Committee and approved by Pulse's Board of Directors. All financial information is reported in Canadian dollars. This MD&A discusses matters which Pulse's management considers material. Management determines whether information is material based on whether it believes a reasonable investor's decision whether or not to buy, sell or hold shares in the Company would likely be influenced or changed if the information were omitted or misstated. Readers should also read the cautionary statement in "Forward-Looking Information".

OVERVIEW

ABOUT PULSE

Pulse is a market leader in the acquisition, marketing and licensing of two-dimensional (2D) and three-dimensional (3D) seismic data for the energy sector in Western Canada. Seismic data is used by oil and natural gas exploration and development companies to identify portions of geological formations that have the potential to hold hydrocarbons. Seismic data is used in conjunction with well logging data, well core comparisons, geological mapping and surface outcrops to create a detailed map of the Earth's subsurface at various depths.

Pulse owns the largest licensable seismic data library in Canada, currently consisting of approximately 65,310 net square kilometres of 3D seismic and 829,207 net kilometres of 2D seismic. The library extensively covers the Western Canada Sedimentary Basin (WCSB), where most of Canada's oil and natural gas exploration and development occur.

Pulse calculates net kilometres of 2D data and net square kilometres of 3D data by multiplying the number of kilometres of seismic data in each 2D line and the number of square kilometres of seismic data in each individual 3D seismic dataset by Pulse's percentage of ownership in each.

SEISMIC DATA

Seismic data is an essential part of the oil and natural gas exploration and development process. Companies engaged in oil and natural gas exploration and development use seismic data to assist in exploring for and developing new reserves and in establishing the extent of existing reserves. In acquiring seismic data, acoustical energy waves are transferred from an energy source at or near the surface of the Earth to the subsurface. The seismic waves reflect off various geological beds or strata in the Earth's subsurface. Sophisticated sensors and recording instruments at the surface collect the reflected waves and convert them to digital form. The data is subsequently processed and an image of the subsurface formations is created, providing explorationists with valuable data on the potential of a particular area to yield oil or natural gas reserves, and assisting in the selection of drilling locations.

2D SEISMIC

2D seismic data is measured in linear kilometres and after processing provides a sectional illustration of geological formations directly below the line on which the data was acquired. 2D seismic can extend over a distance spanning many kilometres. Intersecting 2D lines can enable explorers to map large pools of oil and natural gas, but without the precision required for smaller or more complex targets. Exploration companies typically use 2D seismic to get a sense of the regional geology of an area they think is prospective for oil and natural gas. 2D seismic data continues to be used to generate regional leads and prospects in oil and natural gas exploration areas.

3D SEISMIC

3D seismic data is measured in square kilometres and after processing provides map-like overhead views as well as three-dimensional visualizations of the subsurface geology. 3D seismic data is shot in grids, generating a three-dimensional image of the subsurface. 3D seismic data enables a more precise definition of geologically complex targets, facilitating precise placement of oil and natural gas wells. 3D seismic is generally used to zero-in on a discrete area of geological interest initially identified with 2D seismic. 3D seismic data is particularly important for horizontal drilling, unconventional plays (such as shale gas and tight sands) and complex conventional drilling. Typical 3D seismic surveys cover an area anywhere from a few square kilometres to several hundred square kilometres.

MISSION AND STRATEGY

Pulse is a pure-play seismic data library company focused on the acquisition, marketing and licensing of seismic data to the western Canadian oil and natural gas sector. The Company's business model is designed to generate a growing stream of cash flow by repeatedly licensing the data in its seismic data library to oil and natural gas companies. Pulse's strategy is to pursue growth opportunities that meet its financial and technical criteria while maintaining a low cost structure.

Current seismic processing and visualization software allows historical 2D and 3D data to be reprocessed and reinterpreted, thereby maintaining the technical usefulness and marketability of historical data and, through repeated licensing sales, generating recurring revenue. The Company is continuously seeking and evaluating opportunities to expand its data library by acquiring high-quality 2D and 3D datasets that cover some of western Canada's most prospective current exploration regions, are complementary to its current library, and are available at favourable valuations. This is accomplished in two ways. Pulse purchases proprietary rights to complementary 2D and 3D seismic datasets when the opportunity arises, and it partners with customers on surveys for new 3D seismic data. Participating customers are provided with a licensed copy while Pulse retains proprietary rights to the seismic data acquired. Pulse uses Company personnel to market and manage participation surveys, and subcontracts field acquisition activities to third parties.

ECONOMIC ENVIRONMENT AND SEISMIC INDUSTRY

Pulse has been successful throughout prior commodity price cycles, due to its low cost structure and ability to generate a high level of shareholder free cash flow relative to revenue. Shareholder free cash flow is a non-GAAP measure that the Company considers important in evaluating its financial performance.

Pulse's success depends on its ability to provide seismic coverage over the geographical areas associated with certain geological development areas or "play types" that the exploration and development sector focuses on in a given period. Activity in various plays is driven by commodity prices, geological understanding, the economic application of available and improving technologies and the availability of oil and natural gas processing and transportation egress ("take-away") capacity at reasonable cost. Pulse has worked diligently through the years to enlarge its coverage.

The oil and natural gas exploration and development industry targets natural gas reservoirs that are high in natural gas liquids and crude oil, lying in unconventional shale and less-permeable or tight formations. 2D and 3D seismic data are important tools for these plays. 2D seismic data is used to map the regional faults in shale gas prospects and 3D seismic data is used to map the exact contours of variable reservoirs, as well as small-scale fractures in shale formations, to plan accurate paths for horizontal wells.

Pulse's business results depend to a large extent on the level of capital spending on exploration activities by oil and natural gas companies. A sustained increase or decrease in the price of natural gas or crude oil, therefore, which could have a material impact on exploration activities, could also materially affect the Company's revenue, financial position, results of operations, cash EBITDA and shareholder free cash flow. The relationship is not direct, however, and the Company has generated high revenue in periods of weak oil and natural gas prices and vice-versa.

KEY PERFORMANCE INDICATORS

The key performance indicators used by Pulse's management to analyze business results are seismic data library sales, net earnings, cash EBITDA and shareholder free cash flow. The definitions, calculations and reconciliations of cash EBITDA and shareholder free cash flow to the nearest GAAP financial measures are provided in "Non-GAAP Financial Measures and Reconciliations".

Results for the key performance indicators for the three months and year ended December 31, 2019, with comparative figures for 2018, are set out in the following table:

	Three months ended December 31,			Years ended December 31,		
(thousands of dollars except per share data)	**2019**	2018	Variance	**2019**	2018	Variance
Data library sales	**5,281**	4,286	995	**23,635**	10,076	13,559
Other revenue	**83**	27	56	**520**	112	408
Total seismic revenue	**5,364**	4,313	1,051	**24,155**	10,188	13,967
Net earnings (loss)	**(759)**	1,024	(1,783)	**(3,411)**	(1,730)	(1,681)
Per share basic and diluted	**(0.01)**	0.02	(0.03)	**(0.06)**	(0.03)	(0.03)
Cash EBITDA	**3,879**	3,209	850	**17,557**	5,037	12,520
Per share basic and diluted	**0.07**	0.06	0.01	**0.33**	0.09	0.24
Shareholder free cash flow	**2,981**	2,616	497	**13,605**	4,671	8,934
Per share basic and diluted	**0.06**	0.05	0.01	**0.25**	0.09	0.16

In the first quarter of 2019, Pulse acquired 100 percent of the shares of Seitel Canada Ltd. (Seitel), a seismic data library company. For the three months ended December 31, 2019, Pulse generated $5.4 million of revenue, including $1.9 million from the data library acquired from Seitel, compared to $4.3 million for the same period in 2018. In 2019, Pulse generated $24.2 million of revenue, including $13.4 million from the data library acquired from Seitel, compared to $10.2 million in 2018, an increase of 137 percent year-over-year. In addition to data library sales, Pulse has other revenue included in total revenue. This includes revenue from client services consisting of copy and reproduction charges, as well as data storage fees related to the leased warehouse that was acquired with the Seitel purchase.

In 2019, traditional data library sales increased by 115 percent to $19.6 million from $9.1 million in 2018. Since the end of 2014, the Company has experienced low traditional data library sales, due to the ongoing low level of capital spending in the energy-producing sector. Traditional data sales in 2019 were increased through the additional data acquired early in the year.

The increase in data library sales resulting from the recent acquisition is the main factor contributing to the year-over-year improvements in the Company's key performance metrics of cash EBITDA and shareholder free cash flow. The difference between cash EBITDA and shareholder free cash flow in both of the 2019 periods is explained primarily by the Company's debt servicing obligations due to the borrowing incurred for the recent acquisition, and to its exposure to income tax during periods in which it generates earnings.

The second quarter's revenue included a $7.0 million sale to an intermediate oil and natural gas producer.

ACQUISITION OF SEITEL CANADA LTD.

On January 15, 2019 the Company acquired 100 percent of the shares of Seitel Canada Limited (Seitel) for initial cash consideration of $53.6 million paid at closing plus potential additional payments of up to $5 million, in the aggregate, within two years of closing. Pulse also assumed an estimated $4.2 million in additional future liabilities.

The acquisition more than doubled the size of the Company's seismic data library, making it the largest provider of licensable seismic data to the oil and natural gas industry in the Western Canada Sedimentary Basin.

The assets of Seitel, a privately held company, consisted primarily of its 2D and 3D seismic data library in Western Canada. The newly acquired seismic data library includes approximately 36,354 net square kilometres of 3D data and 379,207 net kilometres of 2D data. Pulse more than doubled its 3D library to be the owner of approximately 65,310 net square kilometres and nearly doubled the 2D library to approximately 829,207 net kilometres. The acquisition was completed pursuant to the terms of a share purchase agreement dated January 15, 2019.

The newly acquired seismic data is unique and complementary to Pulse's data, with minimal overlap in the most valuable asset, the 3D library, and only a small percentage of overlap in the 2D library.

The initial consideration of $53.6 million was paid in cash and financed by a combination of Pulse's cash on hand of $20.6 million and $33.0 million of debt. In connection with the acquisition, Pulse amended and restated its syndicated credit agreement with the Toronto-Dominion Bank and ATB Financial. The facilities were comprised of $15 million in term debt, all of which was utilized for the acquisition, and a $30 million revolving facility, $8 million of which was drawn for the acquisition. There is also a $25 million accordion feature which allows the Company to increase the facility's size up to $70.0 million, subject to the lenders' consent. The facility contains favourable repayment terms, interest rates and financial covenants.

Further, Pulse has also entered into a five-year subordinated debt agreement with EdgePoint Investment Group Inc. for an additional $10 million. The agreement terms and conditions are competitive, market-based terms and conditions. The agreement has no requirement to repay the principal prior to the end of term.

The balance of up to $5 million was a deferred payment that was paid during 2019, at a rate representing 50 percent of the 2019 sales revenue generated from the former Seitel database.

To complete the financing of the acquisition, Pulse incurred $73,000 of financing costs as of December 31, 2018 which were deferred and, starting in January 2019, are being amortized over the duration of the term debt. The Company also incurred $85,000 of transaction costs as of December 31, 2018. These costs include professional fees related to the settlement of the acquisition. The costs were capitalized and increased the total cost of the acquisition.

SEISMIC REVENUE FLUCTUATIONS

Revenue fluctuations are a normal part of the seismic data library business, and data library sales can vary significantly year-over-year. As stated, the increased amount of data available for licensing since the 2019 acquisition affects the year-over-year results in this case.

