

## VALENS GROWWORKS CORP. – BUY

### Initiating Coverage With BUY and \$4.50 Target

#### ACTION – Initiating Coverage With BUY Rating & \$4.50/Share Target

Valens is a vertically-integrated producer of cannabis products with a focus on proprietary extraction processes. The company's business strategy is focused on producing and selling high-margin products and services from carefully extracted cannabis oil. The company's revenue streams are primarily derived from three key extraction services: (1) oil, (2) resin, and (3) white label products. We forecast that the majority of the company's revenue over the near-term will be derived through cannabis extraction tolling agreements with existing ACMPR licensed producers.

#### Company is Focused on Proprietary Extraction Processes

Valens has carefully chosen extraction parameters to produce the highest quality oils and resins. The company's proprietary process for extraction is what sets it apart from competitors with similar extraction equipment. In addition, Valens has been able to improve its efficiencies so that the least possible amount of material is wasted during processing. A higher efficiency in this process allows for greater revenue return per gram of raw cannabis extracted.

#### Company is Leveraged to Growth in Cannabis Oils and Derivative Products

We forecast that the Canadian market will follow some of the trends seen in American states where recreational cannabis is legal. In these markets products derived from cannabis oils have become a large and growing market segment. The company will leverage this opportunity by offering clients proprietary extraction services to produce cannabis oil and derivative products. The company has installed a number of CO<sub>2</sub> and ethanol extraction systems that have been customized to ensure that the end product does not lose valuable compounds otherwise lost in the refining process. These systems are currently capable of processing more than 72,000 kg of cannabis per year.

#### Valens Farms Joint Venture will enhance Company's Cultivation Capacity

Valens Farms is involved in a joint venture to complete a 400,000 square foot (Phase 1) controlled-environment strain-segregated hybrid greenhouse with its partner Kosha Projects Inc. As per the agreement, Kosha will contribute the land and all facility development and construction costs. Valens is responsible for all design and outfitting inputs, budgetary guidance, consulting and advisory services during construction and development of the facility. Phase 1 will be completed in a number of stages: currently undergoing construction is the first 50,000ft<sup>2</sup> (Phase 1A). The estimated cost of Phase 1A is approximately \$15 million and management estimates that the first planting will occur in Q1/19 and that the first harvest will be in Q2/19. Once the Phase 1 is fully constructed (400,000 ft<sup>2</sup>), this facility will be capable of producing more than 50,000 kg/year.

#### Valens' Balance Sheet remains strong and the company has "zero" debt

The company currently has \$5 mm in net cash and has fully funded its cannabis production and extraction processing facility in Kelowna, B.C. This strong cash position will also allow management to pursue strategic acquisitions and address potential working capital requirements.

VGW - CSE	\$1.45
Target:	\$4.50
Proj. Return:	210%
Valuation:	12x EV/EBITDA

#### Share data

Basic shares O/S (mm)	72.4
Fully Diluted (mm)	80.3
Market Cap (\$mm)	\$105.0
Enterprise Value (\$mm)	\$99.9
Cash (\$mm)	\$5.1
Debt (\$mm)	\$0.0
Next Reporting Date	November

#### Thomson Chart – One Year



#### Corporate Profile

Valens is a vertically-integrated producer of cannabis products with a focus on proprietary extraction processes. Through its three wholly-owned subsidiaries - Valens Agritech (VAL), Valens Farms (FARMS), and Supra THC Services the company is involved in: customized cannabis extraction, third party product development, cultivation, research and development and testing. The company is currently capable of processing more than 72,000 kg of cannabis per year.

#### Upcoming Events

Q3/F18 results – October 2018  
 ACMPR Cultivation License – Q3/18

**CANNABIS SECTOR**

# VALENS GROWORKS CORP.

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*Note: Report pricing date: 04-Sept-2018*

**CANNABIS RESEARCH****VALENS GROWWORKS CORP.****EXECUTIVE SUMMARY****VALENS IS FOCUSED ON PROPRIETARY EXTRACTION PROCESSES**

Valens' business strategy is focused on producing and selling high-margin products and services from carefully extracted cannabis oil. The company's revenue streams are primarily derived from three key extraction services: (1) oil, (2) resin, and (3) white label products. We forecast that the majority of the company's revenue over the near-term will be derived through cannabis extraction tolling agreements with existing ACMPR licensed producers. Through these tolling agreements, the company will process raw cannabis into cannabis resin and finished oils. Management is developing relationships with a number of existing LPs whereby they will process raw cannabis into cannabis resin and finished oils. The company is also looking to develop white label products where it will provide clients with a finished oil or derivative product. The raw material inputs will either be sourced internally or through the wholesale market. The company is currently capable of processing 6,000 kg of raw cannabis per month.

**COMPANY IS LEVERAGED TO GROWTH IN CANNABIS OILS AND DERIVATIVE PRODUCTS**

The introduction of cannabis oils is positive for the industry and the company, as they will be another factor in increasing the acceptance of medical marijuana as a legitimate treatment option for chronic pain and other medical conditions. According to data from Health Canada, sales of cannabis oils in the most recent quarter (March 31, 2018) were 10,326 kg, up 11% quarter-over-quarter and up 82% year-over-year. Furthermore, with the new development of controlled-dose capsules made from extracted oil, it is believed that demand for concentrates and derivative products will overtake flower sales by 2020. Additionally, the Canadian government has promised the inclusion of cannabis derivatives in Health Canada legislation by end 2019. According to the Deloitte Study, smoking marijuana is still the preferred method of consumption among users in Canada; however, edibles are becoming increasingly popular and they now account for between 6%-13% of total consumption. If the Canadian market follows some of the trends seen in the U.S. where recreational marijuana is legal, products derived from cannabis oils should become a large and growing segment of the market.

**VALENS FARMS JOINT VENTURE WILL ENHANCE COMPANY'S CULTIVATION CAPACITY**

On April 11, Valens announced the creation of a new subsidiary company, Valens Farms, to commercially produce premium quality specialty-strain cannabis using dedicated, sustainable monocropping technology, and to further expand its supercritical CO<sub>2</sub>-extracted cannabis oil capacity. The first initiative for Valens Farms is to complete a 400,000 square foot (Phase 1) controlled-environment strain-segregated hybrid greenhouse as part of a large-scale indoor facility on the 50-acre property through its joint venture with Kosha Projects Inc. As per the agreement, Kosha will contribute the land and all facility development and construction costs. Valens is responsible for all design and outfitting inputs, budgetary guidance, consulting and advisory services during construction and development of the facility. Valens Farms will operate the facility, producing premium quality cannabis and supercritical CO<sub>2</sub>-extracted cannabis oils. Phase 1 will be completed in a number of stages: currently undergoing construction is the first 50,000ft<sup>2</sup> (Phase 1A). The estimated cost of Phase 1A is approximately \$15 million and management estimates that the first planting will occur in Q1/19 and that the first harvest will be in Q2/19. Once the Phase 1 is fully constructed (400,000 ft<sup>2</sup>), this facility will be capable of producing more than 50,000 kg/year.

