

CERTIFICATE OF ANALYSIS



Juniper Analytics, LLC
 1334 NE 2nd Street, Bend, OR, 97701
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 ORELAP: 4101-001 / OLCC: 10035537931

Client Name:	Extract
Contact Info:	
Sample Type:	
Sample ID:	MX-360-001-02
METRC ID:	Hemp
Juniper Batch #:	17JA5491.13
Intake Date:	9/26/2017

**R/D ONLY
NOT FOR COMPLIANCE**



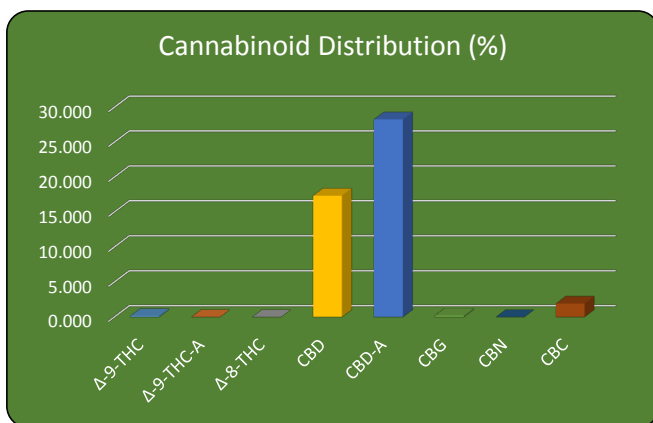
Potency Analysis (Oregon Compliance Standard OAR 333-007-0430)

ANALYSIS DATE: 9/29/2017

Instrument: HPLC/DAD

Method: JA-Potency-Proprietary

Compound	Weight (%)	Concentration (mg/g)	LOQ * (mg/g)
Δ-9-THC	0.155	1.55	0.08
Δ-9-THC-A	< LOQ	< LOQ	0.07
Δ-8-THC	< LOQ	< LOQ	0.06
CBD	17.360	173.60	0.09
CBD-A	28.287	282.87	0.31
CBG	0.226	2.26	0.07
CBN	< LOQ	< LOQ	0.16
CBC	1.940	19.40	0.14



TOTAL THC/CBD	Weight (%)	Conc (mg/g)
THC Total =	0.155	1.55

THC_{Total} = (THC-A * 0.877) + Δ9THC + Δ8THC

CBD Total =	42.168	421.68
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CBD_{Total} = (CBD-A * 0.877) + CBD

*LOQ = Limit of Quantification

Residual Solvent Analysis (Oregon Compliance Standard OAR 333-007-0410)

ANALYSIS DATE:

Not Tested

Instrument: GC/MS

Method: USP 467 - Modified

Solvent	Result (ppm)	Action Level / LOQ (ppm)
1,4-Dioxane		380 / 100
2-Butanol		5000 / 500
2-Ethoxyethanol		160 / 100
2-Propanol (IPA)		5000 / 500
Acetone		5000 / 500
Acetonitrile		410 / 100
Benzene		2 / 1
Cumene		70 / 50
Cyclohexane		3880 / 500
Dichloromethane		600 / 100
Ethyl acetate		5000 / 500
Ethyl ether		5000 / 500
Ethylene glycol		620 / 100
Ethylene oxide		50 / 10
Heptane		5000 / 500
Isopropyl acetate		5000 / 500
Methanol		3000 / 500
Propane		5000 / 500
Tetrahydrofuran		720 / 100
Toluene		890 / 100

Solvent	Result (ppm)	Action Level / LOQ (ppm)
Pentanes;		5000 / 500
-n-pentane		**
-iso-pentane		**
-neo-pentane		**
Butanes;		5000 / 500
-n-butane		**
-iso-butane		**
Hexanes;		290 / 50
-n-hexane		**
-2-methylpentane		**
-3-methylpentane		**
-2,2-dimethylbutane		**
-2,3-dimethylbutane		**
Xylenes;		5000 / 500
-1,2-dimethylbenzene		**
-1,3-dimethylbenzene		**
-1,4-dimethylbenzene		**
-Ethyl benzene		**

**Limit based on combined results

Residual Solvents	N/A
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Tentatively Identified Compounds: List compounds or "None Detected"