Traditional data library sales can occur at any time. This is due to the nearly continual changes in oil and natural gas industry conditions, sudden or increased demand for seismic data covering a specific area or play, and the timing of public offerings of petroleum and natural gas rights (land sales).

Transaction-based sales can also occur at any time. This is due to corporate merger-and-acquisition, joint venture and asset disposition activity involving Pulse's customers, which is unpredictable.

OUTLOOK

Financial results for the first year following the acquisition of Seitel confirmed the belief that the Company's sales opportunities would be doubled. Traditional data library sales in 2019 was in fact double the average of the last four years, and there was also modest year-over-year growth in sales of the combined data libraries. The Company does remain very cautious about the year ahead, even with certain recent events on the political, regulatory and legal fronts that are positive for the industry's medium- to longer-term prospects.

The Company considers the following relevant:

- The recently re-elected Liberal federal government stated its support for the Trans Mountain Pipeline expansion. While some Indigenous court challenges may continue, in January the Supreme Court of Canada unanimously rejected British Columbia's appeal of court rulings rejecting the province's attempt to control what commodities are contained in inter-provincial pipelines traversing B.C., in order to prohibit heavy crude oil and halt the project. Following this, B.C. premier John Horgan signalled that he would no longer oppose construction. Then on February 4, Canada's Federal Court of Appeal dismissed a challenge to the government's approval of the pipeline expansion, clearing some more uncertainty over the project. Trans Mountain had resumed construction on its Alberta leg last fall. The planned near-tripling of capacity to 839,000 bbls per day is critical for the producing sector to access Pacific Rim markets;
- The $8 billion, 830,000-bbl-per-day Keystone XL pipeline project into the U.S. heartland continues to move forward. Last August the project received court approval critical to its routing through Nebraska. In mid-January project owner TC Energy Corp. announced that it intends to build the short but critical Canada-U.S. border crossing in April, and by summer to commence construction in Montana, South Dakota and Nebraska;
- Enbridge Inc.'s Line 3 Replacement, an approximately $9 billion project to replace aging pipeline connecting Alberta to the U.S. Midwest, has continued to make significant progress. The Canadian portion of the project entered service last year, and the remaining U.S. portion in Minnesota last year received a number of favourable court rulings. Construction there could start in the second half of this year, with the entire line shipping oil by early to mid-2021. The line replacement will increase export capacity from less than 400,000 bbls per day at present to a planned initial 790,000 bbls per day;
- Significant progress continues to create a liquefied natural gas (LNG) export industry. Construction of the landmark LNG Canada facility at the port of Kitimat, B.C., is well underway. While the associated gas supply pipeline for the combined $40 billion project remains embroiled in controversy, all elected Indigenous governments along its route support construction, and premier Horgan is also a strong supporter. The smaller, $1.6 billion Woodfibre LNG project at the port of Squamish, B.C., received key provincial approval last July, opening the way to construction this year. And the proposed Chevron-Woodside Kitimat LNG project also made progress, with the project partners applying to nearly double annual export capacity to 18 million tonnes (although Chevron later announced its intention to exit the project). Combined, the three projects would move a material proportion of Western Canada's natural gas production to global markets, accessing stronger pricing;
- Alberta's new United Conservative Party government, after moving expeditiously to enact business-friendly policies, including a phased reduction of 33 percent to Alberta's corporate income tax, and to reduce the regulatory burden on the oil and natural gas industry, is vigorously promoting energy development and pushing back against the international campaign to "landlock" Alberta's energy production;
- The UCP government is extending the policy of oil production "curtailment" through 2020. Begun in late 2018, curtailment aims to ease the high price differential between the West Texas Intermediate (WTI) North American benchmark and the Western Canadian Select (WCS) regional benchmark crude. This is mainly caused by insufficient oil export capacity, increasing oil storage levels and driving down the intra-Alberta oil price, severely reducing the producing sector's revenue. Curtailment has been highly successful in narrowing the differential. For 2020, the production cutoff for smaller producers exempt from curtailment was doubled to 20,000 bbls per day, expected to encourage investment, drilling and growth among smaller producers; and
- Oil shipments by rail are forecast to continue increasing throughout the year, to as high as 600,000 bbls per day, enabling more oil to exit the producing region and further easing the need for curtailment.

Traditional industry indicators generally remain on the weaker side, though with some positive elements:

- In late January, the Canadian Association of Petroleum Producers (CAPP) forecast that non-oil-sands oil and natural gas capital investment will increase by 4 percent to $25.4 billion in 2020, marking the first year-over-year increase in five years. CAPP attributed the planned spending increases to Alberta's corporate tax cut and easing of production curtailment;
- Also in late January, the Petroleum Services Association of Canada revised its 2020 drilling forecast to 4,800 wells, up by 7 percent from its previous forecast, although the increased figure still represents a year-over-year decline of 2 percent from the very weak 2019 level;
- In November, the Canadian Association of Oilwell Drilling Contractors forecast 4,905 wells to be drilled in 2020, virtually unchanged from 2019;
- Mineral lease auctions or "land sales" in B.C. and Alberta, traditionally a leading indicator of oil and natural gas field activity, were only $134 million in 2019 (vs. $469 million in 2018);
- Natural gas prices are expected to recover slightly from the very low levels of the past two years, with GLJ Petroleum Consultants Ltd. currently forecasting monthly 2020 pricing of US$1.32-US$1.81 per mmBtu at Alberta's AECO "C" hub (converted to U.S. dollars for easier comparison);
- Crude oil prices are expected to increase year-over-year and maintain moderate strength, with GLJ forecasting an average WTI price of US$61.00 per bbl in 2020, up from US$56.98 per bbl in 2019; and
- Of even greater importance for Canadian producers, the WTI-WCS differential is forecast by GLJ to be in the range of US$16-$18 per bbl in 2020, considered a moderate level.

Entering 2020 Pulse's strengths and advantages include:

- Ownership of the largest licensable seismic dataset in Western Canada, providing exceptional exposure to any rebound in industry activity;
- A low cost structure, with only a modest increase in SG&A expenses as a result of the Seitel acquisition, as well as relatively low interest expense, thereby providing even greater cash flow and margin leverage than in the past;
- A strong cash margin, cash EBITDA and shareholder free cash flow generated on the 2019 sales level;
- Moderate debt levels on favourable terms. The Company is confident in its ability to pay down debt at the schedule and rate specified. Pulse has unused borrowing capacity of up to a further $22.1 million if needed;
- An experienced, proven and efficient team of senior management and employees; and
- An experienced and supportive Board of Directors.

Over the coming quarters Pulse intends to continue paying down debt, to manage costs conservatively and to remain stringent in assessing potential new opportunities. The broad coverage of its seismic database make Pulse's revenue, cash margin and shareholder free cash flow highly levered to any uptick in industry field activity and demand for seismic data. In summary, Pulse is equally well-positioned to weather additional quarters of weaker industry activity, to benefit from an industry rebound, to use a sudden increase in sales to the benefit of its shareholders, or to act on further opportunities to grow its seismic data library.

DISCUSSION OF OPERATING RESULTS

SUMMARY FOR YEAR ENDED DECEMBER 31, 2019

LOSS BEFORE INCOME TAXES

Pulse incurred a loss before income taxes of $2.2 million ($0.04 per share basic and diluted) in 2019 compared to a loss before income taxes of $2.4 million ($0.04 per share basic and diluted) for 2018.

DATA LIBRARY SALES

Data library sales are conducted under various types of sale contracts. These are classified as data library sales, library cards (discount agreement, paid on predetermined payment terms with periods of up to one year to select data), commitment cards (discount agreement, paid when data is selected and delivered within a one-year period) and review-and-possession agreements (client is provided with data to review and selects a portion of this data to license long-term, with the agreement often having set payment terms). Pulse plans to continue providing customers with a variety of contract options in order to maximize future data library sales. The unearned portion of a contract's value is deferred until Pulse's revenue recognition criteria are met, with data library sales revenue being recognized upon delivery of seismic data to the customer.

Data library sales consist of traditional sales and transaction-based sales. There are three main types of transaction-based sales: corporate merger or acquisition sales, partnership or joint venture sales, and asset disposition-related sales. For further information on transaction-based sales, see "Traditional Sales vs. Transaction-based Sales: Eight-Year History" on page 16.

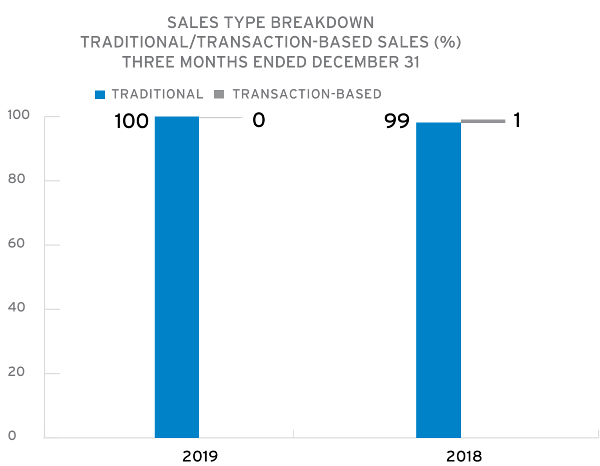
For 2019, seismic data library sales were $23.6 million compared to $10.1 million in 2018. Actual data sales for 2019 were $24.0 million, but sales revenue of approximately $374,000 was deferred as a result of the extended payment terms for a portion of the $7.0 million sale recorded in the second quarter of 2019 and another sale made in November. The $374,000 will be recorded as interest income between the date of each sale and the collection of the payments in 2021 and 2022.

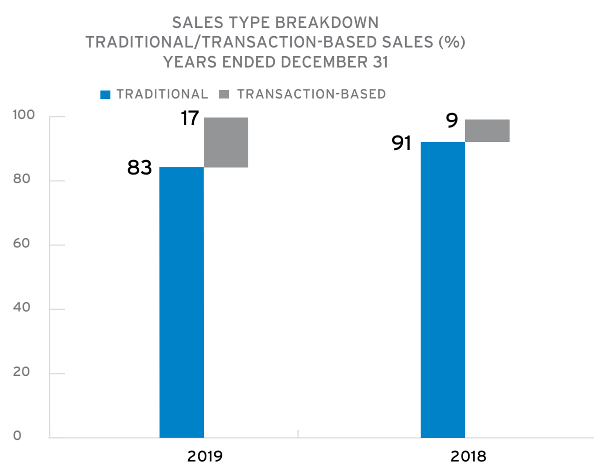
As explained above, the year-over-year increase in the data library sales is the result of the Seitel acquisition in January 2019.

DISAGGREGATED DATA LIBRARY SALES BREAKDOWN

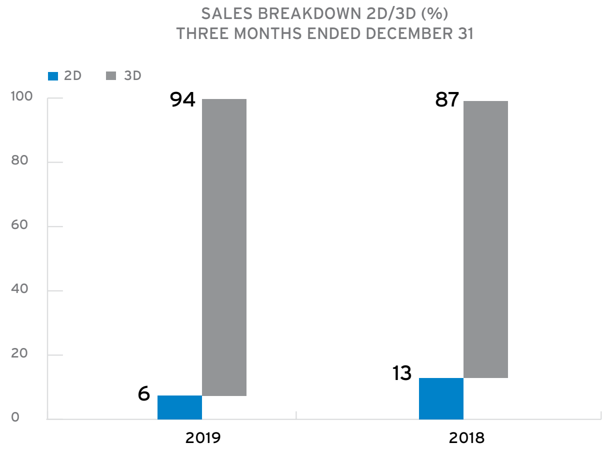
Pulse uses three ways to disaggregate its data library sales. The following graphs illustrate the comparative disaggregated sales for the three-and twelve-month periods ended December 31, 2019 and 2018.

