

# 1055293-2019-H37FC091819

Scientia LLC  
 ODA #: AG-R1055293IHH  
 314-401-2501

Sample Type: Hemp Concentrate  
 Sample Date: 10/24/2019  
 Analysis Date: 10/24/2019  
 Report Date: 11/5/2019

Metric Batch ID:  
 Metric Sample ID:

Harvest/Process Date: 9/18/2019  
 Report ID:  
**LS-191101-65**

## Potency

Potency Analysis Date: 10/24/2019  
 Potency Batch ID: CAN\_102519D, CAN\_102419D, CAN\_102819A, CAN\_102819B  
 Potency Method: JAOAC 2015.1

**60.4%** Total CBD  
**3.83%** Total THC



Samples: HHG-PFH-GXM, RBN-CZJ-HRC, PCF-BBR-MTB, RPC-BPB-ZMJ, PMR-MJS-CSJ, FDJ-JPM-HFX, MHB-MXZ-CNW, PJT-WXT-XGC, GNJ-JXT-ZGR, FBT-SJS-WGC, FCX-XNZ-PCD, XJF-JCB-WBT, DXN-GFF-TPC, CZW-GSP-MGX, HSM-NNS-FDF, RHF-TZW-JXF, XDG-XBC-DCN, TNZ-RRX-JRG, PDD-MDR-WBH, HDG-FWF-ZPP, GXB-XRM-JCG, PHF-ZGF-TXC, PSF-NDH-TMR, DBW-CXG-WRH, CHJ-WCR-MDD, BPZ-XNS-HHD, GST-JXS-CWN, DBJ-TFZ-DNN, SCG-XHC-TCS, DSC-DBX-JTD, XPC-JCD-WTJ, DBP-NPZ-GBF

Analyte	Description	LOQ	RSD	Min.	Max.	Avg.	Unit: %
<b>Δ9THC</b>	Delta-9 Tetrahydrocannabinol	0.080	4.92	3.17	4.04	3.83	
<b>THCA</b>	Tetrahydrocannabinolic acid	0.080	0.00	ND	<LOQ	<LOQ	
<b>CBD</b>	Cannabidiol	0.080	4.67	50.2	62.4	60.1	
<b>CBDA</b>	Cannabidiolic acid	0.080	50.9	0.174	0.556	0.309	
<b>Δ8THC</b>	Delta-8 Tetrahydrocannabinol*	0.080	31.4	0.101	0.419	0.241	
<b>THCV</b>	Tetrahydrocannabivarin*	0.080	0.00	ND	ND	ND	
<b>CBG</b>	Cannabigerol*	0.080	3.83	1.35	1.63	1.60	
<b>CBGA</b>	Cannabigerolic acid*	0.080	5.25	0.130	0.175	0.163	
<b>CBC</b>	Cannabichromene*	0.080	64.9	ND	2.10	1.41	
<b>CBCA</b>	Cannabichromenic acid*	0.080	0.00	ND	ND	ND	
<b>CBN</b>	Cannabinol	0.080	6.63	0.118	0.158	0.143	
<b>Total THC</b>	Δ9THC + (THCA × 0.877)		4.92	3.17	4.04	3.83	
<b>Total CBD</b>	CBD + (CBDA × 0.877)		4.66	50.4	62.8	60.4	
<b>Total</b>			4.53	55.3	71.4	67.8	

## Compliance

Pesticides	Within limits	Analysis Date: 10/29/2019	Pass
Solvents	Within limits	Analysis Date: 10/25/2019	Pass
Potency	Within limits	Analysis Date: 10/24/2019	Pass

Bryce Kidd, Ph.D.  
 Lab Director

Aaron Troyer  
 Chief Science Officer



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## Pesticides Sample Data

Pesticides Analysis Date: 10/29/2019  
 Pesticides Batch ID: PST\_103019B,  
 PST\_103119A, PST\_103019A, PST\_102919B