**INTERNATIONAL OPPORTUNITIES**

Valens is looking to expand into the international markets, which it believes could provide significant growth opportunities and on August 29th, Valens signed a letter of intent with Colombian licensed producer Eticann S.A.S Zomac. Under the terms of the agreement, the company will purchase cannabis materials from Eticann for use in its proprietary extraction system. In addition, Valens will have exclusive rights to provide extraction services for Eticann's oil product offerings, will provide related expertise to Eticann for toll processing services in Colombia and surrounding markets, and will be granted the option to purchase up to 50% of Eticann's issued and outstanding shares. As Valens' first international supply agreement, this announcement strengthens the company's intention of capitalizing on international markets under the terms of its Dealer's License.

## **VALENS BALANCE SHEET REMAINS STRONG AND THE COMPANY HAS “ZERO” DEBT**

The company currently has \$5 mm in net cash and has fully funded its cannabis production and extraction processing facility in Kelowna, B.C. This strong cash position will also allow management to pursue strategic acquisitions and address potential working capital requirements.

## **INITIATING WITH A BUY RECOMMENDATION AND A \$4.50 TARGET PRICE**

We are initiating coverage of Valens GroWorks Corp. with a **BUY** rating and **target price of \$4.50** per share. To arrive at our target price, we applied a 12x EV/EBITDA multiple to our 2020 estimate and then discounted the result using a 15% discount rate.

## INDUSTRY OVERVIEW

Outlined below is a summary of our industry overview that was published in our September 20, 2017 report: *The End of Prohibition – Investing in Canada’s Growing Cannabis Industry*.

### Demand for Medical Cannabis

We currently forecast that there will be 630,000 (1.7% of the population) registered medical cannabis patients in Canada by 2024, resulting in annual demand of approximately 230,000 kg. For 2018, we forecast demand of roughly 95,000 kg. Based on these forecasts, we estimate that by 2024, the value of the Canadian medical cannabis market could be \$1.9 billion to \$2.6 billion.

While legal access to medical cannabis has been available since 1999, the majority of the medical community has remained skeptical about its ability to treat certain diseases and medical conditions. This skepticism has largely been attributed to the lack of definitive clinical data about the efficacy of medical cannabis and to the social stigma regarding cannabis. However, industry proponents have been working hard to educate the medical community about the benefits of cannabis, and recent third-party studies are adding to its credibility as a legitimate treatment option for patients with chronic pain and other medical conditions. As a result, we believe the medical cannabis industry is still in its infancy, and we forecast strong growth for the foreseeable future.

Figure 1: Medical Cannabis Demand Forecast

MRCC Forecast - Medical Market Demand		
	2018	2024
Registered patients - 1.7% penetration rate by 2024	259,403	630,000
Annual demand in kg based on avg. consumption of 1.0 gram/day	94,682	229,950

Source: Mackie Research Capital

### Demand for Recreational Cannabis

Market studies indicate that 18% to 22% of the Canadian population aged 18 and over currently consumes recreational cannabis, so there is already a large and established user base. This translates into annual cannabis demand of approximately 700,000 to 1 million kg per year, all of which is being supplied through illegal channels. Furthermore, we believe that there are a number of individuals who would be willing to try cannabis once it becomes legal, which could create additional consumer demand. Based on these forecasts, we estimate that the value of the Canadian recreational cannabis market in 2018 to be approximately \$5.2 billion to \$7.9 billion (based only on dried flower sales).

Figure 2: Recreational Cannabis Demand Forecast

MRCC Forecast - Recreational Market Demand								
Percentage of population and frequency of use	Adjusted Resident Population 2018	Yearly Demand						
		Low	g/d	Medium	g/d	High	g/d	
Daily	5%	1,300,478	608,623,518	1.3	749,075,099	1.6	889,526,680	1.9
Weekly	4%	1,151,754	82,926,289	0.75	113,332,595	1.0	143,738,901	1.3
Monthly	3%	808,551	6,258,183	0.43	10,042,201	0.7	13,826,219	0.95
Occasionally	7%	2,062,741	1,237,645	0.2	2,475,290	0.4	3,712,934	0.6
Total	19%	5,323,524						
Total Demand	Kilos		699,046		874,925		1,050,805	

Source: Mackie Research Capital & RAND Corporation - Kilmer, B., J. Caulkins, G. Midgette, et al. 2013

### Supply/Demand

We currently forecast total demand for medical and recreational cannabis to be approximately 795,000 kg in 2018. Despite Canada’s push to generate sufficient supply, we forecast that licensed producers exited 2017 with cannabis production capacity of just over

125,000 kg/year, which will be not nearly enough to fulfill near-term demand. We do not forecast supply/demand equilibrium until 2020.

More than \$4.5 billion has been raised in the cannabis industry since January 2014, and the majority of these funds have been directed at expanding existing facilities or building new ones. The production shortfall will result in product shortages and retail price volatility. As a result, we believe the illicit market will continue to be the principal source of supply for the majority of recreational users for the foreseeable future.

### Retail Distribution

The majority of provinces have now outlined their plans for retail distribution. Ontario, Quebec, PEI, New Brunswick and Nova Scotia have elected to have all retail distribution (including online) controlled by their respective liquor boards. However, B.C., Alberta, Saskatchewan, Manitoba, and Newfoundland have announced plans that involve both public and private sector participation. The following chart provides a basic outline of proposed regulations by province:

**Figure 3: Proposed Provincial Regulations of Cannabis Sales**

Province	Legal Age	Distribution Method	Notes
British Columbia	19	Public & Private	<ul style="list-style-type: none"> <li>Liquor, tobacco, and cannabis not to be sold in same store</li> <li>Government will run all online &amp; wholesale operations</li> </ul>
Alberta	18	Public & Private	<ul style="list-style-type: none"> <li>Government will control online sales</li> <li>Liquor, tobacco, pharmaceuticals, and cannabis not to be sold in same store</li> <li>No limit to number of retail licenses, however no person(s) or entity can hold more than 15% of licenses in the province</li> </ul>
Saskatchewan	19	Private	<ul style="list-style-type: none"> <li>Regulated by Saskatchewan Liquor and Gaming Authority</li> <li>51 retail licensees selected</li> </ul>
Manitoba	19	Public & Private	<ul style="list-style-type: none"> <li>Recreational home-growing to be banned</li> <li>Manitoba Liquor and Gaming Authority will regulate sales</li> <li>Retailed by four private companies (Delta 9, NAC, Tokyo Smoke, 10552763 Canada Corporation)</li> </ul>
Ontario	19	Private	<ul style="list-style-type: none"> <li>Online channel for retail cannabis through the OCS starting October 17</li> <li>Private retail model will be rolled out in April 2019</li> </ul>
Quebec	18	Public	<ul style="list-style-type: none"> <li>Regulated by the Société des alcools du Québec</li> <li>Home-growing banned without license</li> <li>20 retail stores</li> </ul>
New Brunswick	19	Public	<ul style="list-style-type: none"> <li>Regulated by New Brunswick Liquor Corporation</li> <li>20 new retail stores</li> </ul>
Newfoundland & Labrador	19	Public & Private	<ul style="list-style-type: none"> <li>Regulated by the Newfoundland and Labrador Liquor Corp.</li> <li>24 cannabis retail stores</li> </ul>
Prince Edward Island	19	Public	<ul style="list-style-type: none"> <li>Regulated by the Prince Edward Island Liquor Control Commission</li> <li>Four dedicated retail sites</li> </ul>
Nova Scotia	19	Public	<ul style="list-style-type: none"> <li>Regulated by Nova Scotia Liquor Corporation</li> <li>Sold by 9 outlets of the liquor board</li> </ul>
Yukon	19	Public & Private	<ul style="list-style-type: none"> <li>Regulated by the Yukon Liquor Corporation</li> <li>Once legalized, private retailers may apply for license</li> </ul>
Northwest Territories	19	Public	<ul style="list-style-type: none"> <li>Regulated by Northwest Territories Liquor Commission</li> <li>Initially, sales will take place in existing liquor stores</li> <li>Private retail will be discussed after legalization</li> </ul>
Nunavut	19	Public & Private	<ul style="list-style-type: none"> <li>Regulated by Nunavut Liquor Commission</li> <li>Allowing private retailers governed by the Commission</li> <li>Initial sales will take place online</li> </ul>