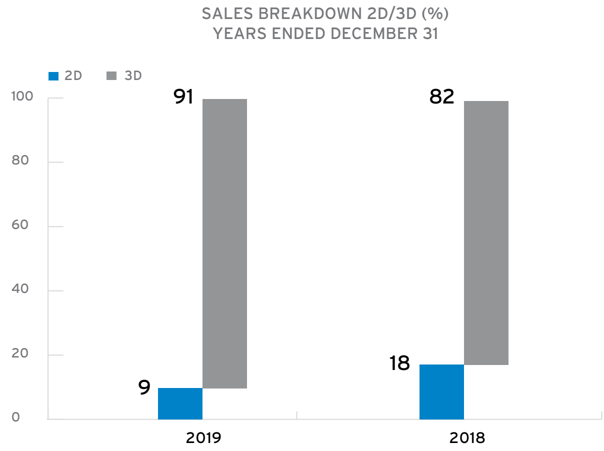
The first breakdown, transaction type, separates sales between traditional and transaction-based sales. These two types fluctuate greatly from period to period and year to year. An eight-year historical breakdown is provided in the "Traditional Sales vs. Transaction-Based Sales: Eight-Year History" section on page 16.



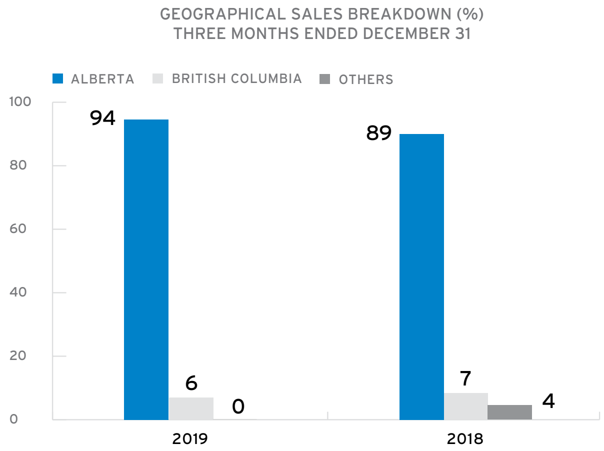


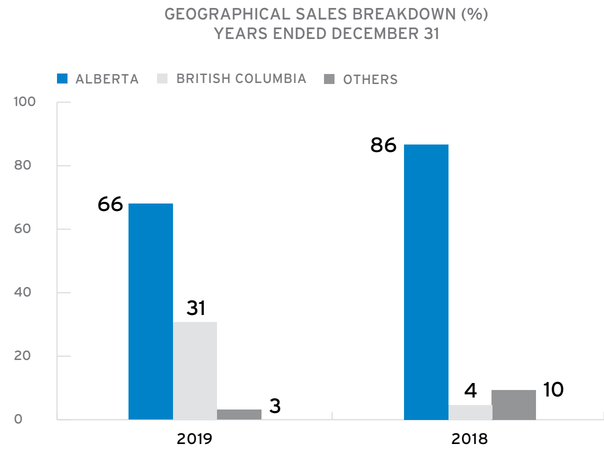
The second breakdown, data type, compares sales of 2D and 3D seismic data. As 3D seismic licence contracts are generally larger than 2D seismic licence contracts, the percentage of seismic data library revenues generated from 2D and 3D seismic data can fluctuate significantly depending on the number of 3D seismic sale contracts signed during a given period.





The third breakdown is geographical. The largest proportion of data sales usually comes from data in Alberta, as that is where the majority of Pulse's data coverage and current industry activity are. The $7.0 million deal in the second quarter of 2019 was for data located in British Columbia.





The Company's customers are currently and generally focusing on liquids-rich natural gas and light oil pools found primarily in a broad corridor running from northwest of Calgary, Alberta, along the Foothills of the Rocky Mountains to the British Columbia border, as compared to "dry" natural gas more often found in British Columbia, on Alberta's eastern prairies and in Saskatchewan and Manitoba. During the year ended December 31, 2019, 66 percent of the data library sales were from data located in Alberta, 31 percent from British Columbia and 3 percent from other areas.

AMORTIZATION OF SEISMIC DATA LIBRARY

Seismic data library amortization expense was $14.2 million for 2019 compared to $7.3 million in 2018. The significant increase is due to the amortization expense related to the data library acquired in January 2019.

Amortization of the seismic data library is described further under "Critical Accounting Estimates".

SALARIES, COMMISSIONS AND BENEFITS (SCB)

SCB includes salaries, related benefits, incentive compensation and internal commissions. For 2019, SCB was $4.3 million, an increase of $862,000 from $3.5 million in 2018.

The significant increase is due to the success-based acquisition bonus of $700,000 paid to the Pulse employees for the completion and closing of the acquisition of Seitel, as well as an increase in sales commissions due to higher sales and, finally, to the increase in the accounting expense related to the employee long-term incentive plan resulting from the increase in the share price between January 1 and December 31, 2019.

OTHER SELLING, GENERAL AND ADMINISTRATIVE COSTS (SG&A)

SG&A includes external commissions, occupancy costs, office and general costs, information technology expenses, reprocessing, data storage expenses, directors' fees and corporate costs, consulting fees and professional fees. For both 2019 and 2018 SG&A was $2.0 million. In 2019, the Company recorded a bad debt expense of $180,000 for an account considered to be at high risk for collection. This expense was offset by a reduction in occupancy costs which was a result of the accounting change due to IFRS 16, *Leases*. In IFRS 16, the operating cost portion of rent on the office lease is classified as an expense in SG&A, while the basic rent component is reflected as a combination of interest expense and depreciation.

RESTRUCTURING COSTS

Included in restructuring costs is $1.5 million of severance payments related to the acquired company in January 2019, the audit fees related to regulatory reporting of the Seitel acquisition, expenses related to the Seitel warehouse lease, increased marketing costs from the assumption of the lease contract for a suite at the Scotiabank Saddledome until the end of the third quarter of 2019, and other minor SG&A expenses related to Seitel integration. These additional costs have been categorized as restructuring costs and make up part of the expected $4.2 million in future liabilities as outlined in previous acquisition-related disclosure.

NET FINANCING COSTS (INCOME)

In 2019, the Company's net financing costs were $2.5 million compared to $318,000 of net financing income in 2018. The increase is related to the debt utilized to fund the acquisition. In January 2019, in connection with the acquisition, Pulse amended and restated its syndicated credit agreement with the Toronto-Dominion Bank and ATB Financial. The credit facility is comprised of $15 million in term debt, all of which was utilized for the acquisition, and a $30 million revolving facility, of which $8 million was also drawn for that purpose.

Pulse also entered into a five-year subordinated debt agreement with EdgePoint Investment Group Inc., a non-arm's-length party, for $10 million. The agreement has no requirement to repay the principal prior to the end of term. In 2019, the interest expense related to the syndicated credit agreement was $1.1 million and the interest expense related to the subordinated debt agreement was $959,000. Also included in the financing expenses is the interest related to the lease liabilities following the implementation of IFRS 16, *Leases*, in the first quarter of 2019.

By comparison, in 2018, there was zero long-term debt owing and the Company incurred only standby fees on its syndicated credit agreement. The standby fees were offset by the interest earned by the Company on its cash surplus.

INCOME TAXES

The income tax expense in 2019 was $1.2 million, even though the Company incurred a loss before income tax of $2.2 million. The main factor affecting the tax rate calculation is the permanent difference between the tax basis and the accounting value of the data library acquired in January 2019. In 2018, the Company recorded an income tax reduction of $678,000 and had an effective tax rate for accounting of 28.2 percent. A reconciliation of the income tax expense or reduction is included in note 9 of the consolidated financial statements.

The federal-provincial enacted corporate income tax rate was 27 percent in 2018 and will be an average of 26.5 percent in 2019, due to phased reductions to the corporate income tax rate levied by the Province of Alberta. The effective tax rate for accounting in 2019 was different from the enacted income tax rate as a result of the permanent difference between the tax basis of the data library acquired in 2019 and its cost. The change in valuation allowance related to future resource deductions and non-deductible expenditures also contributed slightly to the variance between the effective and the enacted income tax rate.

SUMMARY FOR THREE MONTHS ENDED DECEMBER 31, 2019

EARNINGS (LOSS) BEFORE INCOME TAXES

For the three months ended December 31, 2019, the Company incurred a loss before income taxes of $432,000 ($0.00 per share basic and diluted) compared to earnings before income taxes of $1.4 million ($0.03 per share basic and diluted) for the comparable period of 2018.

REVENUE

Total revenue for the three months ended December 31, 2019 was $5.4 million compared to $4.3 million for the three months ended December 31, 2018.

AMORTIZATION OF SEISMIC DATA LIBRARY

For the three months ended December 31, 2019, seismic data library amortization expense was $3.5 million compared to $1.8 million in the comparable period of 2018. The significant increase is due to the amortization expense related to the data library acquired in January 2019.

Amortization of the seismic data library is described further under "Critical Accounting Estimates".

SALARIES, COMMISSIONS AND BENEFITS (SCB)

SCB for the three months ended December 31, 2019 was $868,000 compared to $707,000 in the comparable period of 2018. The increase is mainly due to the increase in the accounting expense related to the employee long-term incentive plan resulting from the increase in the share price between January 1 and December 31, 2019.

OTHER SELLING, GENERAL AND ADMINISTRATIVE COSTS (SG&A)

SG&A for the three months ended December 31, 2019 was $592,000 compared to $470,000 for the three months ended December 31, 2018. As explained above the increase was mainly related to a $180,000 bad debt expense recorded in the three month period ended December 31, 2019 offset by the impact of IFRS 16 as noted above.

NET FINANCING COSTS (INCOME)

For the three months ended December 31, 2019, net financing costs were $526,000 compared to $72,000 net financing income for the same period in 2018. The difference is related to the debt utilized to fund the acquisition. During the same period in 2018, there was zero long-term debt owing and the Company incurred only standby fees on its syndicated credit agreement. The standby fees were offset by the interest earned by the Company on its cash surplus.

INCOME TAXES

The income tax expense for the three months ended December 31, 2019 was $327,000 compared to an income tax expense of $355,000 for the fourth quarter of 2018. The Company recorded an income tax expense for the three months ended December 31, 2019 even though it incurred a loss before income tax of $432,000. The main factor affecting the tax expense is the permanent difference between the tax basis and the accounting value of the data library acquired in January 2019.