Method: EN 15662  
 Unit: µg/g (ppm) Pass 

Analyte	Min.	Max.	Avg.	Limits	LOQ	Notes	Status	Analyte	Min.	Max.	Avg.	Limits	LOQ	Notes	Status
Abamectin	ND	ND	ND	0.5	0.1		Pass	Metalaxyl	ND	ND	ND	0.2	0.1		Pass
Acephate	ND	ND	ND	0.4	0.1		Pass	Methiocarb	ND	ND	ND	0.2	0.1		Pass
Acequinocyl	ND	ND	ND	2.0	1.5		Pass	Methomyl	ND	ND	ND	0.4	0.1		Pass
Acetamiprid	ND	ND	ND	0.2	0.1		Pass	Methyl Parathion	ND	ND	ND	0.2	0.2		Pass
Aldicarb	ND	ND	ND	0.4	0.1		Pass	MGK-264	ND	ND	ND	0.2	0.2		Pass
Azoxystrobin	ND	ND	ND	0.2	0.1		Pass	Myclobutanil	ND	ND	ND	0.2	0.1		Pass
Bifenazate	ND	ND	ND	0.2	0.1		Pass	Naled	ND	ND	ND	0.5	0.2		Pass
Bifenthrin	ND	ND	ND	0.2	0.1		Pass	Oxamyl	ND	ND	ND	1.0	0.1		Pass
Boscalid	ND	ND	ND	0.4	0.1		Pass	Paclobutrazol	ND	ND	ND	0.4	0.1		Pass
Carbaryl	ND	ND	ND	0.2	0.1		Pass	Permethrins	ND	ND	ND	0.2	0.1		Pass
Carbofuran	ND	ND	ND	0.2	0.1		Pass	Phosmet	ND	ND	ND	0.2	0.1		Pass
Chlorantraniliprole	ND	ND	ND	0.2	0.1		Pass	Piperonyl Butoxide	ND	ND	ND	2.0	0.1		Pass
Chlorfenapyr	ND	ND	ND	1.0	0.1		Pass	Prallethrin	ND	ND	ND	0.2	0.1		Pass
Chlorpyrifos	ND	ND	ND	0.2	0.1		Pass	Propiconazole	ND	ND	ND	0.4	0.1		Pass
Clofentezine	ND	ND	ND	0.2	0.1		Pass	Propoxur	ND	ND	ND	0.2	0.1		Pass
Cyfluthrin	ND	ND	ND	1.0	0.5		Pass	Pyrethrins	ND	ND	ND	1.0	0.5		Pass
Cypermethrin	ND	ND	ND	1.0	0.1		Pass	Pyridaben	ND	ND	ND	0.2	0.1		Pass
Daminozide	ND	ND	ND	1.0	0.5		Pass	Spinosad	ND	ND	ND	0.2	0.1		Pass
Diazinon	ND	ND	ND	0.2	0.1		Pass	Spiromesifen	ND	ND	ND	0.2	0.1		Pass
Dichlorvos (DDVP)	ND	ND	ND	1.0	0.5		Pass	Spirotetramat	ND	ND	ND	0.2	0.1		Pass
Dimethoate	ND	ND	ND	0.2	0.1		Pass	Spiroxamine	ND	ND	ND	0.4	0.1		Pass
Ethoprophos	ND	ND	ND	0.2	0.1		Pass	Tebuconazole	0.190	0.381	0.326	0.4	0.1		Pass
Etofenprox	ND	ND	ND	0.4	0.1		Pass	Thiacloprid	ND	ND	ND	0.2	0.1		Pass
Etoxazole	ND	ND	ND	0.2	0.1		Pass	Thiamethoxam	ND	ND	ND	0.2	0.1		Pass
Fenoxycarb	ND	ND	ND	0.2	0.1		Pass	Trifloxystrobin	ND	ND	ND	0.2	0.1		Pass
Fenpyroximate	ND	ND	ND	0.4	0.1		Pass								
Fipronil	ND	ND	ND	0.4	0.1		Pass								
Flonicamid	ND	ND	ND	1.0	0.1		Pass								
Fludioxonil	ND	ND	ND	0.4	0.1		Pass								
Hexythiazox	ND	ND	ND	1.0	0.1		Pass								
Imazalil	ND	ND	ND	0.2	0.1		Pass								
Imidacloprid	ND	ND	ND	0.4	0.1		Pass								
Kresoxim-methyl	ND	ND	ND	0.4	0.1		Pass								
Malathion	ND	ND	ND	0.2	0.1		Pass								