*N.D. - Compound Not Detected

*< LOQ - Less than the Limit of Quantification (Compound detected, but less than limit of quantification or reporting limit)

APPROVAL

Report Date: 10/2/2017

QA Review



Juniper Batch #: 17JA5491.13
Intake Date: 9/26/2017

Pesticide Analysis (Oregon Compliance Standard OAR 333-008-1190)

ANALYSIS DATE: Not Tested			Instrument: LC/MS/MS			Method: AOAC 2007.1-Mod		
Pesticide	Result (ppm)	Action Level / LOQ (ppm)	Pesticide	Result (ppm)	Action Level / LOQ (ppm)			
Abamectin		0.5 / 0.25	Imazalil		0.2 / 0.10			
Acephate		0.4 / 0.20	Imidacloprid		0.4 / 0.20			
Acequinocyl		2.0 / 1.00	Kresoxim-methyl		0.4 / 0.20			
Acetamiprid		0.2 / 0.10	Malathion		0.2 / 0.10			
Aldicarb		0.4 / 0.20	Metalaxyl		0.2 / 0.10			
Azoxystrobin		0.2 / 0.10	Methiocarb		0.2 / 0.10			
Bifenazate		0.2 / 0.10	Methomyl		0.4 / 0.20			
Bifenthrin		0.2 / 0.10	Methyl Parathion		0.2 / 0.10			
Boscalid		0.4 / 0.2	MGK-264		0.2 / 0.10			
Carbaryl		0.2 / 0.10	Myclobutanil		0.2 / 0.10			
Carbofuran		0.2 / 0.10	Naled		0.5 / 0.25			
Chlorantraniliprole		0.2 / 0.10	Oxamyl		1.0 / 0.50			
Chlorfenapyr		1.0 / 0.50	Paclobutrazol		0.4 / 0.20			
Chlorpyrifos		0.2 / 0.10	Permethrins		0.2 / 0.10			
Clofentezine		0.2 / 0.10	Phosmet		0.2 / 0.10			
Cyfluthrin		1.0 / 0.50	Piperonyl butoxide		2.0 / 1.00			
Cypermethrin		1.0 / 0.50	Prallethrin		0.2 / 0.10			
Daminozide		1.0 / 0.50	Propiconazole		0.4 / 0.20			
DDVP (Dichlorvos)		1.0 / 0.50	Propoxur		0.2 / 0.10			
Diazinon		0.2 / 0.10	Pyrethrins		1.0 / 0.50			
Dimethoate		0.2 / 0.10	Pyridaben		0.2 / 0.10			
Ethoprophos		0.2 / 0.10	Spinosad		0.2 / 0.10			
Etofenprox		0.4 / 0.20	Spiromesifen		0.2 / 0.10			
Etoxazole		0.2 / 0.10	Spirotetramat		0.2 / 0.10			
Fenoxycarb		0.2 / 0.10	Spiroxamine		0.4 / 0.20			
Fenpyroximate		0.4 / 0.20	Tebuconazole		0.4 / 0.20			
Fipronil		0.4 / 0.20	Thiacloprid		0.2 / 0.10			
Flonicamid		1.0 / 0.50	Thiamethoxam		0.2 / 0.10			
Fludioxonil		0.4 / 0.20	Trifloxystrobin		0.2 / 0.10			
Hexythiazox		1.0 / 0.50						
Pesticide Screen	N/A							

*LOQ = Limit of Quantification



Juniper Batch #: 17JA5491.13
Intake Date: 9/26/2017

Microbiological Contaminants (Oregon Compliance Standard OAR 333-007-0390)

ANALYSIS DATE: Not Tested

Microbiological screening	Colony count	CFU/g	Results:
Total coliforms	Not tested	Not tested	N/A
Esherichia coli (E-coli)	Not tested	Not tested	N/A