REVIEW OF FINANCIAL POSITION

AS AT DECEMBER 31, 2019

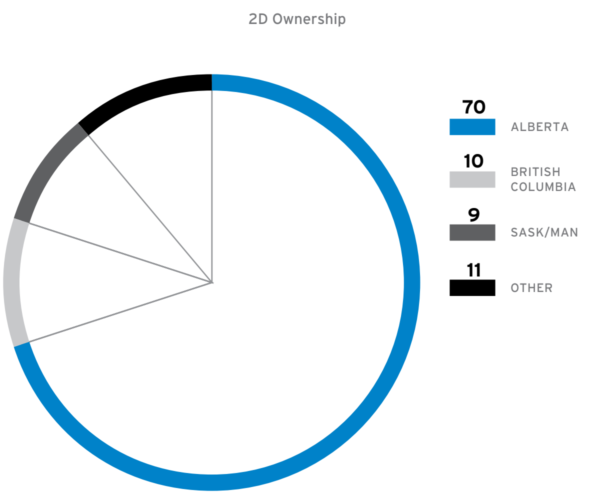
SEISMIC DATA LIBRARY

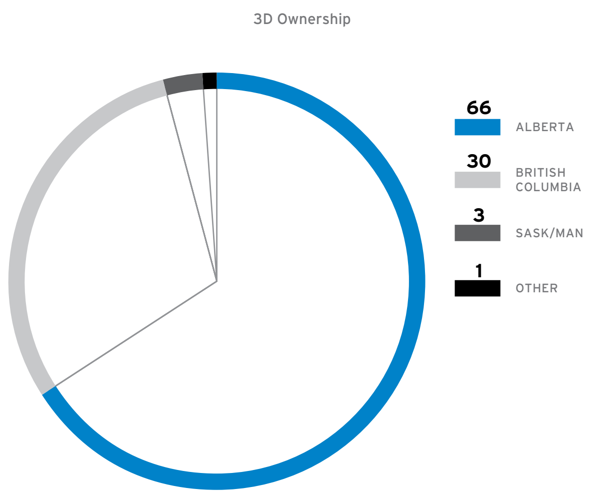
The Company's business model includes seismic data library growth as a priority. Pulse has historically acquired seismic data to add to its library through two main methods. When opportunities arise that meet the Company's criteria, proprietary rights to complementary seismic datasets may be purchased, or participation surveys may be conducted. For participation surveys, Pulse partners with customers to conduct surveys from which the seismic data collected is added to Pulse's data library to generate future licensing revenue. Pulse retains full ownership of the data, and participating customers are provided with a licensed copy in return for their contribution to the capital costs of the survey. The Company has not conducted a survey since the oil and natural gas industry downturn began in 2015.

At December 31, 2019, the Company considered indicators of impairment for each of its cash-generating units and, based on that review, no impairment test was performed.

Additionally, as discussed above in the Corporate Update, on January 15, 2019 the Company acquired Seitel and more than doubled its seismic data library.

The breakdown of Pulse's 2D and 3D seismic data by geographical location is as shown in the following graphs.





LONG-TERM RECEIVABLES

In June 2019 the Company closed a $7.0 million seismic data sale. It had payment terms with $3.0 million due and collected in July 2019, $2.0 million due in January 2020 and $2.0 million due in January 2021. The payment due in January 2021 is presented as a long-term receivable in the statement of financial position. For this reason, that payment was discounted and $183,000 of the data library sale will be recognized as interest income over time until the payment is received in January 2021.

In November 2019 the Company closed a $3.4 million seismic data sale. It also had payment terms, with $140,000 due and collected in December 2019, $1.1 million due in 2020, $1.1 million due in 2021 and $1.1 million due in 2022. The payments due in January 2021 and 2022 are presented as a long-term receivable in the statement of financial position. For this reason, those payments were discounted and $191,000 of the data library sale will be recognized as interest income until the payments are received in 2021 and 2022.

RIGHT-OF-USE (ROU) ASSETS

Included in the ROU assets are the present values of the basic rent related to Pulse's office lease agreement and the former Seitel warehouse lease agreement. The present values were calculated using an incremental borrowing rate of 6.7 percent. The operating costs associated with the lease agreements were not included as those costs are not fixed or based on an index or rate.

The office lease agreement terminates in March 2023 and the warehouse lease agreement terminates in April 2022.

As stated above, no fair value was allocated to the ROU asset related to the former Seitel office space. This office was not required for business by Pulse and was immediately marketed for sublease. The office lease agreement terminates in November 2022. Given market conditions for commercial office space in downtown Calgary at the time of acquisition, the probability of a sub-lease was considered low. Since that time, in the third quarter of 2019 a sub-lease for the remainder of the term of the acquired office space was finalized, which have led to a recovery of a portion of the monthly lease operating costs.

LONG-TERM DEBT

As described in "Net Financing Costs (Income)" above, the acquisition of Seitel was partially funded through debt. A total of $23.0 million was borrowed from Pulse's syndicated credit facility and a $10.0 million subordinated debt facility was arranged.

Additionally, Pulse agreed to pay the vendor a potential deferred payment of up to $5.0 million, to be paid at a rate representing 50 percent of the sales revenue generated from the former Seitel database until December 31, 2020. Based on sales in the first half of 2019, payments were made in April and July to fully satisfy this obligation.

The current portion of long-term debt consists of the annual mandatory principal repayment of $1.5 million related to the syndicated credit facility.

The non-current portion of the long-term debt is offset by deferred financing charges to be amortized over three years.

LEASE LIABILITIES

Included in lease liabilities are the present values of the basic rent related to Pulse's office lease agreement, the lease agreement for Seitel's former office space and the warehouse lease agreement, all calculated using an incremental borrowing rate of 6.7 percent. The operating costs included in the lease agreements were not included in the lease liabilities as these costs are not fixed or based on an index or rate.

OTHER LONG-TERM PAYABLE

Included in the other long-term payable is the long-term portion of the cash-settled liability related to the long-term incentive plan.

SHARE CAPITAL SUMMARY

The Company's authorized share capital consists of an unlimited number of common shares and an unlimited number of preferred shares, issuable in series.

The following table provides details of the Company's outstanding share capital:

	Three months ended December 31,		**Years ended December 31,**	
	2019	2018	**2019**	2018
Weighted average shares outstanding: Basic and diluted	**53,793,317**	53,793,317	**53,793,317**	53,838,106
Shares outstanding at period-end			**53,793,317**	53,793,317
Shares outstanding at February 12, 2020			**53,793,317**	

DILUTED EARNINGS PER SHARE RECONCILIATION

The Company does not have any dilutive securities.

LONG-TERM INCENTIVE PLAN (LTIP)

The Company has an LTIP for employees, officers and directors designed to align the Company's long-term incentive compensation with its performance and to increase levels of stock ownership. Participants are granted restricted share units (RSUs) and performance share units (PSUs). LTIP awards are at the discretion of the Board of Directors.

RSUs and PSUs have accompanying dividend-equivalent rights and, therefore, additional RSUs and PSUs are issued to reflect dividends declared on the common shares. The plan's trustee will purchase common shares on the open market for the after-tax number of RSUs and PSUs vested with funds provided by the Company.

On March 31, 2019 184,657 RSUs and 248,296 PSUs were eligible to vest. Corporate financial performance in 2018 did not meet the predetermined performance benchmarks and, consequently, no PSUs vested on March 31, 2019. RSUs vest automatically based upon time and, consequently, all the eligible RSUs vested on March 31, 2019.

To satisfy its obligation, in April 2019 the Company provided $266,000 to the plan's trustee to purchase common shares on the open market for the total after-tax number of cash- and equity-settled RSUs that vested on March 31, 2019. The related withholding taxes of $191,000 were paid in May 2019 to settle fully the accrued cash-settled portion of the share-based payment liabilities.

At December 31, 2019 there were 553,575 RSUs and 704,962 PSUs outstanding.

At February 12, 2020, total RSUs and PSUs outstanding remain unchanged. On March 31, 2020, a portion of the LTIP awards, RSUs and PSUs, are eligible to vest. The Company's performance in 2019 did not meet the predetermined performance criteria and, consequently, no PSUs will vest on March 31, 2020. RSUs vest automatically based upon time; all of the eligible RSUs of 186,658 units will, therefore, vest automatically on March 31, 2020.

In April 2020, the Company will settle its obligation to deliver the common shares by providing funds to the independent LTIP trustee to purchase the shares on the open market.

DEFICIT

On December 31, 2019 the Company had a deficit of $45.0 million, compared to $41.7 million at December 31, 2018. Included in the deficit are the net loss for the period of $3.4 million and the IFRS 16, *Leases* adjustment of $110,000 following the implementation of the new standard effective January 1, 2019.

DEFERRED TAX LIABILITY

The net deferred income tax liability was $1.1 million at December 31, 2019 compared to $1.7 million at December 31, 2018. The decrease in the deferred income tax liability is mainly due to the decrease in the difference between the tax base of the seismic data library and the carrying amount on the statement of financial position.

The deferred income tax liability consists mainly of taxable temporary differences between the tax base of the seismic data library and the carrying amount on the statement of financial position.

FINANCIAL SUMMARY OF QUARTERLY RESULTS

(thousands of dollars, except per share data)	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3	2018 Q2	2018 Q1
Data library sales	**5,281**	**2,460**	**10,617**	**5,277**	4,286	1,597	1,905	2,289
Other revenue	**83**	**127**	**167**	**143**	27	9	36	39
Total revenue	**5,364**	**2,587**	**10,784**	**5,420**	4,313	1,606	1,941	2,328
Amortization of seismic data library	**3,500**	**3,557**	**3,577**	**3,566**	1,811	1,812	1,836	1,878
Net earnings (loss)	**(759)**	**(2,861)**	**2,880**	**(2,671)**	1,024	(1,042)	(1,016)	(696)
Per share – basic and diluted	**(0.01)**	**(0.05)**	**0.05**	**(0.05)**	0.02	(0.02)	(0.02)	(0.01)

The revenue streams generated by Pulse's operations are data library sales and other revenue. Other revenue includes revenue from client services consisting of copy and reproduction charges, as well as data storage fees related to the leased warehouse that was acquired with the Seitel purchase.

Data library sales consist of traditional sales and transaction-based sales, as described below under "Traditional Sales vs. Transaction-Based Sales: Eight-Year History". See also "Seismic Revenue Fluctuations".

During 2019 and 2018, transaction-based sales contributed to data library sales to varying degrees. The second quarter of 2019 included $4.0 million in transaction-based sales.

Very little transaction-based sales revenue was generated in the other quarters depicted in the table above.

The significant increase in quarterly amortization expense in 2019 over the preceding four quarters is due to the acquisition in January 2019. As amortization is a non-cash expense, the Company continued to generate positive cash EBITDA and shareholder free cash flow in each quarter.

During the past eight quarters, the fluctuations in net earnings or loss have largely been a function of the corresponding quarterly fluctuations in revenue. For each quarter in 2019, the increased amortization expense, restructuring expenses and financing costs related to the acquisition offset the increased revenue, and contributed to the lower net result.

All financial data included in the table above is presented in Canadian dollars, the Company's functional currency, and was prepared using the adopted IFRS.

SELECTED ANNUAL FINANCIAL INFORMATION

(thousands of dollars, except per share data)	Years ended December 31,		
	2019	2018	2017
Data library sales	**23,635**	10,076	43,430
Other revenue	**520**	112	95
Participation surveys	**–**	–	–
Total revenue	**24,155**	10,188	43,525
Net earnings (loss)	**(3,411)**	(1,730)	15,087
Per share – basic and diluted	**(0.06)**	(0.03)	0.27
Total assets	**69,807**	38,847	51,693
Long-term debt	**31,511**	–	–
Total non-current financial liabilities	**32,484**	1,766	3,149
Cash dividends per common share	–	–	0.20[1]

[1] *Special dividend paid in December 2017*

For the last three years, total revenue consisted of seismic data library sales and other revenue. In 2017 the Company closed a record $29.5 million seismic data sale. Seismic data library sales in 2019 and 2018 were lower than in previous years due to drastic cutbacks in the energy-producing sector's capital spending, to lower customer demand and to fewer transaction-based sales, even with the addition of the Seitel assets in 2019.

The Company had net earnings in 2017, compared to a net loss in 2019 and 2018, due primarily to the large transaction-based sale in 2017.