Source: Toronto City News, The Canadian Press, March 20<sup>th</sup>, 2018, and MRCC

## Taxation

The federal government is pushing the provinces to commit to low taxes on recreational cannabis.

One large omission from the proposed *Cannabis Act* is how the federal and provincial governments will tax recreational cannabis and how that tax revenue will be shared. However, in early October, Prime Minister Justin Trudeau proposed a federal excise tax on recreational cannabis once it becomes legal in July, with the provinces and territories receiving half the revenue. Each gram of cannabis would be subject to an excise tax of \$1.00 on sales up to \$10.00 and a 10% tax on sales of more than \$10.00. In addition, all sales of cannabis will be subject to HST.

Federal Finance Minister Bill Morneau is continuing to push for a low-tax commitment from his provincial counterparts, highlighting the need for a coordinated approach to cannabis taxation. In a statement, he said, “We need to get it right, and we need to do it together. Our twin goals are to keep cannabis out of the hands of youth and keep profits out of the hands of criminals. This will mean keeping taxes low and working together on an ongoing basis to ensure a coordinated approach.”

## Cannabis Oils

In June 2015, the Supreme Court of Canada decided (*R. v. Smith*) that restricting legal access to only dried marijuana was unconstitutional. The Court determined that individuals with a medical need have the right to use and make other cannabis products. To eliminate uncertainty around a legal source of supply of cannabis, the Minister of Health issued section 56 class exemptions under the Controlled Drugs and Substances Act in July 2015. This exemption allowed licensed producers to produce and sell cannabis oil in addition to dried marijuana. It also allowed authorized users to possess and alter different forms of cannabis.

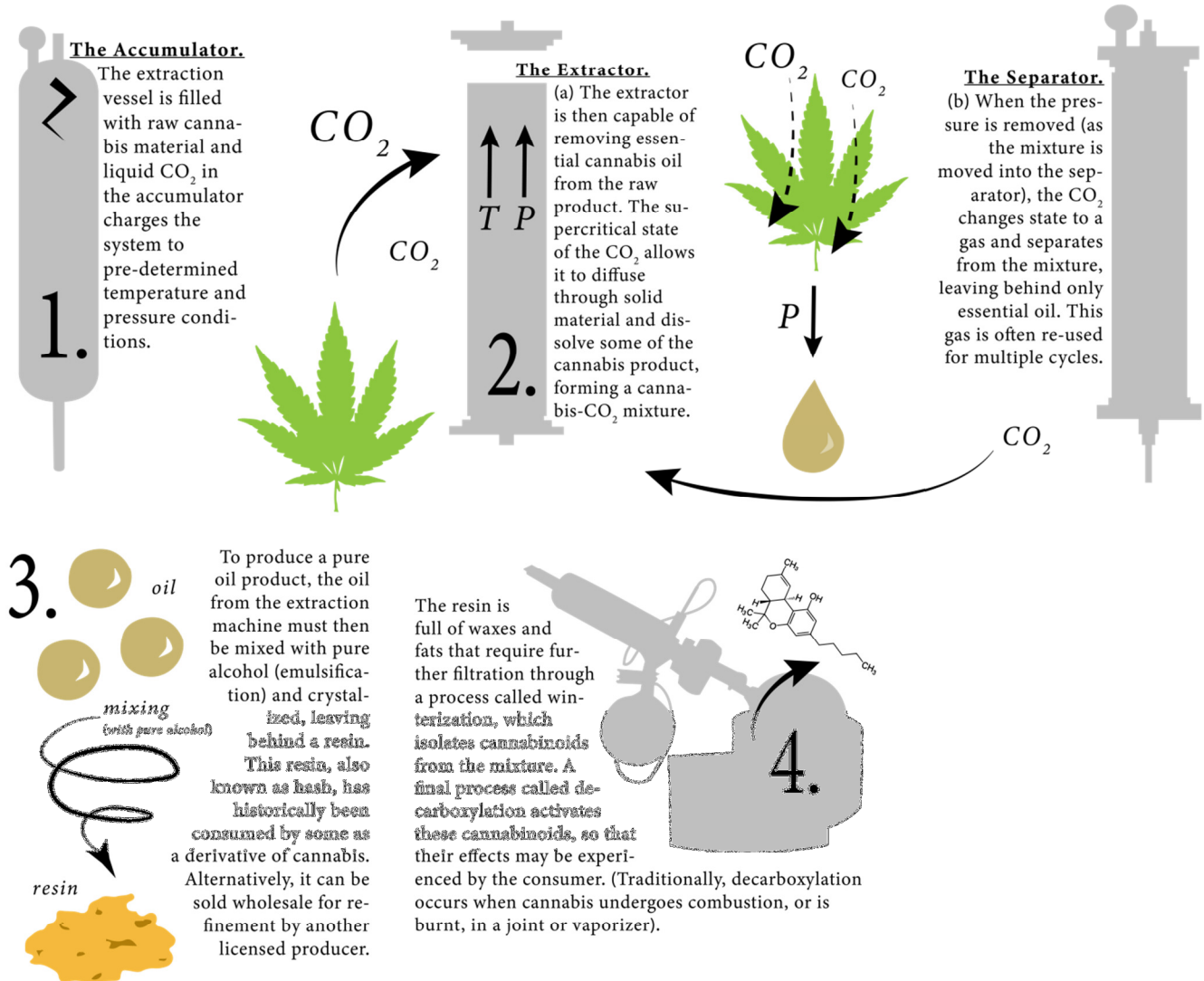
The introduction of cannabis oils is positive for the industry because it will be another factor in increasing the acceptance of medical cannabis as a legitimate treatment option for chronic pain and other medical conditions. Cannabis oils are easy to consume and they provide patients and physicians’ better confidence and comfort with precision dosing. Additionally, many baby boomers are looking for a safe and unobtrusive way to manage their chronic pain symptoms while maintaining an active lifestyle and find oil more appealing than dried cannabis.