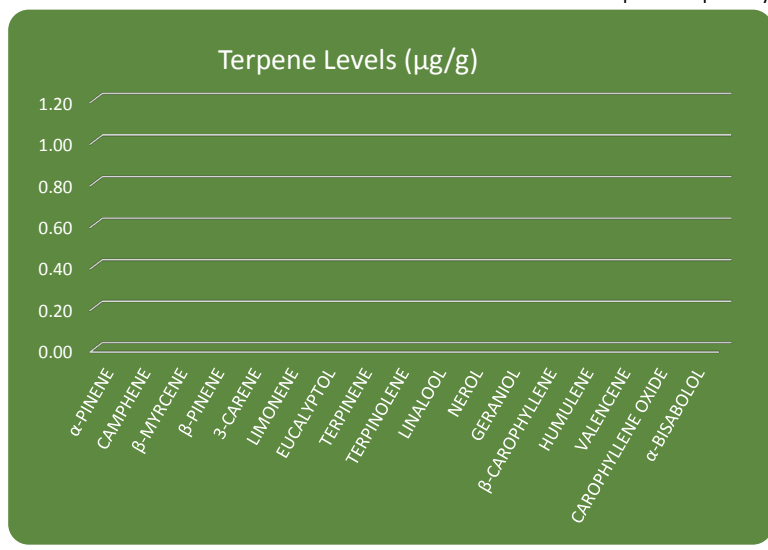
Terpene Profile

ANALYSIS DATE: Not Tested

Instrument: GC/MS

Method: JA-Terpene-Proprietary

Compound	µg/g	%
α-PINENE		
CAMPHENE		
β-MYRCENE		
β-PINENE		
3-CARENE		
LIMONENE		
EUCALYPTOL		
TERPINENE		
TERPINOLENE		
LINALOOL		
NEROL		
GERANIOL		
β-CAROPHYLLENE		
HUMULENE		
VALENCENE		
CAROPHYLLENE OXIDE		
α-BISABOLOL		
TOTAL		



Batch QC WorkGroup ID:
Potency PO-9-27-17-1
Residual Solvents
Pesticide

Disclaimer

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Quality Control Results- Pesticides

Work Group ID: pest-09-28-17-1

Analysis Date: 9/29/2017



AOAC 2007.1 & EN 15662

Units: ppm (mg/Kg)