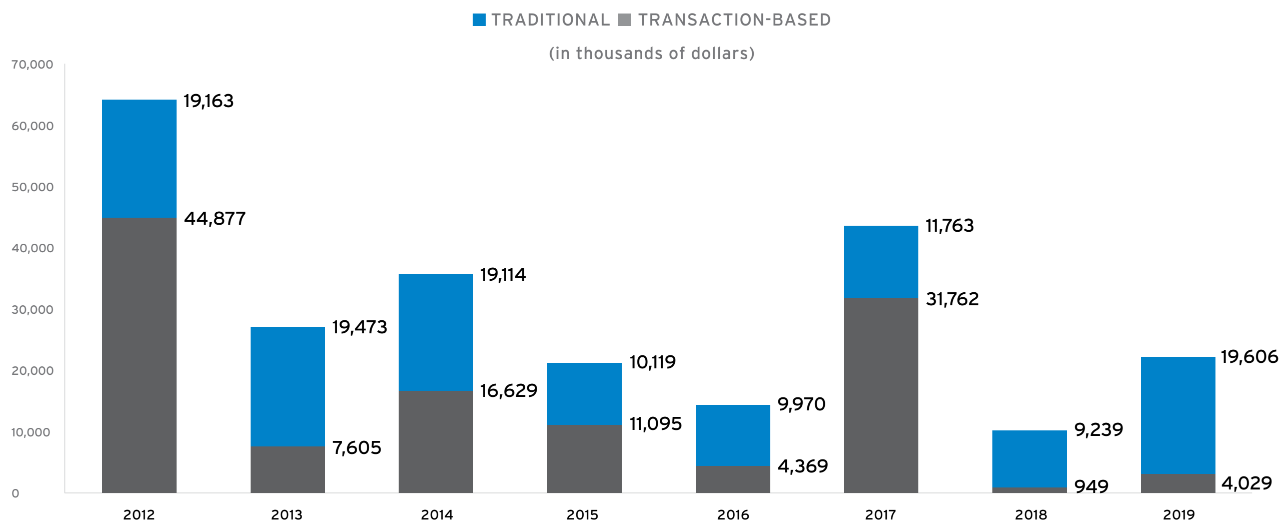
See also "Seismic Revenue Fluctuations".

Total assets decreased from 2017 to 2018 due to amortization of the seismic data library. Total assets increased in 2019, because of the acquisition of Seitel in January 2019.

In December 2017 the Company paid a special dividend of $0.20 per share. The regular quarterly dividend was suspended in November 2015.

All financial data in the table above is presented in Canadian dollars, which is the Company's functional currency, and was prepared in accordance with IFRS.

TRADITIONAL SALES VS. TRANSACTION-BASED SALES: EIGHT-YEAR HISTORY



There are three main types of transaction-based sale. The first is the partnership or joint venture, in which an oil and gas asset holder elects to pool its expertise, capital and/or assets with one or more new participants to explore or develop a play. Under the Company's current standard form licensing agreements, any new technical or operational participant that wishes to view or interpret the seismic data must purchase a data licence from Pulse, generally at a discount (usually pre-defined in the initial licensing agreement). Purely financial partners that do not wish to view or interpret the seismic information are exempt.

The second kind of transaction-based sale is a corporate merger or acquisition. In this case, the seismic data is transferred to the new organization. Under the Company's current standard form licensing agreements, the buyer has 30 days to determine whether it would like to pay a change-of-control fee to keep the data or return the data to Pulse.

The third is the sale of an oil and gas asset or group of assets (as well as partial mineral rights to particular zones below the asset-owner's lands). Under the Company's current standard form licensing agreements, the licence is not transferable upon an asset sale. In this case, no rights to the seismic data transfer to the buyer, and there are no terms of payment in the licence agreement. Should the buyer be interested in Pulse's seismic data, it must license the data from Pulse at the regular price. Following this type of transaction, considerable time may pass until a data licensing sale occurs because the new asset owner may defer development of the particular asset. In addition, the new asset owner may be interested in only portions of the original dataset. The attraction of Pulse's library remains the far lower cost of licensing the data than shooting new seismic over the same area.

The precise terms of individual licence agreements (including those historically used by Pulse and its predecessors and those assumed by Pulse on data acquisitions) can vary greatly. Change-of-control fees and joint venture copy fees may not always be payable, and licence agreements may not always be non-assignable.

CONTRACTUAL OBLIGATIONS

Pulse's known contractual obligations at December 31, 2019 are comprised of operating leases for certain office spaces and warehouse space, minimum payments under seismic data services contracts and accounts payable and accrued liabilities. The following table reflects the Company's anticipated payment of contractual obligations:

		Payments due by period			
Contractual Obligations (thousands of dollars)	Total	Less than 1 year	1 - 3 years	4 - 5 years	After 5 years
Long-term debt – capital	31,775	1,500	20,275	10,000	–
Long-term debt – interest	6,055	2,023	2,990	1,042	–
Lease liabilities	3,568	1,279	2,213	76	–
Seismic data services contracts	111	111	–	–	–
Accounts payable and accrued liabilities	1,258	1,138	120	–	–
Total contractual obligations	42,767	6,051	25,598	11,118	–

Obligations in the category of seismic data services contracts include geophysical services such as digitization and data storage.

Accounts payable and accrued liabilities at December 31, 2019 include the interest accrual of $274,000 related to the long-term debt and the accrual of $315,000 related to the short term and long-term incentive plans.

LIQUIDITY, CAPITAL RESOURCES AND CAPITAL REQUIREMENTS

At December 31, 2019 Pulse had working capital of $596,000 and a working capital ratio of 1.11:1. Current liabilities include deferred revenue, a non-cash liability of $1.9 million which relates to data to be delivered to customers over a contractually specified period.

In 2019 the Company had $8.6 million of cash provided by operating activities compared to $3.3 million of cash used in operating activities in 2018. The main contributors to the difference between the two periods are the significantly increased data sales in 2019, the restructuring costs paid in 2019, the lower cash income tax paid in 2019 than in 2018, the higher interest paid in 2019 than in 2018, and the decrease in the net change in non-cash working capital in 2019 from 2018.

To fund the acquisition in January 2019, the Company borrowed a total of $33.0 million and subsequently borrowed another $2.5 million on the revolving credit facility. Of total borrowing, $3.7 million had been repaid as of December 31, 2019.

The Company utilized cash for the following outlays:

- Seismic data purchases and associated cost of $61.0 million;
- Long-term debt repayments of $3.7 million;
- Capital lease principal repayments of $634,000;
- Deferred financing charges of $387,000;

- Additions of property and equipment for $439,000; and
- Shares purchased for equity-settles share-based payments of $266,000.

The cash balance at December 31, 2019 was $1.4 million.

The credit facilities are comprised of $13.9 million in term debt and a $30.0 million revolving facility, of which $7.9 million is drawn at this date. Up to $5.0 million of the revolving facility remains available as an operating line of credit. The facility has repayment terms, interest rates and financial covenants that are described below.

Significant terms of the credit facility are:

- Interest on the term debt and the revolving facility is based on the lead lender's prime rate plus 0.25 percent to 2.75 percent, following an eight-tier margin structure based on the Company's total debt to adjusted EBITDA ratio as described below;
- An accordion feature allowing the Company to increase the facility's size by up to an additional $25 million, subject to the lenders' consent;
- $1.5 million aggregate annual principal payments on the term debt and the facility, with voluntary prepayments permitted in whole or part at any time, without premium or penalty; and
- Three-year term until January 15, 2022, with an extension of up to one year available on January 15 of every year with the approval of the lenders. If the extension is not granted, any outstanding amounts will be payable on the then-current applicable maturity date.

At December 31, 2019 the Company had $13.9 million of term debt and a $7.9 million balance on the revolving credit facility, with $22.1 million available for future draws. At December 31, 2019 the applicable interest rate on the long-term debt was 4.7 percent (December 31, 2018 – nil).

The credit facility is secured by a charge on all the assets of the Company and its material subsidiaries.

The credit facility also includes the following two financial covenants:

1) MAXIMUM SENIOR DEBT TO ADJUSTED EBITDA RATIO

The senior debt to adjusted EBITDA ratio shall not be greater than 3.50:1 on December 31, 2019 and shall decrease in steps to 3:1 for fiscal quarters ending December 31, 2020 and thereafter.

2) MINIMUM INTEREST COVERAGE RATIO AND MINIMUM FIXED CHARGE COVERAGE RATIO

On any date on which the senior debt to adjusted EBITDA ratio has been lower than 2:1 for two consecutive quarters, the minimum interest coverage ratio, defined as the ratio of adjusted EBITDA to interest expense, shall not be less than 3:1.

On any date on which the senior debt to adjusted EBITDA ratio is equal to or higher than 2:1 for two consecutive quarters, the fixed charge coverage ratio replaces the interest coverage ratio.

The fixed charge coverage ratio is equal to adjusted EBITDA less unfunded capital expenditures, cash taxes and permitted cash distributions divided by the sum of scheduled principal repayments and interest expense paid in cash and shall not be less than 1.2:1.

Senior debt is total debt less subordinated debt. Total debt also includes the potential deferred payment on the acquisition and is determined on a consolidated basis and in accordance with IFRS.

Adjusted EBITDA is to be calculated on a trailing 12-month basis and is defined as earnings or loss before interest, income taxes, depreciation and amortization, plus extraordinary losses, non-cash losses and expense charges, and any other unusual or non-recurring cash charges, expenses or losses consented to by the lenders, less participation survey revenue, extraordinary gains and non-cash gains and income. Adjusted EBITDA is to be adjusted for acquisitions or dispositions to reflect such acquisition or disposition as if it occurred on the first day of such calculation period.

At December 31, 2019 the senior debt to adjusted EBITDA ratio was 1.24:1 and the interest coverage ratio was 7.49:1.

The senior debt to adjusted EBITDA ratio and the interest coverage ratio related to the financial covenant at December 31, 2019 was calculated as follows:

SENIOR DEBT TO ADJUSTED EBITDA RATIO

(thousands of dollars except ratio)	
Senior debt	21,775
Divided by:	
Adjusted EBITDA	17,557
Senior debt to adjusted EBITDA ratio (not to exceed 3.5:1)	1.24

INTEREST COVERAGE RATIO (ICR)

(thousands of dollars except ratio)	
Adjusted EBITDA	17,557
Divided by:	
Interest expense	2,345
ICR (to be at least 3:1)	7.49

The Company was therefore in compliance with the credit facility's covenants at December 31, 2019.

The Company pays interest and a standby fee based on the daily undrawn balance of the credit facility and its total debt to adjusted EBITDA ratio. Interest and standby fees on the syndicated revolving bank loan are calculated based on the syndicate lead lender's prime rate, bankers' acceptance rate or LIBOR, plus an applicable margin based on the covenant ratio of total debt to adjusted earnings before interest, income taxes, depreciation and amortization (adjusted EBITDA). The total debt to adjusted EBITDA ratio at December 31, 2019 was 1.81:1 and the applicable margin and standby fee will be set at the third-level rates specified in the facility.

The interest and standby fee rates are adjusted the day after the covenant's calculation for the previous fiscal quarter is received and approved by the lenders.

The applicable margin and standby fee rate were determined as follows:

Total Debt to Adjusted EBITDA Ratio	Applicable Margin for Canadian Prime Rate Loans	Applicable Margin for Bankers' Acceptances	Standby Fee Rate
Less than or equal to 1:1	0.25%	1.50%	0.3000%
Greater than 1:1 but less than or equal to 1.5:1	0.50%	1.75%	0.3500%
Greater than 1.5:1 but less than or equal to 2:1	0.75%	2.00%	0.4000%
Greater than 2:1 but less than or equal to 2.5:1	1.00%	2.25%	0.5063%
Greater than 2.5:1 but less than or equal to 3:1	1.25%	2.50%	0.5625%
Greater than 3:1 but less than or equal to 3.5:1	1.75%	3.00%	0.7500%
Greater than 3.5:1 but less than or equal to 4:1	2.25%	3.50%	0.8750%
Greater than 4:1	2.75%	4.00%	1.0000%

The Company elected not to renew its normal course issuer bid (NCIB) in December 2018 and therefore didn't purchase any shares in 2019.

