



#55 181029-02

10/29/18

Montana Certificate of Analysis

Vitality Natural Health LLC

Stillwater Laboratories Inc. MMJ Laboratory License L-00001

total cannabinoids		THC <sub>x</sub>	CBD <sub>x</sub>
	total	0.0%	97.8%
<b>98.6%</b>	decarb total	0.0%	97.8%

isolate



## Potency

	%	estimated error
tetrahydrocannabinolic acid (THCa)	0.00%	± 0.02 %
Δ <sup>9</sup> -tetrahydrocannabinol (Δ <sup>9</sup> THC)	0.00%	± 0.02 %
Δ <sup>8</sup> -tetrahydrocannabinol (Δ <sup>8</sup> THC)	0.00%	± 0.02 %
tetrahydrocannabivarin (THCv)	0.00%	± 0.02 %
cannabidiolic acid (CBDA)	0.00%	± 0.02 %
cannabidiol (CBD)	95.30%	± 1.03 %
cannabidivarin (CBDv)	2.55%	± 0.17 %
cannabigerolic acid (CBGA)	0.00%	± 0.02 %
cannabigerol (CBG)	0.06%	± 0.03 %
cannabinol (CBN)	0.72%	± 0.09 %
cannabichromene (CBC)	0.00%	± 0.02 %

## Sample

	order number	3282
type isolate	request date	10/30/2018
lab ID 8KR60	sample date	10/30/2018
batch weight	test date	10/30/2018
sample weight	report due	11/3/2018

## Solvents

	MT limit	8KR60		MT limit	8KR60
propane	5,000	PASS	benzene	2	PASS
butanes	5,000	PASS	toluene	890	PASS
pentanes	5,000	PASS	xylenes	2,170	PASS
hexanes	290	PASS	chloroform	2	PASS
cyclohexane	3,880	PASS	dichloromethane	600	PASS
heptanes	5,000	PASS			
methanol	3,000	PASS			
isopropanol	5,000	PASS			
acetone	5,000	PASS			
ethyl acetate	5,000	PASS			

all solvent values in PPM

◇ All testing was completed onsite at 6073 US93N, Olney MT according to the methods and standards listed. Methods may be obtained on request from the Director, Stillwater Laboratories.

◇ All attempts have been made to ensure accuracy and integrity of the results. However, Stillwater Laboratories cannot guarantee results or endorse quality of products beyond the test articles submitted.

◇ Potency (cannabinoid concentration) is calculated from the equation: [cannabinoid] = [cannabinoid]<sub>HPLC</sub> x volume<sub>dilution</sub> / m. Terpene concentration is calculated from the equation: [terpene] = (terpene mass)<sub>GCMS</sub> / m. Solvent concentration is calculated from the equation: [solvent] = (solvent mass)<sub>GCMS</sub> / m.

◇ Standards are run in the same batch as the reported values. These standards are used to recalibrate the resulting data and estimate error using a standard estimate of error method; this is combined with error from weighing and dilution using the propagation of error formula  $s_y^2 = \sum (\partial f / \partial i)^2 s_i^2$  where i is the contributor to error. The 95% confidence range is calculated from the equation: (concentration) ± t<sub>CL90</sub> x s<sub>y</sub>.

◇ Sampling error is not considered in error calculations.

Certified by:

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## Methods

	method	equipment	reference material
sampling	AD8KM		
FMI	IN8KM	YSC HD801m12	
weights	MA8KM	AUX120.2	MA8KRS
potency	8E4.lcm	LC-2030C	PO8KRS
solvents	SO8KM	QP2020/HS-20	SO8KRS

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