Analyte	Method Blank			Laboratory Control Sample				
	Method Blank Result	Method Blank Limits	Qualifiers	LCS Spike	LCS Result	LCS % Recovery	Limits	Qualifiers
Abamectin	*	0.050		0.150	0.123	82.3%	70 - 130%	
Acephate	*	0.040		0.120	0.155	129.2%	70 - 130%	
Acequinocyl	*	0.200		0.600	0.593	98.9%	70 - 130%	
Acetamiprid	*	0.020		0.060	0.056	94.1%	70 - 130%	
Aldicarb	*	0.040		0.120	0.120	99.8%	70 - 130%	
Azoxystrobin	*	0.020		0.060	0.061	101.5%	70 - 130%	
Bifenazate	*	0.020		0.060	0.050	83.4%	70 - 130%	
Bifenthrin	*	0.020		0.060	0.056	93.9%	70 - 130%	
Boscalid	*	0.040		0.120	0.105	87.6%	70 - 130%	
Carbaryl	*	0.020		0.060	0.057	95.1%	70 - 130%	
Carbofuran	*	0.020		0.060	0.058	97.1%	70 - 130%	
Chlorantranilprole	*	0.020		0.060	0.055	91.1%	70 - 130%	
Chlorfenapyr	*	0.100		0.300	0.297	98.8%	70 - 130%	
Chlorpyrifos	*	0.020		0.060	0.056	93.9%	70 - 130%	
Clofentezine	*	0.020		0.060	0.057	95.3%	70 - 130%	
Cyfluthrin	*	0.100		0.300	0.243	81.0%	70 - 130%	
Cypermethrin	*	0.100		0.300	0.307	102.4%	70 - 130%	
Daminozide	*	0.100		0.300	0.287	95.8%	70 - 130%	
Diazinon	*	0.020		0.060	0.063	104.3%	70 - 130%	
Dichlorvos	*	0.100		0.300	0.322	107.5%	70 - 130%	
Dimethoate	*	0.020		0.060	0.061	101.7%	70 - 130%	
Ethoprophos	*	0.020		0.060	0.056	93.4%	70 - 130%	
Etofenprox	*	0.040		0.120	0.121	101.1%	70 - 130%	
Etoazole	*	0.020		0.060	0.058	97.0%	70 - 130%	
Fenoxycarb	*	0.020		0.060	0.056	92.8%	70 - 130%	
Fenpyroximate	*	0.040		0.120	0.120	99.6%	70 - 130%	
Fipronil	*	0.040		0.120	0.110	91.7%	70 - 130%	
Flonicamid	*	0.100		0.300	0.292	97.3%	70 - 130%	
Fludioxonil	*	0.040		0.120	0.111	92.4%	70 - 130%	
Hexythiazox	*	0.100		0.300	0.289	96.3%	70 - 130%	
Imazalil	*	0.020		0.060	0.060	99.5%	70 - 130%	
Imidacloprid	*	0.040		0.120	0.116	97.0%	70 - 130%	
Kresoxim-methyl	*	0.040		0.120	0.116	96.7%	70 - 130%	
Malathion	*	0.020		0.060	0.052	87.4%	70 - 130%	
Metaxyl	*	0.020		0.060	0.058	96.2%	70 - 130%	
Methiocarb	*	0.020		0.060	0.059	97.8%	70 - 130%	
Methomyl	*	0.040		0.120	0.116	96.8%	70 - 130%	
Methyl-parathion	*	0.020		0.060	0.053	87.5%	70 - 130%	
MGK-264	*	0.020		0.060	0.057	95.1%	70 - 130%	
Myclobutanil	*	0.020		0.060	0.053	87.8%	70 - 130%	
Naled	*	0.050		0.150	0.134	89.4%	70 - 130%	
Oxamyl	*	0.200		0.600	0.573	95.5%	70 - 130%	
Paclbutrazol	*	0.040		0.120	0.104	86.6%	70 - 130%	
Permethrins	*	0.020		0.060	0.053	88.1%	70 - 130%	
Phosmet	*	0.020		0.060	0.057	94.8%	70 - 130%	
Piperonyl butoxide	*	0.100		0.300	0.305	101.5%	70 - 130%	
Prallethrin	*	0.020		0.060	0.053	88.1%	70 - 130%	
Propiconazole	*	0.040		0.120	0.116	96.6%	70 - 130%	
Propraxur	*	0.020		0.060	0.063	104.9%	70 - 130%	
Pyrethrins	*	0.100		0.300	0.264	88.0%	70 - 130%	
Pyridaben	*	0.020		0.060	0.055	91.4%	70 - 130%	
Spinosad	*	0.020		0.060	0.055	91.4%	70 - 130%	
Spiromesifin	*	0.020		0.060	0.058	96.0%	70 - 130%	
Spirotetramat	*	0.020		0.060	0.056	93.0%	70 - 130%	
Spiroxamine	*	0.040		0.120	0.119	98.8%	70 - 130%	
Tebuconazole	*	0.040		0.120	0.105	87.6%	70 - 130%	
Thiacloprid	*	0.020		0.060	0.055	91.2%	70 - 130%	
Thiamethoxam	*	0.020		0.060	0.056	93.6%	70 - 130%	
Trifloxystrobin	*	0.020		0.060	0.059	99.1%	70 - 130%	

Quality Control Results- Pesticides

Work Group ID: pest-09-28-17-1

Analysis Date: 9/29/2017



AOAC 2007.1 & EN 15662

Units: ppm (mg/Kg)

Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) Recoveries

Analyte	Matrix Spike (MS) Result	Matrix Spike Duplicate Result	Matrix Spike	RPD %	MS % Rec	MSD % Rec	Limits	Qualifiers
Abamectin	0.217	0.219	0.150	0.8%	144.8%	145.9%	50 - 150%	
Acephate	0.234	0.231	0.120	1.1%	194.9%	192.8%	50 - 150%	A5, A10
Acequinocyl	0.623	0.647	0.600	3.8%	103.9%	107.9%	50 - 150%	
Acetamiprid	0.052	0.051	0.060	2.0%	87.3%	85.6%	50 - 150%	
Aldicarb	0.146	0.143	0.120	2.4%	122.0%	119.1%	50 - 150%	
Azoxystrobin	0.051	0.051	0.060	0.8%	84.8%	84.2%	50 - 150%	
Bifenazate	0.056	0.057	0.060	0.6%	93.7%	94.2%	50 - 150%	
Bifenthrin	0.024	0.026	0.060	7.8%	39.4%	42.6%	50 - 150%	A5, A10
Boscalid	0.056	0.055	0.120	2.1%	47.0%	46.0%	50 - 150%	A5, A10
Carbaryl	0.057	0.057	0.060	0.3%	95.0%	94.6%	50 - 150%	
Carbofuran	0.057	0.057	0.060	0.2%	94.2%	94.4%	50 - 150%	
Chlorantranilprole	0.061	0.060	0.060	0.7%	101.5%	100.8%	50 - 150%	
Chlorfenapyr	0.249	0.259	0.300	4.1%	82.9%	86.3%	50 - 150%	
Chlorpyrifos	0.027	0.028	0.060	4.7%	44.9%	47.1%	50 - 150%	A5, A10
Clofentezine	0.040	0.042	0.060	3.5%	67.5%	69.9%	50 - 150%	
Cyfluthrin	0.222	0.207	0.300	7.0%	74.0%	69.0%	50 - 150%	
Cypermethrin	0.141	0.179	0.300	24.0%	47.0%	59.8%	50 - 150%	A10
Daminozide	0.242	0.241	0.300	0.6%	80.7%	80.2%	50 - 150%	
Diazinon	0.063	0.065	0.060	2.3%	105.3%	107.7%	50 - 150%	
Dichlorvos	0.326	0.325	0.300	0.2%	108.6%	108.4%	50 - 150%	
Dimethoate	0.078	0.081	0.060	4.0%	129.4%	134.7%	50 - 150%	
Ethoprophos	0.057	0.057	0.060	0.1%	95.6%	95.7%	50 - 150%	
Etofenprox	0.109	0.112	0.120	2.2%	91.2%	93.2%	50 - 150%	
Etoazole	0.050	0.049	0.060	2.0%	82.5%	80.9%	50 - 150%	
Fenoxycarb	0.068	0.072	0.060	5.0%	113.8%	119.6%	50 - 150%	
Fenpyroximate	0.031	0.032	0.120	3.6%	25.8%	26.7%	50 - 150%	A5, A10
Fipronil	0.059	0.060	0.120	1.9%	49.3%	50.3%	50 - 150%	A10
Flonicamid	0.214	0.213	0.300	0.6%	71.3%	70.9%	50 - 150%	
Fludioxonil	0.127	0.125	0.120	1.7%	106.2%	104.4%	50 - 150%	
Hexythiazox	0.142	0.165	0.300	15.1%	47.2%	54.9%	50 - 150%	A10
Imazalil	0.055	0.063	0.060	13.1%	92.0%	104.9%	50 - 150%	
Imidacloprid	0.189	0.183	0.120	3.4%	157.5%	152.3%	50 - 150%	A5, A10
Kresoxim-methyl	0.078	0.086	0.120	9.4%	65.0%	71.4%	50 - 150%	
Malathion	0.054	0.053	0.060	1.9%	90.0%	88.3%	50 - 150%	
Metaxyl	0.069	0.069	0.060	0.0%	114.4%	114.4%	50 - 150%	
Methiocarb	0.058	0.057	0.060	1.7%	97.0%	95.3%	50 - 150%	
Methomyl	0.144	0.140	0.120	2.9%	120.0%	116.6%	50 - 150%	
Methyl-parathion	0.033	0.035	0.060	6.5%	54.3%	57.9%	50 - 150%	
MGK-264	0.043	0.044	0.060	2.3%	72.3%	74.0%	50 - 150%	
Myclobutanil	0.076	0.075	0.060	1.4%	126.5%	124.7%	50 - 150%	
Naled	0.128	0.123	0.150	4.4%	85.6%	81.8%	50 - 150%	
Oxamyl	0.745	0.733	0.600	1.6%	124.1%	122.1%	50 - 150%	
Paclbutrazol	0.149	0.146	0.120	2.0%	124.2%	121.8%	50 - 150%	
Permethrins	0.022	0.025	0.060	11.0%	37.1%	41.4%	50 - 150%	A5, A10
Phosmet	0.018	0.019	0.060	6.2%	29.6%	31.5%	50 - 150%	A5, A10
Piperonyl butoxide	0.366	0.377	0.300	3.1%	121.8%	125.6%	50 - 150%	
Prallethrin	0.055	0.058	0.060	6.4%	91.2%	97.3%	50 - 150%	
Propiconazole	0.133	0.134	0.120	0.4%	110.9%	111.3%	50 - 150%	
Propoxur	0.058	0.061	0.060	5.1%	96.1%	101.2%	50 - 150%	
Pyrethrins	0.283	0.287	0.300	1.6%	94.2%	95.8%	50 - 150%	
Pyridaben	0.058	0.060	0.060	3.6%	96.0%	99.5%	50 - 150%	
Spinosad	0.079	0.071	0.060	11.4%	132.0%	117.8%	50 - 150%	
Spiromesifin	0.063	0.066	0.060	4.4%	105.1%	109.8%	50 - 150%	
Spirotetramat	0.098	0.101	0.060	2.4%	163.9%	167.9%	50 - 150%	A5, A10
Spiroxamine	0.146	0.144	0.120	1.4%	121.6%	119.9%	50 - 150%	
Tebuconazole	0.145	0.144	0.120	0.4%	120.8%	120.3%	50 - 150%	
Thiacloprid	0.058	0.057	0.060	2.5%	97.4%	94.9%	50 - 150%	
Thiamethoxam	0.058	0.056	0.060	2.5%	96.5%	94.1%	50 - 150%	
Trifloxystrobin	0.047	0.049	0.060	5.0%	78.4%	82.5%	50 - 150%	