From January 1, 2018 to December 20, 2018, the Company purchased 227,500 common shares under the NCIB. All purchases were made on the open market through the TSX or alternative trading platforms at the market price of such shares. All shares purchased under the NCIB were cancelled.

Funding for Pulse's future capital expenditures will generally depend on the level of future data library sales. Pulse's management believes that the Company's capital resources will be sufficient to finance future operations and carry out the necessary capital expenditures through 2019. The Company anticipates that future capital expenditures will be financed through cash on hand, available credit facilities, and funds from operations. The Company has a $30.0 million revolving credit facility with $22.1 million undrawn, and an accordion feature allowing Pulse to increase the facility's size by up to $25.0 million, subject to the lenders' consent. If deemed appropriate by management and the Board of Directors, Pulse can also issue common or preferred shares.

Pulse requires flexibility in managing its capital structure to take advantage of opportunities in raising additional capital where opportunities for seismic data acquisitions arise. Historically, the Company has used a combination of debt and equity to finance growth initiatives, and it continues to rely on internal measures such as the long-term debt to equity ratio to structure and forecast its capital requirements. Long-term debt is defined as long-term debt net of deferred financing costs. At December31, 2019, the long-term debt to equity ratio was 0.99:1. Pulse's management considers the current capital structure appropriate.

This discussion on liquidity, capital resources and capital requirements contains forward-looking information; users of this information are cautioned that actual results may vary and are encouraged to review the discussions of risk factors and forward-looking statements below.

NON-CAPITAL RESOURCES

The Company's main non-capital resource is its key management and staff. The Company has an experienced team with extensive knowledge about the seismic industry. Pulse's management understands industry cycles and how to manage the business in the downturn and recovery phases. Pulse has built strong sales, financial and information technology departments. Key management and staff are eligible to participate in the short-term and long-term incentive plans, which are tied to the Company's shareholder free cash flow per share.

NON-GAAP FINANCIAL MEASURES AND RECONCILIATIONS

This MD&A and the Company's continuous disclosure documents provide discussion and analysis of cash EBITDA and shareholder free cash flow. IFRS do not include standard definitions for these measures and, therefore, they may not be comparable to similar measures used and disclosed by other companies. As IFRS have been incorporated into Canadian generally accepted accounting principles (GAAP), these non-IFRS measures are also non-GAAP measures. The Company has included these non-GAAP financial measures because management, investors, analysts and others use them to evaluate the Company's financial performance.

Cash EBITDA and shareholder free cash flow are not calculations based on IFRS and should not be considered in isolation or as a substitute for IFRS performance measures, nor should they be used as an exclusive measure of cash flow, because they do not consider working capital changes, capital expenditures, long-term debt repayments and other sources and uses of cash which are disclosed in the consolidated audited and interim statements of cash flows.

CASH EBITDA AND SHAREHOLDER FREE CASH FLOW

Cash EBITDA represents the capital available to invest in growing the Company's 2D and 3D seismic data library, to pay interest and principal on its long-term debt, to purchase its common shares, to pay taxes and to pay dividends.

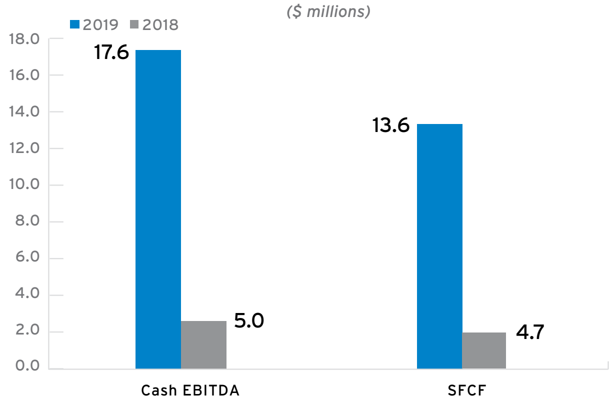
Cash EBITDA is calculated as earnings or loss from operations before interest, taxes, depreciation and amortization less participation survey revenue, plus non-cash and non-recurring expenses. Cash EBITDA excludes participation survey revenue as this revenue is directly used to fund specific participation surveys and is unavailable for discretionary expenditures. The Company believes cash EBITDA helps investors compare Pulse's results on a consistent basis without regard to participation survey revenue and non-cash items, such as depreciation and amortization, which can vary significantly depending on accounting methods or non-operating factors such as historical cost.

Shareholder free cash flow further refines the calculation of capital available to invest in growing the Company's 2D and 3D seismic data library, to repay debt, to purchase its common shares and to pay dividends, by deducting non-discretionary expenditures from cash EBITDA. Non-discretionary expenditures are defined as debt financing costs (net of deferred financing expenses amortized in the current period) and current tax provisions.

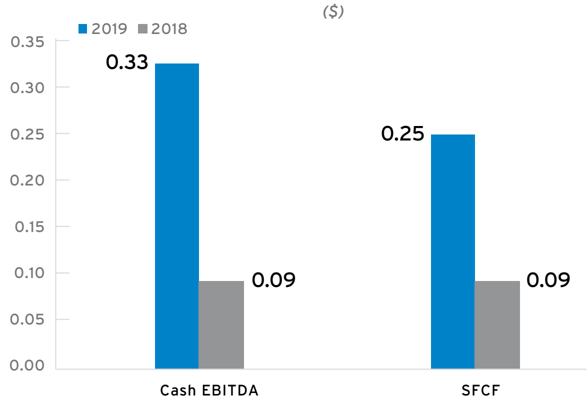
A reconciliation of net earnings or loss to EBITDA, cash EBITDA and shareholder free cash flow follows:

	Three months ended December 31,		Years ended December 31,	
(thousands of dollars, except per share data)	**2019**	2018	**2019**	2018
Net earnings (loss)	**(759)**	1,024	**(3,411)**	(1,730)
Add:				
Amortization of seismic data library	**3,500**	1,811	**14,200**	7,337
Net financing costs (income)	**526**	(72)	**2,452**	(318)
Income tax expense (reduction)	**327**	355	**1,226**	(678)
Depreciation	**165**	18	**645**	71
EBITDA	**3,759**	3,136	**15,112**	4,682
Deduct:				
Lease payments treated as capital lease	**21**	–	**85**	–
Warehouse rental revenue	**75**	–	**425**	–
Add:				
Non-cash expenses	**71**	73	**292**	355
Non-recurring expenses (includes add-back Seitel expenses)	**145**	–	**2,663**	–
Cash EBITDA	**3,879**	3,209	**17,557**	5,037
Deduct:				
Net financing costs (income)	**526**	(72)	**2,452**	(318)
Current income tax expense	**440**	665	**1,775**	684
Add:				
Non-cash deferred financing charges	**33**	–	**124**	–
Interest paid (capital lease)	**35**	–	**151**	–
Shareholder free cash flow (SFCF)	**2,981**	2,616	**13,605**	4,671
Cash EBITDA per share basic and diluted	**0.07**	0.06	**0.33**	0.09
SFCF per share basic and diluted	**0.06**	0.05	**0.25**	0.09

CASH EBITDA AND SFCF
YEARS ENDED DECEMBER 31
($ millions)



CASH EBITDA AND SFCF PER SHARE (BASIC AND DILUTED)
YEARS ENDED DECEMBER 31
($)



As reported in previous filings concerning the Seitel acquisition, in addition to the purchase price of $58.6 million, Pulse assumed various future liabilities viewed by the Company as being part of the total cost of the acquisition. These estimated $4.2 million of costs are being expensed over time and categorized as restructuring costs, with a large percentage occurring in the first year, including $2.7 million in 2019. Because these expenses are expected to be non-recurring, they are being excluded from the Company's calculation of cash EBITDA and shareholder free cash flow. Also deducted from the cash EBITDA calculation is the rental revenue received for the use of a portion of the warehouse by a third party.

FINANCIAL INSTRUMENTS

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Financial instruments are recognized on the statement of financial position when the Company becomes a party to the instrument's contractual obligations. The Company's financial assets include cash and cash equivalents, trade and other receivables. Its financial liabilities mainly comprise accounts payable and long-term debt.

FAIR VALUE

The fair values of cash and cash equivalents, accounts receivable and accounts payable approximate their carrying amount largely due to the short-term maturities of these instruments. The fair value of the long-term debt approximates the carrying value because interest charges under the bank loan are based on current Canadian bankers' acceptance rates and margins.

CREDIT RISK

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Company's accounts receivable.

The Company is exposed to customer credit risk in connection with data sales and participation surveys with its customers. The Company's exposure to credit risk is influenced mainly by the individual characteristics of each customer. The nature of the Company's customer base, including the default risk of the industry in which customers operate, has an influence on credit risk. As the Company operates to a large extent in the oil and natural gas industry, nearly all of its trade receivables relate to customers from this industry.

The effective monitoring and control of credit risk is a core competency of the Company. Each new customer is analyzed individually for creditworthiness before payment and delivery terms and conditions are offered. The Company's review includes credit reference checks and credit limits for all customers as well as other monitoring activities. Accounts receivable aging is reviewed regularly.

Certain customers have signed agreements with the Company that provide for extended payment terms. The Company's credit risk increases on these types of arrangements due to the length of time before payments are received. The risk is mitigated by attempting to limit these types of arrangements to major oil and natural gas companies which have long operating histories and adequate resources to fulfill their commitments.

The Company has been doing business with the majority of its customers for many years, with insignificant credit losses to date. The Company does not require collateral in respect of trade receivables.

The Company's customers are in the oil and natural gas industry, with the majority located in Alberta. At December 31, 2019, 88 percent or $7.7 million of total accounts receivable were due from two customers. Of this amount, $2.4 million was collected subsequent to year-end. The Company does not expect any problem in collecting the remaining amounts.

In 2019, the Company recorded a bad debt expense of $180,000 (2018 - $nil). At December 31, 2019, 4 percent or $387,000 of total accounts receivable (two customers) were more than 90 days past due. While one customer assures the Company that payment will be made in due course, the timing of collection is extremely uncertain and the amount was overdue for nine months at December 31, 2019.

The Company has not recorded a bad debt expense since 2012. Accounts receivable over 90 days are monitored and assessed for impairment. Those accounts are evaluated on a case by case basis using information received from the customer and market information. The Company has one other account due for more than 90 days but believes that this account is collectible.

Cash and cash equivalents are held with a Canadian chartered bank that is one of Canada's five largest banks. The carrying amount of financial assets represents the maximum credit exposure. The Company considers the risk on cash and cash equivalents to be limited.

LIQUIDITY RISK

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled in cash or other financial assets, i.e., repaying its debt and paying its suppliers. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to its reputation. Beyond cash on hand of $1.4 million and total working capital of $596,000, the Company had a revolving-term credit facility, which offers flexibility in drawing and paying down debt, without penalty, of which $22.1 million remained available at December 31, 2019 for future draws, as described in "Liquidity, Capital Resources and Capital Requirements".

The Company regularly monitors cash flow. In addition, it monitors funding options available in the capital markets, as well as trends in the availability and costs of such funding, with a view to maintaining financial flexibility and limiting repayment risks. The Company does not believe that it will encounter difficulty in meeting its obligations associated with financial liabilities.