Samples: HHG-PFH-GXM, RBN-CZJ-HRC, PCF-BBR-MTB, RPC-BPB-ZMJ, PMR-MJS-CSJ, FDJ-JPM-HFX, MHB-MXZ-CNW, PJT-WXT-XGC, GNJ-JXT-ZGR, FBT-SJS-WGC, FCX-XNZ-PCD, XJF-JCB-WBT, DXN-GFF-TPC, CZW-GSP-MGX, HSM-NNS-FDF, RHF-TZW-JXF, XDG-XBC-DCN, TNZ-RRX-JRG, PDD-MDR-WBH, HDG-FWF-ZPP, GXB-XRM-JCG, PHF-ZGF-TXC, PSF-NDH-TMR, DBW-CXG-WRH, CHJ-WCR-MDD, BPZ-XNS-HHD, GST-JXS-CWN, DBJ-TFZ-DNN, SCG-XHC-TCS, DSC-DBX-JTD, XPC-JCD-WTJ, DBP-NPZ-GBF

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## Pesticides Quality Control Data

Pesticides QC Analysis Date: 10/29/2019  
 Pesticides QC Batch ID: PST\_103019B,  
 PST\_103119A, PST\_103019A, PST\_102919B  
 Method: EN 15662  
 Unit: µg/g (ppm)

Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes	Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes
Abamectin	ND	0.1	1.07	1.00	107	50 - 150		Metalaxyl	ND	0.1	1.01	1.00	101	50 - 150	
Acephate	ND	0.1	0.513	1.00	51.3	50 - 150		Methiocarb	ND	0.1	1.22	1.00	122	50 - 150	
Acequinocyl	ND	1.5	ND	1.00	<b>0.00</b>	50 - 150	ND	Methomyl	ND	0.1	0.653	1.00	65.3	50 - 150	
Acetamiprid	ND	0.1	0.974	1.00	97.4	50 - 150		Methyl Parathion	ND	0.2	0.268	1.00	<b>26.8</b>	30 - 150	ME
Aldicarb	ND	0.1	0.872	1.00	87.2	50 - 150		MGK-264	ND	0.2	0.468	0.600	78.0	50 - 150	
Azoxystrobin	ND	0.1	0.916	1.00	91.6	50 - 150		Myclobutanil	ND	0.1	0.954	1.00	95.4	50 - 150	
Bifenazate	ND	0.1	0.771	1.00	77.1	50 - 150		Naled	ND	0.2	0.699	1.00	69.9	50 - 150	
Bifenthrin	ND	0.1	1.19	1.00	119	50 - 150		Oxamyl	ND	0.1	0.714	1.00	71.4	50 - 150	
Boscalid	ND	0.1	0.822	1.00	82.2	50 - 150		Paclobutrazol	ND	0.1	0.881	1.00	88.1	50 - 150	
Carbaryl	ND	0.1	0.938	1.00	93.8	50 - 150		Permethrins	ND	0.1	1.12	1.00	112	50 - 150	
Carbofuran	ND	0.1	0.942	1.00	94.2	50 - 150		Phosmet	ND	0.1	1.04	1.00	104	50 - 150	
Chlorantraniliprole	ND	0.1	1.49	1.00	149	50 - 150		Piperonyl Butoxide	ND	0.1	0.881	1.00	88.1	50 - 150	
Chlorfenapyr	ND	0.1	0.651	1.00	65.1	50 - 150		Prallethrin	ND	0.1	0.985	1.00	98.5	50 - 150	
Chlorpyrifos	ND	0.1	0.910	1.00	91.0	50 - 150		Propiconazole	ND	0.1	1.12	1.00	112	50 - 150	
Clofentezine	ND	0.1	1.27	1.00	127	50 - 150		Propoxur	ND	0.1	0.962	1.00	96.2	50 - 150	
Cyfluthrin	ND	0.5	0.995	1.00	99.5	50 - 150		Pyrethrins	ND	0.5	2.05	1.00	<b>205</b>	50 - 150	HB
Cypermethrin	ND	0.1	0.867	1.00	86.7	50 - 150		Pyridaben	ND	0.1	1.10	1.00	110	50 - 150	
Daminozide	ND	0.5	ND	1.00	<b>0.00</b>	10 - 150	ND	Spinosad	ND	0.1	1.23	1.00	123	50 - 150	
Diazinon	ND	0.1	0.765	1.00	76.5	50 - 150		Spiromesifen	ND	0.1	1.48	1.00	148	50 - 150	
Dichlorvos (DDVP)	ND	0.5	0.707	1.00	70.7	50 - 150		Spirotetramat	ND	0.1	0.911	1.00	91.1	50 - 150	
Dimethoate	ND	0.1	0.890	1.00	89.0	50 - 150		Spiroxamine	ND	0.1	0.694	1.00	69.4	50 - 150	
Ethoprophos	ND	0.1	0.908	1.00	90.8	50 - 150		Tebuconazole	ND	0.1	1.07	1.00	107	50 - 150	
Etofenprox	ND	0.1	1.29	1.00	129	50 - 150		Thiacloprid	ND	0.1	1.23	1.00	123	50 - 150	
Etoxazole	ND	0.1	1.12	1.00	112	50 - 150		Thiamethoxam	ND	0.1	1.01	1.00	101	50 - 150	
Fenoxycarb	ND	0.1	1.27	1.00	127	50 - 150		Trifloxystrobin	ND	0.1	0.883	1.00	88.3	50 - 150	
Fenpyroximate	ND	0.1	1.12	1.00	112	50 - 150									
Fipronil	ND	0.1	0.956	1.00	95.6	50 - 150									
Flonicamid	ND	0.1	0.828	1.00	82.8	50 - 150									
Fludioxonil	ND	0.1	0.550	1.00	55.0	50 - 150									
Hexythiazox	ND	0.1	0.765	1.00	76.5	50 - 150									
Imazalil	ND	0.1	0.801	1.00	80.1	50 - 150									
Imidacloprid	ND	0.1	0.961	1.00	96.1	50 - 150									
Kresoxim-methyl	ND	0.1	0.970	1.00	97.0	50 - 150									
Malathion	ND	0.1	1.08	1.00	108	50 - 150									