All of these factors are resulting in robust demand for products derived from cannabis oils, and we forecast this trend will continue for the foreseeable future. According to data from Health Canada, sales of cannabis oils in the most recent quarter (March 31, 2018) were 10,326 kg, up 11% quarter-over-quarter and up 82% year-over-year. Furthermore, with the new development of controlled-dose capsules made from extracted oil, it is believed that demand for concentrates and derivative products will overtake flower sales by 2020.

There are several methods for extraction commonly used in this industry. Supercritical or subcritical CO<sub>2</sub> extraction is widely recognized by professionals in the industry as the best method for achieving the highest quality oils. Because this method functions without a solvent, there are no residuals of solvent in the final product, and minimal losses of the original material are observed. In this way, a greater quantity and quality of terpenes, flavours and aromas are preserved in the resulting oil. Another advantage of this method is that the results of extraction can be precisely adjusted to accommodate the needs of the manufacturer, achieved by way of subtle changes to temperature and pressure. Remaining CO<sub>2</sub> can be captured and reused at the end of the process.



Figure 4: How the Extraction Process Works



Source: MRCC

Compared to other extraction methods, the capital costs of CO<sub>2</sub> extraction are relatively low, but annual operating costs are on the higher end of the spectrum. Deloitte estimates annual operating expenditures for the process to be \$435,450, compared to \$438,860 for standard solvent extraction. According to Deloitte, CO<sub>2</sub> extraction should cost approximately \$2,525 per 100 kg of plant material, versus approximately \$2,626 per 100 kg for solvent extraction (see figure below).

Figure 5: Comparison of Oil Extraction Methods

	Ethanol Solvent Extraction	Super/Sub-critical CO <sub>2</sub> Extraction
CAPEX	\$600,000	\$365,500
OPEX	\$438,860	\$435,450
Price of ethanol/CO <sub>2</sub>	\$8.22/L	\$4.87/L
Price of filter	\$60	\$60
Charcoal filter	\$100	\$100
Labour (2 technicians @ \$75,000/year)	\$150,000	\$150,000
Litres of ethanol/CO <sub>2</sub>	3 litres per 1 kg of plant material	3 litres per 100 kg of plant material
<b>Cost/100 kg plant material</b>	<b>\$2,626</b>	<b>\$2,525</b>

Source: Deloitte Access Economics, Australia, September 2016



## Derivative Products

In October 2017, the federal government's Standing Committee on Health (HESA) voted for an amendment that, if approved by the House, will ensure derivative cannabis products (e.g. edibles and concentrates) will be available no later than 12 months after recreational legalization comes into force. If the Canadian market follows some of the trends seen in the U.S. states where recreational cannabis is legal, products derived from cannabis oils should become a large and growing segment of the market. Data from Colorado and Oregon show that while dried flower is still the dominant method of consumption, sales of derivatives have been gaining market share over the past few years. According to BDS Analytics, when adult-use sales began in Colorado, on January 1, 2014, flower immediately dominated. By the end of that year's first quarter, flower commanded 67% of all cannabis sales in the state. However, four years later in 2018 sales of flower during the first quarter sunk to 44%. During this same period the share of concentrates in the cannabis market expanded from 15% to 31%. Oregon's market data trends are quite similar to Colorado with sales of flower declining to 44% in Q1/18 from 54% in Q1/17. Concentrates now make up 27% (vs 21% in Q1/17) of Oregon's sales edibles make up 16% (vs. 11% in Q1/17).

## Health Canada Regulations

In order to displace the illegal market, control the quality of products, and reduce the risk of accidental consumption as well as the appeal to youth, Health Canada has proposed a set of regulations surrounding the packaging of cannabis. They are summarized as follows:

- Required health warnings such as cautions against use during pregnancy and while driving;
- Required list of product information, including potency;
- Restricted branding, including uniform colour, standard text, and limit to one branding element;
- Packaging must be child resistant, opaque or translucent, and tamper-evident.

In addition, patients using medical cannabis will be able to obtain it from one of three methods: (1) By purchasing from a federally licenced seller; (2) By cultivating their own (if over the age of 18); or (3) By designating someone to grow cannabis on their behalf. All cannabis sales would be tracked by a Cannabis Tracking System to help prevent diversion out of the legal market, and exporting cannabis across the U.S. border would be strictly prohibited without a permit from the Minister of Health.

## Risk Factors

Regulatory and operational risks must be taken into account before investing in cannabis companies.

We forecast strong growth in both the medical and recreational markets, which will present tremendous growth opportunities for all industry participants. However, an investment in cannabis will be fraught with regulatory and operational risks. Changes in the regulatory environment – such as taxes, pricing and licensing – could have a significant impact on industry participants.

Canada is party to three international drug conventions: the Single Convention on Narcotic Drugs of 1961, the Convention on Psychotropic Substances of 1971, and the Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988. Through these conventions, Canada and dozens of other countries have committed to banning a long list of narcotics, including cannabis. To withdraw from the 1961 and 1971 treaties before its July 2018 legalization date, Canada had to give notice to the Secretary General of the United Nations before July 1, 2017, and withdrawal would take effect the following January. Canada missed this deadline to withdraw, so if Canada still wants to comply with its international obligations, it must now wait until January 2019 before it legalizes recreational cannabis – which limits the federal government's options to legalize recreational cannabis without breaking international law.

On June 20<sup>th</sup>, 2018, the Government of Canada saw the final vote on Bill C-45 pass in the Senate. Now in Royal Assent, the Cannabis Act will come into force officially on October 17<sup>th</sup>, 2018. According to heavily censored government documents (obtained by *Global News* under the *Access-to-Information Act*), the fact that Canada missed the July 1 deadline may indicate that Ottawa is aiming to stay within the international treaties, and just live with the inconsistency. In 2013, Uruguay legalized recreational cannabis without leaving the conventions. While the United Nation's International Narcotics Control Board disapproved, nothing much else happened. However, according to Steven Hoffman, a professor at York University in Toronto who specializes in global health law, "Uruguay is violating international law, Uruguay is violating the UN drug control treaties, but the impact that has in undermining international law is not nearly as great as what would happen if Canada does the same." Canada could suffer from scrutiny from other countries around the globe by putting this new bill into force. Many supporters argue, however, that legalization of the drug could see an overall boost to the global economy and reduction in related organized crime.

Unfortunately, Canada is already experiencing an increase in political tension with its neighbour, the United States. Given that the consumption of cannabis in the U.S. remains federally illegal, and political views are widely split, crossing the border and working with American companies has become a delicate operation. At least ten notable businessmen in the Canadian cannabis industry have been denied entry into the United States over the past few months, most of whom were also banned for life. The risk exists that repercussions could develop from business engagements with American companies, even if they operate in a state where the substance is legal. It is important to note, however, that political themes change rapidly, and with the most recent poll suggesting that over 80% of Americans approve of medical cannabis, the potential demand is hard to ignore.