Qualifiers	
A1	Duplicate Relative Percent Difference outside limits
A2	Duplicate result < 5 times LOQ, Duplicate result not applicable
A3	Duplicate RPD non-calculable, analyte outside analytical range
A4	Matrix Spike (MS) recovery outside acceptable limits. Only non-detected or less than LOQ results reported.
A5	Matrix interference affecting spike or surrogate recoveries
A6	Method Blank - Analyte detected, Only non-detected or less than LOQ results reported.
A7	Method Blank - Analyte detected, only sample results greater than 5 x's blank value reported.
A8	LCS recovery high, only non-detected results reported
A9	LCS result high, samples less than action limit reported, considered as passing (biased high).
A10	Quality control outside QC limits. Data acceptable based on remaining QC.
A11	QC outside control limits, results considered estimated
A12	QC failure. Only non detected result reported
A13	Compound not quantified, Screened for Action Limit Only

Disclaimer	
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Quality Control Results - Potency



Work Group ID:	PO-9-27-17-1
Analysis Date:	9/29/2017

Potency	Method Blank (mg/g)	LCS (% Recovery)	Sample Duplicate (RPD %)	Qualifiers/Notes
CBD	0	94.97%	6.05%	
CBG	0	N/A	0.42%	
CBD-A	0	87.00%	<LOQ	
CBN	0	N/A	<LOQ	
D9-THC	0	89.69%	12.40%	
D8-THC	0	N/A	16.20%	
CBC	0	N/A	<LOQ	
THC-A	0	85.36%	11.10%	

Sample Dilution		100	
Method Blank Limits	LOQ (mg/g)	LCS (% Rec)	Duplicate Limits (RPD %)
CBD	0.400	70-130%	25%
CBG	0.388	N/A	25%
CBD-A	1.075	70-130%	25%
CBN	0.404	N/A	25%
D9-THC	0.100	70-130%	25%
D8-THC	0.156	N/A	25%
CBC	0.293	N/A	25%
THC-A	0.526	70-130%	25%

Qualifiers	
A1	Relative Percent Difference outside limits
A2	Non homogenous sample matrix affecting RPD results
A3	Result < 5 times LOQ, Duplicate result not applicable.
A4	RPD non-calculable, analyte outside analytical range
A5	Sample concentration is greater than 5 times Method Blank
A6	Analyte detected in Method Blank, absent in sample
A7	LCS result high, only non-detected results reported
A8	LCS outside acceptable limits, results considered acceptable based on remaining QC

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