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## Residual Solvents Sample Data

Solvents Analysis Date: 10/25/2019 Method: EPA 5021A Pass  
 Solvents Batch ID: RES\_102819B, RES\_102519B, Unit: µg/g (ppm)  
 RES\_102519A

Analyte	Min.	Max.	Avg.	RSD (%)	Limits	LOQ	Notes	Status
1,4-Dioxane	ND	ND	ND	0.00	300.0	50.0		Pass
2-Butanol	ND	ND	ND	0.00	5000.0	250.0		Pass
2-Ethoxyethanol	ND	ND	ND	0.00	160.0	50.0		Pass
Acetone	ND	<LOQ	<LOQ	0.00	5000.0	250.0		Pass
Acetonitrile	ND	<LOQ	<LOQ	0.00	410.0	50.0		Pass
Benzene	ND	ND	ND	0.00	2.0	2.0		Pass
Butanes	ND	ND	ND	0.00	5000.0	250.0		Pass
Cumene	ND	ND	ND	0.00	70.0	50.0		Pass
Cyclohexane	ND	ND	ND	0.00	3880.0	50.0		Pass
Ethyl Acetate	ND	ND	ND	0.00	5000.0	250.0		Pass
Ethyl Ether	ND	ND	ND	0.00	5000.0	250.0		Pass
Ethylene Glycol	ND	ND	ND	0.00	620.0	250.0		Pass
Ethylene Oxide	ND	ND	ND	0.00	50.0	50.0		Pass
Heptane	ND	ND	ND	0.00	5000.0	250.0		Pass
Hexanes	ND	ND	ND	0.00	290.0	50.0		Pass
Isopropanol (2-Propanol)	130	148	139	3.14	5000.0	50.0		Pass
Isopropyl Acetate	ND	ND	ND	0.00	5000.0	250.0		Pass
Methanol	ND	<LOQ	<LOQ	0.00	3000.0	250.0		Pass
Dichloromethane	ND	ND	ND	0.00	600.0	50.0		Pass
Pentanes	ND	ND	ND	0.00	5000.0	250.0		Pass
Propane	ND	ND	ND	0.00	5000.0	250.0		Pass
Tetrahydrofuran	ND	ND	ND	0.00	720.0	50.0		Pass
Toluene	ND	ND	ND	0.00	890.0	50.0		Pass
Xylenes	ND	ND	ND	0.00	2170.0	50.0		Pass