To satisfy market demand, licensed producers have been aggressively building out capacity. To date, almost 500 applications have been made for licences to cultivate medical cannabis. However, though we estimate funded expansion will bring annual production capacity to over 1,200,000 kg, growing cannabis at this magnitude is unprecedented. We believe licensed producers will face operational challenges as they scale up their facilities.

## COMPANY OVERVIEW

Valens is a vertically-integrated producer of cannabis products with a focus on proprietary extraction processes. Through its three wholly-owned subsidiaries - Valens Agritech (VAL), Valens Farms (FARMS), and Supra THC Services the company is involved in: customized cannabis extraction, third party product development, cultivation, research and development and testing.

**Valens Agritech:** Valens Agritech focuses on its proprietary cannabis extraction services and white-label consumer products for domestic and international markets. Operating out of a 25,000ft<sup>2</sup> in the Okanagan Valley, VAL is commencing cannabis processing and sales under a Health Canada Dealer's License, and is a late-stage LP applicant with GMP certification pending. The Dealer's License allows VAL to possess, produce, process, package, import, export and sell cannabis as well as its derivatives and related active ingredients.

The company has installed a number of CO<sub>2</sub> (including two Vitalis Q-90 Co<sub>2</sub> extraction machines) and ethanol extraction systems that have been customized to ensure that the end product does not lose valuable compounds otherwise lost in the refining process. These systems are currently capable of processing more than 72,000 kg of cannabis per year. Valens' also operates a cultivation and research center that is focused on developing unique medical strain genetics, customized derivative products, and research collaborations with a range of academic institutions.

Figure 6: Valens Agritech

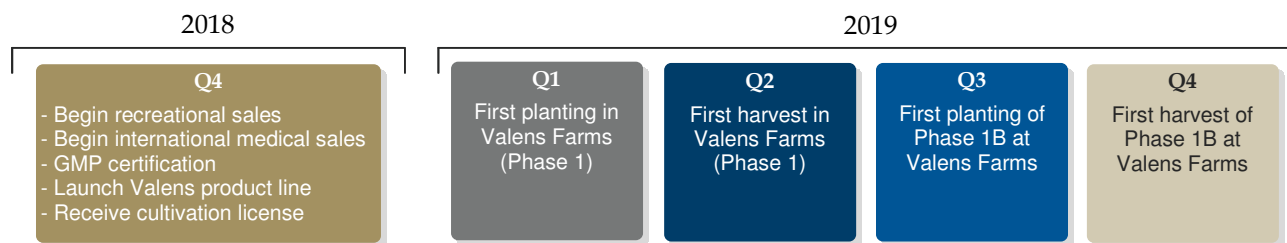


Source: Valens GroWorks Corp.

**Supra THC Services:** Supra THC Services is a Health Canada licensed, ISO 17025 accredited, cannabis testing laboratory providing sector-leading analytical and proprietary services to Licensed Producers, ACMPR patients, and the natural health products industry. Supra THC has built an extensive database of cannabis testing knowledge and it is working with Thermo Fisher Scientific (Mississauga) Inc. to develop a "Centre of Excellence in Plant Based Medicine Analytics". This agreement is the first of its kind between a Canadian cannabis company and a world leader in Health Science services, with an ability to deliver innovative technologies, purchasing convenience and comprehensive services to this emerging market.

**Valens Farms:** On April 11, Valens announced the creation of a new subsidiary company, Valens Farms, to commercially produce premium quality specialty-strain cannabis using dedicated, sustainable monocropping technology, and to further expand its supercritical CO<sub>2</sub>-extracted cannabis oil capacity. The first initiative for Valens Farms is to complete a 400,000 square foot (Phase 1) controlled-environment strain-segregated hybrid greenhouse as part of a large-scale indoor facility on the 50-acre property through its joint venture with Kosha Projects Inc. As per the agreement, Kosha will contribute the land and all facility development and construction costs. Valens is responsible for all design and outfitting inputs, budgetary guidance, consulting and advisory services during construction and development of the facility. Valens Farms will operate the facility, producing premium quality cannabis and supercritical CO<sub>2</sub>-extracted cannabis oils. Phase 1 will be completed in a number of stages: currently undergoing construction is the first 50,000ft<sup>2</sup> (Phase 1A). The estimated cost of Phase 1A is approximately \$15 million and management estimates that the first planting will occur in Q1/19 and that the first harvest will be in Q2/19. Once the Phase 1 is fully constructed (400,000 ft<sup>2</sup>), this facility will be capable of producing more than 50,000 kg/year.

Figure 7: Future Milestones



## CORPORATE STRATEGY: LEVERAGING EXTRACTION EXPERTISE IN CANNABIS OILS & DERIVATIVE PRODUCTS

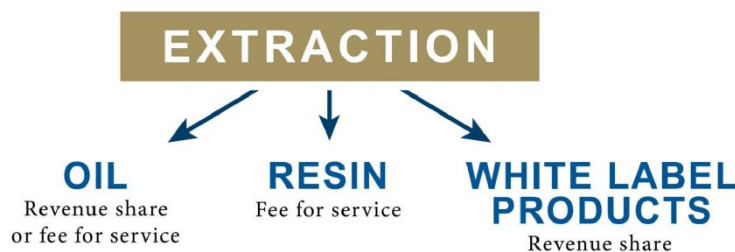
**Cannabis Oils:** The introduction of cannabis oils is positive for the industry and the company, as they will be another factor in increasing the acceptance of medical marijuana as a legitimate treatment option for chronic pain and other medical conditions. According to data from Health Canada, sales of cannabis oils in the most recent quarter (March 31, 2018) were 10,326 kg, up 11% quarter-over-quarter and up 82% year-over-year. Furthermore, with the new development of controlled-dose capsules made from extracted oil, it is believed that demand for concentrates and derivative products will overtake flower sales by 2020.

Valens has been researching this market segment and has been reviewing best practices for the extraction and processing of cannabis oils. There are several methods for extraction commonly used in this industry. Supercritical or subcritical CO<sub>2</sub> extraction is widely recognized by professionals in the industry as the best method for achieving the highest quality oils. Because this method functions without a solvent, there are no residuals of solvent in the final product, and minimal losses of the original material are observed. In this way, a greater quantity and quality of terpenes, flavours and aromas are preserved in the resulting oil. Another advantage of this method is that the results of extraction can be precisely adjusted to accommodate the needs of the manufacturer, achieved by way of subtle changes to temperature and pressure. Remaining CO<sub>2</sub> can be captured and reused at the end of the process.

**Cannabis Edibles and Derivative Products:** In October 2017, the federal government's Standing Committee on Health (HESA) voted for an amendment that, if approved by the House, will ensure cannabis edibles and concentrates will be available no later than 12 months after recreational legalization comes into force. Given the growing popularity of edible and derivative products amongst users where it is legal in the United States, many industry leaders are predicting this will be a very lucrative market for Canada. The government has promised the inclusion of cannabis derivatives in Health Canada legislation by end 2019. According to the Deloitte Study, smoking marijuana is still the preferred method of consumption among users in Canada; however, edibles are becoming increasingly popular and they now account for between 6%-13% of total consumption. If the Canadian market follows some of the trends seen in the U.S. where recreational marijuana is legal, products derived from cannabis oils should become a large and growing segment of the market.