COMMODITY PRICE RISK

The Company is not directly exposed to commodity price risk as it does not have any contracts directly based on commodity prices. A change in commodity prices, specifically oil and natural gas prices, could have a material impact on the Company's customers' cash flows and could therefore affect seismic data library sales and participation surveys. Commodity prices are affected by many factors, including supply and demand. The Company has not entered into any commodity price risk contracts. Given that this is an indirect influence, the financial impact on the Company of changing oil and natural gas prices is not reasonably determinable.

NEW IFRS STANDARDS

A number of new standards, amendments to standards and interpretations have been issued by the International Accounting Standards Board (IASB) but are not yet effective for the year ending December 31, 2019. Accordingly, they were not applied in preparing the condensed consolidated interim financial statements. None is expected to have a significant effect on the consolidated financial statements.

Effective January 1, 2019 the Company adopted IFRS 16, *Leases*. The most significant effect of the new standard will be the lessee's recognition of the initial present value of unavoidable future lease payments as ROU lease assets and lease liabilities on the statement of financial position, including those for most leases that were accounted for as operating leases.

Actual cash flows will be unaffected in applying the new standard. The results are that the lessee's statement of cash flows will reflect increases in cash flows from operating activities (depreciation expense) offset by decreases in cash flows from financing activities (capital lease cash payment for principal). This is the result of the presentation of the payments of the "principal" component of the lease liability that were accounted for as operating leases as a cash flow used in financing activities under the new standard.

Pulse elected to apply the modified retrospective approach and adjusted its retained earnings. An adjustment of $110,000 was made on January 1, 2019. Pulse used an incremental borrowing rate of 6.7 percent to calculate the initial present value of the ROU and lease liability.

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements in conformity with IFRS requires management to make estimates and assumptions. Management's estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. The Company's critical accounting estimates are discussed annually with the Audit and Risk Committee of the Company's Board of Directors and are described below.

SEISMIC DATA LIBRARY

Amortization of the seismic data library, the Company's largest asset, with a net book value of $57.9 million at December 31, 2019 (December 31, 2018 – $11.0 million), is conducted by reference to the estimated timing of the economic return of the seismic library. Amortization of the seismic data library is based on management's estimates of expected future sales, expected useful lives, market developments and experience. These estimates may change due to changes in market conditions, potential prospects, exploration licence periods, exploration and development in certain areas, government regulations and general economic conditions. Because of the inherent difficulty in estimating market developments and future sales, the amortization rates might not accurately reflect the systematic allocation of the seismic data library over its useful life.

Additions to the seismic library arise in two ways: (i) participation surveys, and (ii) the purchase of existing seismic data. Costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized to the seismic data library. Subsequent expenditures on data library assets, such as reprocessing and digitization, are capitalized only when the expenditure increases the asset's future economic benefits. All other expenditures are recognized in earnings as incurred.

The costs of purchased data are amortized on a straight-line basis over seven years.

The carrying amounts of the seismic data library are reviewed at each reporting date by management to determine whether there is any indication of impairment. If so, the asset's recoverable amount is estimated and impairment recorded, if any. The determination of the Company's cash-generating units was based on management's judgements in regards to the smallest identifiable group of seismic data that generates cash inflows largely independent of the cash inflows from other data. Estimating future cash flows and residual values for purposes of impairment testing requires management to make judgments regarding long-term forecasts of future revenues and costs and future residual values related to the seismic data library. These forecasts are uncertain as they require assumptions about future market conditions and demand for seismic data. Significant and unanticipated changes in these assumptions could require a provision for impairment in a future period.

As discussed above, the Company did not recognize an impairment loss in 2019 or 2018.

Estimates of useful lives and the pattern of expected future economic benefits are based on historical experience and internal business plans. Expected future economic benefits are determined based on historical revenue patterns. Future deviations from the Company's historical returns could materially affect the current amortization methodology.

PERFORMANCE SHARE UNITS

In determining the amount of share-based compensation related to PSUs, management makes estimates about future results and vesting criteria. It is reasonably possible that future outcomes could be different from the estimates and could require a material adjustment to the share-based compensation expense recorded in future periods. The impact of any change in the number of PSUs expected to vest is recognized in the period the estimate is revised.

DEFERRED TAX ASSETS

Significant management judgement is required to determine the amount of deferred tax assets that can be recognized, based on the likely timing and level of future taxable income. The estimates of projected future taxable income are based on a variety of factors and assumptions, many of which are subjective and beyond the Company's control. Accordingly, these estimates could differ significantly from year to year, and the Company might end up realizing more or less of the deferred tax assets than recognized in the consolidated financial statements.

DISCLOSURE CONTROLS AND PROCEDURES (DC&P) AND INTERNAL CONTROLS OVER FINANCIAL REPORTING (ICFR)

DC&P

Management has evaluated the effectiveness of its DC&P (as defined in National Instrument 52-109), under the supervision of its CEO and CFO, at December 31, 2019. Based on this evaluation, the CEO and CFO have concluded that the DC&P were effective at December 31, 2019.

ICFR

Management under the supervision of its CEO and CFO evaluated the effectiveness of ICFR (as defined in National Instrument 52-109) at December 31, 2019, in accordance with Internal Control 2013 Integrated Framework, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the Control Objectives for Information and Related Technology Framework (COBIT). Based on this evaluation, Pulse's CEO and CFO concluded that the ICFR were effective at December 31, 2019.

No changes were made to ICFR during the period beginning on October 1, 2019 and ending on December 31, 2019 that have materially affected, or are reasonably likely to materially affect, Pulse's ICFR.

RISK FACTORS

OIL AND NATURAL GAS PRICES

Pulse's customers are oil and natural gas exploration and development companies. Oil and natural gas prices are volatile and directly affect the capital budgets, drilling activity, and access to capital and credit by Pulse's customers, which in turn directly affect the demand by such customers for seismic data.

DATA ACQUISITION, DEMAND FOR SEISMIC DATA AND PARTICIPATION SURVEYS

Pulse's ability to generate revenue, cash EBITDA, shareholder free cash flow and earnings and to grow its seismic data library depends on the acquisition of new data and participation surveys and the demand for seismic data from its oil and natural gas customers over geological plays and areas that such customers focus on in a given period. Activity in such plays and areas depends on commodity prices, customers' budgets, geological understanding, advances in drilling technology, government fiscal and regulatory regimes, and access to processing and pipeline capacity, all of which are beyond Pulse's control. The Company endeavours to grow its high-quality proprietary data library, to expand and maintain its customer base, and to provide good customer service with short delivery time and broad data coverage in prospective locations.

PRICING OF DATA LIBRARY LICENCE SALES

Pulse's ability to generate revenue, cash EBITDA, shareholder free cash flow and earnings and to grow its data library depends on its ability to market data library licences and on the pricing of these licences. Pulse prices its data competitively while endeavouring to maintain the integrity of the database.

CYBERSECURITY

Pulse maintains strong cybersecurity over its IT systems, networks and website with the goal of preventing cyber-attacks. Cyber-attacks are intentional attempts to gain unauthorized access to information systems, networks and websites for unlawful or improper purposes. Attempts to breach cybersecurity are becoming more sophisticated and could lead to unauthorized access and release of confidential information and disruption in operating systems.

Cyber attackers may use a range of techniques, from manipulating people to using sophisticated malicious software and hardware on a single or distributed basis. Some cyber-attacks use a combination of techniques in their attempts to evade safeguards. Pulse uses firewalls, intrusion prevention systems and antivirus software in the security program of its systems and networks. The risk and consequences of cyber-attacks can surpass traditional physical security risk due to the rapidly evolving scope and sophistication of these threats.

A successful attack on Pulse's systems, networks, website or infrastructure could prevent Pulse from providing reliable service and information, allow for the unauthorized interception, destruction, use or dissemination of Pulse's or its customers' information, and/or prevent Pulse from operating its networks. Such events could cause the Company to lose customers, lose revenue, incur expenses, and suffer reputational and goodwill damages. It could also lead to a loss or devaluation of Pulse's intellectual property rights and could subject the Company to litigation or government investigation. The costs of such events could include liability for information loss, and repairs to infrastructure and systems. Pulse's insurance may not cover or be adequate to fully reimburse the Company for these costs and losses.

To mitigate these risks, Pulse has implemented measures and processes that mitigate the risk of physical and cyber-attacks. Pulse has policies, controls and monitoring systems that protect its assets and employees. Pulse also uses cyber threat intelligence, testing, intrusion prevention/detection and incident response capabilities to help identify possible cyber threats and adjust its security measures accordingly.

Pulse also has a recovery plan in case of a cyber-attack. It includes backup infrastructure and systems that mirror the primary infrastructure and systems used in the day-to-day operations. The recovery plan has been tested.

Pulse also uses a third party to store its physical seismic data, the Company's revenue-generating asset, and a backup copy of the digital seismic data library. The third party backs-up the data using the same technology as Pulse, which includes redundant offsite storage in a secured data facility as well as tape backups.

As part of the risk management strategy, the Company's IT Director reports in person on a regular basis to the Audit and Risk Committee of the Board of Directors the key risk indicators including any new risks that Pulse is facing in its day-to-day operations along with updates to the risk mitigation plans. The Audit and Risk Committee has the oversight responsibility for cyber security. The goal of the strategy is to be prepared, protected, and able to quickly detect and respond appropriately to the situation. The strategy to ensure post-breach reporting requirements are met in case of security breach.

Pulse has not experienced a security incident or breach. If a material security breach happens in the future, the Pulse Disclosure Committee would enforce the communication plan to inform the relevant stakeholders including employees, directors, customers, securities commissions, stock exchanges, government agencies and shareholders as soon as possible.

RELICENSING (CHANGE-OF-CONTROL) FEES AND PARTNER COPY SALES

Data library licences are generally not transferable. Under Pulse's current standard-form licence agreement, upon a change of control of the licensee in a merger or acquisition transaction, a change-of-control fee is generally payable. Under Pulse's current standard-form licence agreement, a licensee generally may not give the licensed data to a joint interest partner in the oil and natural gas lands. If the joint interest partner wishes to view or interpret the seismic data, it must purchase an additional copy directly from Pulse.

The precise terms of individual licence agreements (including those historically used by Pulse and its predecessors and those assumed by Pulse on data acquisitions) can vary greatly. Relicensing (change-of-control) fees may not always be payable and joint interest partners may not always wish or have to purchase an additional licensed copy.

In addition, merger-and-acquisition and joint venture activity in the oil and gas industry is unpredictable.

PRE-FUNDING OF PARTICIPATION SURVEYS AND SUBSEQUENT DATA LIBRARY LICENCE SALES

Pulse's rate of pre-funding for participation surveys varies, with the actual target percentage funding of each particular survey determined by Pulse ahead of time depending on Pulse's risk analysis of such survey and competitive conditions in the area. Factors affecting these individual survey program targets include: circumstances in which Pulse believes there is a high probability of additional participants joining the survey before completion or additional licence sales after completion of the survey, or where a survey is located in a strategic location, or where competitive conditions require a lower level of pre-funding.

Pulse's ability to generate revenue, cash EBITDA, shareholder free cash flow and earnings and to grow the data library depends on its ability to obtain targeted levels of pre-funding for participation surveys, and to make subsequent seismic data library sales from such surveys.

COMPLETION OF PARTICIPATION SURVEYS

Pulse obtains presales of licences for participation surveys based on its budgeted costs and program schedule. Pulse's ability to generate revenues, cash EBITDA, shareholder free cash flow and earnings depends on its ability to complete committed participation surveys on time and within budget. Cost overruns are generally absorbed by Pulse and effectively reduce the percentage of pre-funding. The Company endeavours to manage this risk through the use of a dedicated survey project team with extensive experience.