Samples: HHG-PFH-GXM, RBN-CZJ-HRC, PCF-BBR-MTB, RPC-BPB-ZMJ, PMR-MJS-CSJ, FDJ-JPM-HFX, MHB-MXZ-CNW, PJT-WXT-XGC, GNJ-JXT-ZGR, FBT-SJS-WGC, FCX-XNZ-PCD, XJF-JCB-WBT, DXN-GFF-TPC, CZW-GSP-MGX, HSM-NNS-FDF, RHF-TZW-JXF, XDG-XBC-DCN, TNZ-RRX-JRG, PDD-MDR-WBH, HDG-FWF-ZPP, GXB-XRM-JCG, PHF-ZGF-TXC, PSF-NDH-TMR, DBW-CXG-WRH, CHJ-WCR-MDD, BPZ-XNS-HHD, GST-JXS-CWN, DBJ-TFZ-DNN, SCG-XHC-TCS, DSC-DBX-JTD, XPC-JCD-WTJ, DBP-NPZ-GBF

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## Residual Solvents Quality Control Data

Solvents QC Analysis Date: 10/25/2019  
 Solvents QC Batch ID: RES\_102819B,  
 RES\_102519B, RES\_102519A

Method: EPA 5021A  
 Unit: µg/g (ppm)

Analyte	Blank	LOQ	LCS	LCS Spike	LCS Rec (%)	Limits (%)	Notes
1,4-Dioxane	ND	50.0	1100	1000	110	70 - 130	
2-Butanol	ND	250.0	1120	1000	112	70 - 130	
2-Ethoxyethanol	ND	50.0	1060	1000	106	70 - 130	
Acetone	ND	250.0	1020	1000	102	70 - 130	
Acetonitrile	ND	50.0	1180	1000	118	70 - 130	
Benzene	ND	2.0	17.7	20.0	88.4	70 - 130	
Butanes	ND	250.0	2390	2000	120	70 - 130	
Cumene	ND	50.0	1170	1000	117	70 - 130	
Cyclohexane	ND	50.0	1000	1000	100	70 - 130	
Ethyl Acetate	ND	250.0	1090	1000	109	70 - 130	
Ethyl Ether	ND	250.0	977	1000	97.7	70 - 130	
Ethylene Glycol	ND	250.0	968	1000	96.8	70 - 130	
Ethylene Oxide	ND	50.0	1080	1000	108	70 - 130	
Heptane	ND	250.0	1120	1000	112	70 - 130	
Hexanes	ND	50.0	5460	5000	109	70 - 130	
Isopropanol (2-Propanol)	ND	50.0	1100	1000	110	70 - 130	
Isopropyl Acetate	ND	250.0	1140	1000	114	70 - 130	
Methanol	ND	250.0	940	1000	94.0	70 - 130	
Dichloromethane	ND	50.0	1030	1000	103	70 - 130	
Pentanes	ND	250.0	3360	3000	112	70 - 130	
Propane	ND	250.0	1010	1000	101	70 - 130	
Tetrahydrofuran	ND	50.0	1160	1000	116	70 - 130	
Toluene	ND	50.0	1140	1000	114	70 - 130	
Xylenes	ND	50.0	5090	4000	127	70 - 130	



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## Qualifier Flag Descriptions

- J** Reported result is an estimate - the value is less than the minimum calibration level but greater than the estimated detection limit (EDL)
- U** The analyte was not detected in the sample at the estimated detection limit (EDL)
- E** Exceeds calibration range
- D** Dilution data - result was obtained from the analysis of a dilution
- B** Analyte found in sample and associated blank
- C** Co-eluting compound
- R** Relative Percent Difference (RPD) outside control limits
- NR** Analyte not reported because of problems in sample preparation or analysis
- ND** Non-Detect
- X** Results from reinjection/repeat/re-column data
- EMC** Estimated maximum possible concentration - indicates that a peak is detected but did not meet the method required criteria
- M** Manual integration
- PS** Peaks split
- HB** Control acceptance criteria are exceeded high and the associated sample is below the detection limit
- LB** Control acceptance criteria are exceeded low and the associated sample exceeds the regulatory limit
- ME** Marginal Exceedance
- LR** Low Recovery Analyte
- LOQ** Limit of Quantitation