**Valens' business strategy is focused on producing and selling high-margin products and services from carefully extracted cannabis oil.** The company's revenue streams are primarily derived from three key extraction services: (1) oil, (2) resin, and (3) white label products. We forecast that the majority of the company's revenue over the near-term will be derived through cannabis extraction tolling agreements with existing ACMPR licensed producers. Through these tolling agreements, the company will process raw cannabis into cannabis resin and finished oils. Management is developing relationships with a number of existing LPs, whereby they will process raw cannabis into cannabis resin and finished oils. The company is also looking to develop white label products where it will provide clients with a finished oil or derivative product. The raw material inputs will either be sourced internally or through the wholesale market. The company is capable of processing approximately 10,000 kg of raw cannabis per month.

Figure 8: Valens GroWorks – Potential Revenue Streams





Valens is also looking to develop its own line of cannabis oils and derivative products. Products the company is capable of producing include edibles, drinks, oral sprays, oils, tinctures, vaporizer pens, capsules, topical balms, and transdermal patches, among others. Given the growing popularity of edible and derivative products amongst users where it is legal in the United States, many industry leaders are predicting this will be a very lucrative market for Canada. Edible and concentrate products represent a significant opportunity for Valens once Canada finalizes the surrounding legislation. According to the *2016 Marijuana Business Factbook*, profit margins for infused products and concentrates are typically around 32% - significantly higher than the average for alcohol (19%), soft drinks (11%) and cigarettes (13%). In addition, companies who sell infused products are better positioned to create brand loyalty amongst customers who become accustomed to certain tastes, potencies and effects.

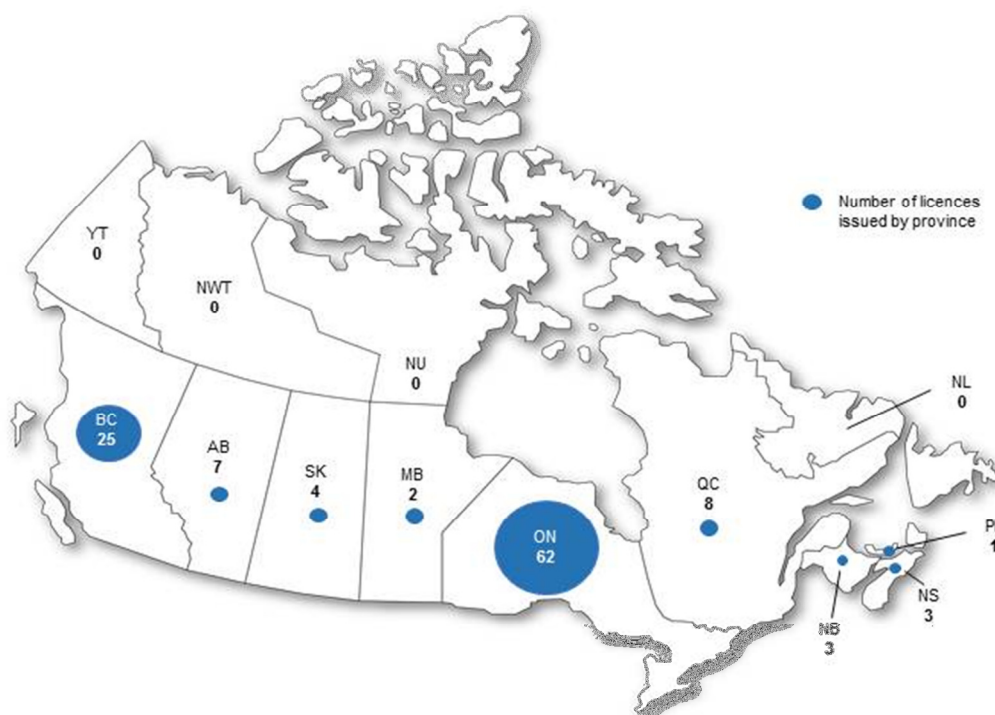
While edible cannabis products are predicted to become a lucrative niche in the legal cannabis market, there are a number of regulatory, engineering and business challenges they pose to cannabis companies. Edible cannabis formulations must be developed very carefully, as their consistency and quality depend on a number of factors that will become very important in a regulatory environment. Traditionally, edible products were made by steeping non-polar THC or CBD into a base such as butter or oil, which could then easily be baked into desserts such as brownies or cookies. Unfortunately, this method leaves behind a grassy flavour and colour from the plants' residual aldehydes and chlorophyll components. In addition, if the cannabis is not cleaned properly before steeping, the resulting butter or oil may retain unwanted toxins, leaving behind an unappealing black colour and low-quality product. Baking using this method often requires the use of strong flavours to mask the inherent cannabis smell and taste. Another consideration when using this method is that the mixing of fats can affect the accuracy of dosing achieved throughout the final product - it is very difficult to blend butter into a cookie with the same consistency every time.

Many companies are now turning to solvent extract or cannabis crystals as the blend for edibles, which can be distributed more consistently throughout a food mixture. The most popular method for solvent extraction in Canada is the use of supercritical or subcritical CO<sub>2</sub>. The equipment used for this process is standardized in the industry; however the specific inputs (ie. temperature and pressure) are not. This turns the whole process into somewhat of an art. Valens has carefully chosen extraction parameters to produce the highest quality oils and resins. The company's proprietary process for extraction is what sets it apart from competitors with similar extraction equipment. In addition, Valens has been able to improve its efficiencies so that the least possible amount of material is wasted during processing. A higher efficiency in this process allows for greater revenue return per gram of raw cannabis extracted.

Another consideration when manufacturing cannabis edibles and derivative products are that they must also meet certain food safety standards. Quality control will play a vital role in gaining trust both with government operations and consumers, and has the potential to provide an important distinction for the consumer between unregulated black market products and regulated legal products. Quality assurance individuals need to implement strict testing to ensure no contaminants such as pesticides, soil-borne microbes or heavy metals do not remain present in the final product. To comply with political regulations once they come into effect in 2019, edibles manufacturers will need to provide a consistent, food safe, residue-free product, in addition to meeting any other requirements outlined by Health Canada. In order to be ready for the launch of this market, businesses in the industry should already have an edibles strategy underway. Valens may hold a very important role in providing third-party extraction & testing for those companies who have not undertaken the preparations necessary - or who are not willing to invest in the required equipment and personnel - to be competitive in the upcoming edibles market.

In Canada, less than 50% of Licensed Producers hold a production license to manufacture cannabis oils. If the Canadian market follows some of the trends seen in the U.S. where recreational marijuana is legal, products derived from cannabis oils should become a large and growing segment of the market. The demand for oil production is expected to expand rapidly as legalization matures. Valens has the potential to capture this gap in oil production as an opportunity to work with small-scale dried flower producers that do not have the equipment to derive their own oils. An extraction strategy and expertise as developed as Valens' will likely be highly sought after in 2019 and beyond.