ENVIRONMENTAL, HEALTH AND SAFETY RISKS

Pulse's field operations for participation surveys are subject to laws and regulations relating to environmental protection and occupational health and safety. A breach of these laws and regulations could result in material fines and civil lawsuits, as well as reputational damage. Pulse endeavours to reduce this risk by employing seasoned specialists who provide comprehensive training, field supervision and monitoring, and by working with a network of trusted sub-contractors who operate to high standards. In March 2018, Pulse received the renewal of its three-year Certificate of Recognition (COR) issued by Enform and the Government of Alberta, with a score of 96 percent. The COR program recognizes employers in the Alberta oil and natural gas industry having a health and safety management system that meets provincial standards.

LAWS AND REGULATIONS

Pulse's oil and natural gas customers are subject to federal and provincial laws and regulations, including those pertaining to taxation, royalty rates, environmental protection and safety. Compliance with these laws and regulations, and changes in these laws and regulations, may affect oil and natural gas exploration and development activities and the demand for seismic data licences and participation surveys by such customers.

Pulse's field operations for participation surveys are subject to federal and provincial laws and regulations, including laws and regulations relating to safety and environmental protection. Pulse and its contractors are required to invest financial and managerial resources to comply with such laws and related permit requirements in their operations. Although such expenditures historically have not been material to Pulse, such laws and regulations are subject to change and, accordingly, it is impossible for the Company to predict the cost or impact of such laws and regulations on its future operations.

COMPETITION

The western Canadian geophysical services industry in which Pulse operates is competitive and price-sensitive. Pulse competes with companies which may have greater financial resources, and certain of which are large international geophysical services companies that offer a wider array of geophysical services to their clients than Pulse. Pulse also competes with other companies that acquire, market and license seismic data, that maintain their own seismic data libraries, and that compete against Pulse in shooting participation surveys and licensing seismic data to their customers. Pulse also competes against oil and natural gas companies that may choose to license their own proprietary seismic data to customers. To mitigate this risk, Pulse's management continuously evaluates its marketing plan and marketing efforts. In addition, the Company owns high-quality data with extensive coverage in the WCSB. Other geophysical companies that own large data libraries are considered to be indirect competitors of Pulse, as there is generally little overlap between 3D databases. With each company owning unique seismic data, clients seeking specific data will usually choose to license available data from the appropriate library as the cost of overshooting an already-surveyed area is much higher than licensing existing data. Seismic data library companies and individual oil and gas companies may, however, elect to overshoot an existing 3D dataset if it is not of the desired quality or specifications.

DEPENDENCE ON QUALIFIED SEISMIC CONTRACTORS

Pulse depends on qualified seismic acquisition contractors to complete its seismic surveys on time and within budget. Pulse endeavors to enter into master service agreements and to establish relationships with its key contractors. The recent downturn in the business has led to a consolidation of seismic acquisition contractors.

KEY MANAGEMENT, OPERATIONS AND MARKETING PERSONNEL

Pulse depends on certain key management, operations and marketing personnel for the success of its seismic acquisition, marketing and licensing business. Pulse endeavors to obtain written employment agreements with such personnel containing confidentiality and non-competition provisions where appropriate. Personnel risk is further mitigated by providing compensation packages designed to support Pulse's business philosophy and which are both market-driven and performance-based. This includes short- and long-term incentive programs which are directly tied to shareholder free cash flow per share, which the Board of Directors believes is the key financial metric for the long-term increase in the value of Pulse. Pulse also has a succession plan to provide adequate training and education to its future leaders, which is reviewed annually by the Board of Directors.

LOSS OF SEISMIC DATA

Pulse's largest asset and source of revenue is the seismic data library. The safety and security of the data library asset is imperative to the Company's success. The physical data is stored in two secure locations and managed by Pulse staff and a data storage company. The majority of the physical data has been digitized, with the exception of a portion of the 2D data acquired in 2019, and back-up digital copies are kept in separate secure locations. For further information, please also see "Cybersecurity" above.

PROTECTION OF INTELLECTUAL PROPERTY

Pulse relies on a combination of licence agreements, copyright, confidentiality and other intellectual property rights to protect its ownership rights and copyright in its seismic data. Despite Pulse's efforts to enforce its licence agreements and copyright, there is a risk that unauthorized parties might improperly obtain, copy or use Pulse's seismic data without Pulse's knowledge or permission. The cost of litigation necessary to enforce Pulse's ownership rights and copyright could be prohibitive.

NEW PRODUCTS

Seismic data is used by oil and natural gas exploration and development companies to identify portions of geological formations that have the potential to hold hydrocarbons. There are currently no other products that compete directly against seismic data for such purposes. Should a new product or method be introduced that was technically and/or economically comparable or superior to seismic data, Pulse's data library sales and/or the pricing thereof could be adversely affected.

CLIMATE CHANGE

The Company's seismic data library is a digital asset that is generally unaffected by climate change. Climate change, however, affects Pulse's customers, the oil and natural gas exploration and production companies who license seismic data for drilling and exploration. New carbon and environmental laws and regulations, including those related to climate change and carbon regulations, as well as the physical effects of climate change, including extreme weather events, resource shortages and changing sea levels and temperatures, may adversely affect these companies, their businesses, operations and financial condition over time and will change their exploration, development and production programs, their capital expenditures and their need for seismic data, which could result in an unmeasurable adverse impact on Pulse sales, cash flow and profitability.

Climate change could also affect the way the Company conducts participation surveys. Climate change could reduce or extend the window that the Company has to collect data in the field without major impact on the environment. The ground has to be dry or thoroughly frozen for Pulse to conduct participation surveys. Extreme weather conditions could limit access to survey areas and increase health and safety risks.

The Company recognizes climate change as an increasingly important global challenge and is committed to promoting responsible energy use in its own business and operations. The Board and management of the Company routinely monitor proposed changes in carbon and environmental policy, legislation and regulation and will continue to assess the risks of climate change on the business and operations of the Company.

ADDITIONAL INFORMATION

You may find additional information relating to Pulse, including the Company's Annual Information Form, on SEDAR at www.sedar.com.

FORWARD-LOOKING INFORMATION

This document contains information that constitutes "forward-looking information" or "forward-looking statements" (collectively, "forward-looking information") within the meaning of applicable securities legislation. Forward-looking information is often, but not always, identified by the use of words such as "anticipate", "believe", "expect", "plan", "intend", "forecast", "target", "project", "guidance", "may", "will", "should", "could", "estimate", "predict" or similar words suggesting future outcomes or language suggesting an outlook.

This MD&A and, specifically, the Outlook and the Liquidity, Capital Resources and Capital Requirements sections herein contain forward-looking information which includes, but is not limited to, statements regarding:

- The outlook of the Company the year ahead, including future operating costs and expected revenues;
- Recent events on the political, economic, regulatory and legal fronts affecting the industry's medium- to longer-term prospects, including progression and completion of contemplated pipeline projects;
- The Company's capital resources and sufficiency thereof to finance future operations, meet its obligations associated with financial liabilities and carry out the necessary capital expenditures through 2020;
- Pulse's capital allocation strategy;
- Pulse's dividend policy;
- Oil and natural gas prices and forecasted trends;
- Oil and natural gas drilling activity and land sales activity;
- Oil and natural gas company capital budgets;
- Future demand for seismic data;
- Future seismic data sales;
- Future demand for participation surveys;
- Pulse's business and growth strategy; and
- Other expectations, beliefs, plans, goals, objectives, assumptions, information and statements about possible future events, conditions, results and performance, as they relate to the Company or to the oil and gas industry as a whole.

Sources for the forecasts and the material assumptions underlying this forward-looking information are, where applicable, noted in the relevant sections of this MD&A.

By its very nature, forward-looking information involves inherent risks and uncertainties, both general and specific, and risks that predictions, forecasts, projections and other forward-looking statements will not be achieved. Pulse does not publish specific financial goals or otherwise provide guidance, due to the inherently poor visibility of seismic revenue. We caution readers not to place undue reliance on these statements as a number of important factors could cause the actual results to differ materially from the beliefs, plans, objectives, expectations and anticipations, estimates and intentions expressed in such forward-looking information. These factors include, but are not limited to:

- Uncertainty of the timing and volume of data sales from the newly acquired seismic data library, which was partially funded with long-term debt;
- Volatility of oil and natural gas prices;
- Risks associated with the oil and gas industry in general;

- The Company's ability to access external sources of debt and equity capital;
- Credit, liquidity and commodity price risks;
- The demand for seismic data and participation surveys;
- The pricing of data library licence sales;
- Cybersecurity;
- Relicensing (change-of-control) fees and partner copy sales;
- The level of pre-funding of participation surveys, and the Company's ability to make subsequent data library sales from such participation surveys;
- The Company's ability to complete participation surveys on time and within budget;
- Environmental, health and safety risks;
- Federal and provincial government laws and regulations, including those pertaining to taxation, royalty rates, environmental protection and safety;
- Competition;
- Dependence on qualified seismic field contractors;
- Dependence on key management, operations and marketing personnel;
- The loss of seismic data;
- Protection of intellectual property rights;
- The introduction of new products; and
- Climate change.

Pulse cautions that the foregoing list of factors that may affect future results is not exhaustive. Additional information on these risks and other factors which could affect the Company's operations and financial results is included under "Risk Factors" herein, under "Risk Factors" in the Company's most recent annual information form, and in the Company's most recent audited annual financial statements, management information circular, quarterly reports, material change reports and news releases. Copies of the Company's public filings are available on SEDAR at www.sedar.com.

When relying on forward-looking information to make decisions with respect to Pulse, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Furthermore, the forward-looking information contained in this MD&A is provided as of the date of this MD&A and the Company does not undertake any obligation to update publicly or to revise any of the included forward-looking information, except as required by law. The forward-looking information in this document is provided for the limited purpose of enabling current and potential investors to evaluate an investment in Pulse. Readers are cautioned that such forward-looking information may not be appropriate, and should not be used, for other purposes.

CORPORATE INFORMATION

Pulse is a market leader in the acquisition, marketing and licensing of 2D and 3D seismic data to the western Canadian energy sector. Pulse owns the largest licensable seismic data library in Canada, currently consisting of approximately 65,310 net square kilometres of 3D seismic and 829,207 net kilometres of 2D seismic. The library extensively covers the Western Canada Sedimentary Basin where most of Canada's oil and natural gas exploration and development occur.

OFFICERS

Neal Coleman
President and CEO

Pamela Wicks
Vice President Finance and CFO

Trevor Meier
Vice President, Sales and Marketing

Catherine Samuel
Corporate Secretary

BOARD OF DIRECTORS

Robert Robotti (1) (2) (3)
Chair

Karen El-Tawil (2) (4)
Director

Paul Crilly (1) (3)
Director

Dallas Droppo (1) (2) (3)
Director

Grant Grimsrud (1) (4)
Director

Neal Coleman (4)
Director

(1) Member of the Audit and Risk Committee

(2) Member of the Compensation Committee

(3) Member of the Corporate Governance and Nominating Committee

(4) Member of the Environment, Health and Safety Committee

BANKERS

The Toronto-Dominion Bank
Calgary, Alberta

Alberta Treasury Branches
Calgary, Alberta

REGISTRAR AND TRANSFER AGENT

Computershare Trust Company of Canada
Calgary, Alberta

SOLICITORS

McCarthy Tétrault LLP
Calgary, Alberta

AUDITORS

KPMG LLP
Calgary, Alberta

STOCK EXCHANGE LISTING

TSX: PSD
OTCQX: PLSDF

HEAD OFFICE

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