Figure 9: Licensed Producer Distribution in Canada



### Licences by Province

	Total	Dried Flower		Oils	
		Cultivation	Sales	Production	Sales
BC	25	24	16	13	7
AB	7	7	3	3	1
SK	4	3	2	2	1
MB	2	2	2	1	0
ON	62	58	33	28	17
QC	8	8	3	2	1
NB	3	3	2	1	1
NS	3	3	0	0	0
PEI	1	1	1	1	0

Source: Health Canada

## RESEARCH & LAB TESTING

Valens' subsidiaries are partnered with two British Columbia-based universities, UBC Okanagan and Thompson Rivers, to explore the network of derivatives that can be made from the cannabis plant. Supra has also partnered with Thermo Fisher Scientific to develop a "Centre of Excellence in Plant Based Medicine Analytics" at their research & development facility in Kelowna.

On June 14th, 2018, Valens GroWorks announced its wholly-owned subsidiary Supra THC Services had obtained ISO 17025 accreditation for cannabis testing. It is the first Dealer's License using cannabis as its matrix in Canada to achieve this accreditation. ISO 17025 accreditation scope includes methods for cannabinoids, pesticides, toxic metals, terpenes and residual solvents. The ISO 17025 standard, *General requirements for the competence of testing and calibration laboratories*, has become the international reference for testing and calibration laboratories wanting to demonstrate their capacity to deliver trusted results. Details of the analyses offered by Supra are as follows:



- **Cannabinoids.** Potency of each cannabinoid is measured using the THC concentration. Levels of Delta 9 THC, Delta 8 THC, THCA, CBD, CBDA, CBG, CBGA, CBC, CBN, CBDV, and THCV are also reported.
- **Terpenes.** Dictated by smells and flavors, terpenes are responsible for differentiation between strains. Supra is capable of providing the full profile of terpenes in a plant.
- **Heavy metals.** Metals from the soil can be absorbed by plants during the growing season, and certain metals can be harmful to humans. Lab technicians at Supra can test for the USP 232 list of toxic metals in cannabis plants in accordance with the USP 233 method.
- **Pesticides.** Supra tests for the USP 561 list of common pesticides, as well as myclobutanil (a fungicide known for releasing toxic fumes and currently banned in Canada) and bifenazate to ensure little to no contamination is present.
- **Aflatoxins.** Aflatoxins are carcinogenic byproducts of fungi, especially mold. Supra can test for Aflatoxins B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub>, and G<sub>2</sub>.
- **Residual solvents.** Organic solvents can remain in cannabis after processing, and are harmful to the consumer. Using the USP 467 Class 2 list of residual solvents, Supra Services ensures the final product is clean.

Supra also offers custom product development, biomarker tracking, and is an expert service provider for Bika LIMS systems.

## INTERNATIONAL EXPANSION

Valens is looking to expand into the international markets, which it believes could provide significant growth opportunities and on August 29th, Valens signed a letter of intent with Colombian licensed producer Eticann S.A.S Zomac. Under the terms of the agreement, the company will purchase cannabis materials from Eticann for use in its proprietary extraction system. In addition, Valens will have exclusive rights to provide extraction services for Eticann's oil product offerings, will provide related expertise to Eticann for toll processing services in Colombia and surrounding markets, and will be granted the option to purchase up to 50% of Eticann's issued and outstanding shares. As Valens' first international supply agreement, this announcement strengthens the company's intention of capitalizing on international markets under the terms of its Dealer's License.

## OTHER DEVELOPMENTS

**On May 17, 2018, Valens entered a supply agreement with SpeakEasy Cannabis Club Ltd.** whereby SpeakEasy shall supply Valens with 50% of the cannabis it produces "for extraction purposes." Additionally, SpeakEasy shall endeavour to source an interim supply of Cannabis for Valens with 2,500 - 5,000 kilograms of suitable material per month. As part of the agreement, Valens will use its Dealers License to facilitate storage, research and development of cannabis products for SpeakEasy. The Dealers License enables the business to export and import cannabis oils and concentrates to international markets, as well as process natural health products, and import or export key genetics. SpeakEasy and Valens have agreed to collaborate in finding a suitable ACMPR Licensed Producer to partner with, so that they may market and distribute product within Canada. On June 4<sup>th</sup>, 2018, SpeakEasy completed the building site for its 80,000 ft<sup>2</sup> small-batch facility, and announced that it is ahead of schedule in the completion of this project, which will be vital to fulfilling the supply agreement with Valens.

**On February 28th, 2018, the company entered a letter of intent to acquire 19.9% interest in R Gold Ventures Inc.** R Gold is a private company with multiple retail stores stocking a full line of consumables and hard goods. Through this strategic investment, Valens will be able to establish an early presence in the recreational cannabis retail market, once legal. The letter indicates that the 19.9% interest will be acquired through a cash payment of \$700,000 plus the issuance of 550,000 Valens shares to R Gold. In addition, the two companies will enter a shared supply agreement and grant the company the right of first refusal with respect to shares of R Gold.

## FINANCIAL FORECAST

Outlined below is our financial forecast for Valens GroWorks through 2020.

Figure 10: Financial Forecast through F2020

YE November 30	2018E	2019E	2020E
Revenue	\$3,455	\$54,456	\$82,352
EBITDA	-\$4,544	\$24,456	\$36,679
EBITDA margin	nm	44.9%	44.5%
Net income	-\$8,938	\$13,751	\$22,362
Net margin	nm	25.3%	27.2%
EPS f.d.	(\$0.13)	\$0.19	\$0.31

Source: Mackie Research Capital

## VALUATION

Canada is developing a world class cannabis industry and companies operating in the sector are just in the early stages of growth. As a result, historical trading patterns are not a good proxy for establishing appropriate valuation multiples. We forecast that the majority of companies operating in the cannabis sector will not experience material revenue or earnings growth until at least 2019 or 2020. As a result, we value companies based on our financial projections through 2020. However, investing in the cannabis sector is not for the faint of heart since companies operating in the sector will most likely experience both regulatory and operational challenges. As a result, we applied discount rate of 15% to account for these risks. Over the last year companies operating in the Canadian cannabis industry have been trading in the 9x to 17x 2020 EV/EBITDA and we believe that this fair for this industry. We view Valens as an emerging player in the cannabis industry and as a result we are applying a 12x EV/EBITDA multiple to value the company.

Figure 11: Cannabis Industry Comparables

Company	Symbol	Share Price	EV	Current EV/EBITDA	
				2019E	2020E
Canopy Growth Corporation	WEED-T	\$68.83	\$15,527	727.3x	73.9x
Aurora Cannabis Inc.	ACB-T	\$8.95	\$8,151	78.6x	26.6x
Tilray Inc.	TLRY-Q	\$77.01	\$7,045	23.0x	16.5x
Aphria Inc.	APH-T	\$18.55	\$3,962	71.6x	18.6x
Cronos Group Inc.	CRON-T	\$14.65	\$2,459	58.7x	32.9x
HEXO Corp.	HEXO-T	\$5.75	\$861	40.4x	8.1x
CannTrust Holding Inc.	TRST-T	\$10.80	\$1,001	17.9x	9.2x
Organigram Holdings Inc.	OGI-V	\$6.60	\$766	21.1x	9.1x
The Supreme Cannabis Company	FIRE-V	\$2.07	\$477	62.3x	10.1x
Emblem Corp.	EMC-V	\$1.54	\$110	83.1x	2.9x
<b>Valens GroWorks Corp.</b>	<b>VGW-CSE</b>	<b>\$1.39</b>	<b>\$96</b>	<b>3.9x</b>	<b>2.6x</b>
<b>Average EV/EBITDA Multiples (Adj. for YE)</b>				<b>39.9x</b>	<b>17.1x</b>

Source: Bloomberg LP and Thomson One

## INITIATING WITH A BUY RECOMMENDATION AND A \$4.50 TARGET PRICE

We are initiating coverage of Valens GroWorks Corp. with a **BUY** rating and **target price of \$4.50 per share**. To arrive at our target price, we applied a 12x EV/EBITDA multiple to our 2020 estimate and then discounted the result using a 15% discount rate.

## APPENDIX 1 – FINANCIAL FORECAST

Figure 12: Valens GroWorks Corp. - Income Statement (\$000s)

November 30	2018E	%	2019E	%	2020E	%
<b>Sales</b>	<b>3,455</b>	<b>100</b>	<b>54,456</b>	<b>100</b>	<b>82,352</b>	<b>100</b>
Cost of goods sold and SG&A	7,999	232	30,000	55	45,673	55
<b>EBITDA</b>	<b>(4544)</b>	<b>(132)</b>	<b>24,456</b>	<b>45</b>	<b>36,679</b>	<b>45</b>
Amortization	676	20	1,104	2	1,533	2
<b>EBIT</b>	<b>(5,220)</b>	<b>(151)</b>	<b>23,352</b>	<b>43</b>	<b>35,146</b>	<b>43</b>
Interest income	265	8	200	0	300	0
Share based comp.	4,000	116	3,500	6	3,500	4
Other income (expense)	54	2	0	0	0	0
<b>Earnings before taxes</b>	<b>(8,938)</b>	<b>(259)</b>	<b>20,052</b>	<b>37</b>	<b>31,946</b>	<b>39</b>
Current taxes	0	0	5,101	9	7,084	9
Future Taxes	0	0	1,200	2	2,500	3
Taxes	0	0	6,301	12	9,584	12
<b>Net Income</b>	<b>(8,938)</b>		<b>13,751</b>		<b>22,362</b>	
<b>EPS Basic</b>	<b>(\$0.13)</b>		<b>\$0.19</b>		<b>\$0.31</b>	
<b>EPS f.d.</b>	<b>(\$0.13)</b>		<b>\$0.19</b>		<b>\$0.31</b>	
Shares outstanding WA	70,475		73,068		73,116	
Shares outstanding YE	72,432		73,068		73,260	
Shares outstanding FD	70,475		73,068		73,116	

Source: Company reports, Mackie Research Capital

Figure 13: Valens GroWorks Corp. - Balance Sheet (\$000s)

November 30	2018E		2019E		2020E	
<b>Assets</b>						
Cash	308	2	2,654	6	17,721	23
Accounts receivable	812	5	12,253	27	18,529	24
Inventories	345	2	4,084	9	8,235	10
Prepaid expenses	259	2	1,906	4	1,235	2
Biological assets	0	0	500	1	650	1
Other assets	0	0	0	0	0	0
<b>Total Current Assets</b>	<b>1,725</b>	<b>10</b>	<b>21,397</b>	<b>47</b>	<b>46,371</b>	<b>59</b>
Gross prop., plant & equip.	4,592	28	14,592	32	24,592	31
Less: accum. depreciation	812	5	1,916	4	3,449	4
Net property, plant & equip.	3,780	23	12,675	28	21,142	27
Intangible assets	3,900	24	3,900	9	3,900	5
Leasehold construction in process	5,037	30	5,037	11	5,037	6
Other assets	2,091	13	2,091	5	2,091	3
<b>Total Assets</b>	<b>16,533</b>	<b>100</b>	<b>45,101</b>	<b>100</b>	<b>78,541</b>	<b>100</b>
<b>Liabilities</b>						
Accounts payable	639	4	9,802	22	14,823	19
Promissory notes & other	0	0	0	0	0	0
<b>Total Current Liabilities</b>	<b>639</b>	<b>4</b>	<b>9,802</b>	<b>22</b>	<b>14,823</b>	<b>19</b>
LTD	0	0	0	0	0	0
Deferred tax liability	0	0	1,200	3	3,700	5
Other	0	0	0	0	0	0
<b>Total Liabilities</b>	<b>639</b>	<b>4</b>	<b>11,002</b>	<b>24</b>	<b>18,523</b>	<b>24</b>
<b>Shareholders Equity</b>						
Common stock & paid-in cap.	31,297	189	32,251	72	32,309	41
Reserves	7,144	43	10,644	24	14,144	18
Retained earnings	(22,547)	(136)	(8,796)	(20)	13,566	17
<b>Total Shareholder's Equity</b>	<b>15,893</b>	<b>96</b>	<b>34,098</b>	<b>76</b>	<b>60,018</b>	<b>76</b>
<b>Total Liabilities and Shareholder's Equity</b>	<b>16,533</b>	<b>100</b>	<b>45,101</b>	<b>100</b>	<b>78,541</b>	<b>100</b>

Source: Company reports, Mackie Research Capital

**Figure 14: Valens GroWorks Corp. - Cash Flow Statement (\$000s)**

November 30	2018E	2019E	2020E
<b>Operating Activities</b>			
Net income	(8,938)	13,751	22,362
Depreciation	676	1,104	1,533
Deferred income tax expense	0	1,200	2,500
Share based compensation	4,000	3,500	3,500
Other	359	0	0
<b>Cash Flow from ops. before NCWC</b>	<b>(3,903)</b>	<b>19,555</b>	<b>29,895</b>
Net change in working capital	(1,307)	(8,163)	(4,886)
<b>Cash Flow from operations</b>	<b>(5,210)</b>	<b>11,392</b>	<b>25,010</b>
<b>Investing Activities</b>			
Purchase of capital assets	(4,000)	(10,000)	(10,000)
Increase in other assets	(3,000)	0	0
Proceeds from disposal of capital assets	0	0	0
<b>Total</b>	<b>(7,000)</b>	<b>(10,000)</b>	<b>(10,000)</b>
<b>Financing Activities</b>			
Inc. (dec.) in LTD	0	0	0
Issue of common shares	13,364	954	58
Other	0	0	0
<b>Total</b>	<b>12,503</b>	<b>954</b>	<b>58</b>
Inc. (dec.) in cash position	293	2,346	15,067
Cash position, beg. of year	15	308	2,654
<b>Cash position, end of year (bank indebt.)</b>	<b>308</b>	<b>2,654</b>	<b>17,721</b>

Source: Company reports, Mackie Research Capital

## RISKS

Please refer to the 'Risks' section of this report (pg.9).

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