

Prepared for:

Surly Brewing Co

4811 Dusharme Dr

Brooklyn Center, MN USA 55429

Surly Take5Lime:: MT006

Batch ID or Lot Number: MT006	Test, Test ID and Methods: Various	Matrix: Finished Product	Page 1 of 6
Reported: 29Nov2023	Started: 28Nov2023	Received: 27Nov2023	

Mycotoxins


Test ID: T000262991

Methods: TM18 (UHPLC-QQQ)

LCMS/MS: Mycotoxins

	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	2.10 - 122.70	ND	N/A
Aflatoxin B1	0.86 - 29.72	ND	
Aflatoxin B2	0.86 - 29.99	ND	
Aflatoxin G1	0.92 - 30.16	ND	
Aflatoxin G2	1.01 - 30.31	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Final Approval


 Sam Smith
 29Nov2023
 02:03:00 PM MST
 PREPARED BY / DATE


 Karen Winternheimer
 29Nov2023
 02:08:00 PM MST
 APPROVED BY / DATE

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Cannabinoids


Test ID: T000262986

Methods: TM14 (HPLC-DAD)

	LOD (mg)	LOQ (mg)	Result (mg)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.127	0.490	ND	ND	# of Servings = 1, Sample Weight=355g
Cannabichromenic Acid (CBCA)	0.116	0.448	ND	ND	
Cannabidiol (CBD)	0.583	1.347	ND	ND	
Cannabidiolic Acid (CBDA)	0.598	1.382	ND	ND	
Cannabidivarin (CBDV)	0.138	0.319	ND	ND	
Cannabidivarinic Acid (CBDVA)	0.249	0.576	ND	ND	
Cannabigerol (CBG)	0.072	0.278	<LOQ	<LOQ	
Cannabigerolic Acid (CBGA)	0.302	1.162	ND	ND	
Cannabinol (CBN)	0.094	0.363	<LOQ	<LOQ	
Cannabinolic Acid (CBNA)	0.206	0.793	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.360	1.384	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.327	1.257	5.830	0.00	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.290	1.114	ND	ND	
Tetrahydrocannabivarin (THCV)	0.066	0.253	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.256	0.983	ND	ND	
Total Cannabinoids			5.830	0.00	
Total Potential THC			5.830	0.00	
Total Potential CBD			ND	ND	

Final Approval


Karen Winternheimer
29Nov2023
01:14:00 PM MST
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Sam Smith
29Nov2023
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Residual Solvents


Test ID: T000262990

Methods: TM04 (GC-MS): Residual

Solvents	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	89 - 1788	ND	
Butanes (Isobutane, n-Butane)	176 - 3511	ND	
Methanol	65 - 1304	ND	
Pentane	96 - 1920	ND	
Ethanol	103 - 2059	992	
Acetone	101 - 2016	ND	
Isopropyl Alcohol	108 - 2168	ND	
Hexane	6 - 124	ND	
Ethyl Acetate	104 - 2089	ND	
Benzene	0.2 - 4.1	ND	
Heptanes	100 - 1996	ND	
Toluene	19 - 376	ND	
Xylenes (m,p,o-Xylenes)	137 - 2746	ND	

Final Approval


Karen Winternheimer
30Nov2023
12:48:00 PM MST
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Sam Smith
30Nov2023
12:50:00 PM MST
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Heavy Metals

Test ID: T000262989

Methods: TM19 (ICP-MS): Heavy

Metals	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.04 - 4.32	ND	
Cadmium	0.04 - 4.28	ND	
Mercury	0.04 - 4.24	ND	
Lead	0.04 - 4.34	ND	

Final Approval


Sam Smith
30Nov2023
07:58:00 AM MST
PREPARED BY / DATE


Karen Winternheimer
30Nov2023
08:00:00 AM MST
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Prepared for:

Surly Brewing Co

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Brooklyn Center, MN USA 55429

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Microbial Contaminants

Test ID: T000262988

Methods: TM25 (PCR) TM24, TM26, TM27 (Culture Plating)

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10 ⁰ CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
<i>Salmonella</i>	TM25: PCR	10 ⁰ CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10 ¹ CFU/g	1.0x10 ² - 1.5x10 ⁴	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10 ² CFU/g	1.0x10 ³ - 1.5x10 ⁵	None Detected	
Total Coliforms*	TM27: Culture Plating	10 ¹ CFU/g	1.0x10 ² - 1.5x10 ⁴	None Detected	

Final Approval



Eden Thompson-Wright
30Nov2023
03:40:00 PM MST

PREPARED BY / DATE



Brett Hudson
30Nov2023
04:56:00 PM MST

APPROVED BY / DATE

Prepared for:

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Pesticides


Test ID: T000262987


Methods: TM17

(LC-QQ LC MS/MS)

	Dynamic Range (ppb)	Result (ppb)		Dynamic Range (ppb)	Result (ppb)
Abamectin	385 - 3277	ND	Malathion	280 - 2762	ND
Acephate	43 - 2767	ND	Metalaxyl	46 - 2743	ND
Acetamiprid	42 - 2720	ND	Methiocarb	47 - 2707	ND
Azoxystrobin	44 - 2764	ND	Methomyl	44 - 2802	ND
Bifenazate	44 - 2711	ND	MGK 264 1	164 - 1610	ND
Boscalid	41 - 2623	ND	MGK 264 2	113 - 1089	ND
Carbaryl	43 - 2708	ND	Myclobutanil	17 - 2632	ND
Carbofuran	44 - 2682	ND	Naled	46 - 2642	ND
Chlorantraniliprole	50 - 2579	ND	Oxamyl	43 - 2793	ND
Chlorpyrifos	50 - 2781	ND	Paclobutrazol	48 - 2595	ND
Clofentezine	283 - 2691	ND	Permethrin	260 - 2759	ND
Diazinon	289 - 2727	ND	Phosmet	43 - 2585	ND
Dichlorvos	283 - 2752	ND	Prophos	303 - 2679	ND
Dimethoate	43 - 2726	ND	Propoxur	45 - 2707	ND
E-Fenpyroximate	286 - 2761	ND	Pyridaben	298 - 2830	ND
Etofenprox	43 - 2781	ND	Spinosad A	32 - 2128	ND
Etoxazole	287 - 2702	ND	Spinosad D	65 - 685	ND
Fenoxycarb	30 - 2714	ND	Spiromesifen	273 - 2747	ND
Fipronil	49 - 2636	ND	Spirotetramat	267 - 2754	ND
Flonicamid	43 - 2740	ND	Spiroxamine 1	16 - 1027	ND
Fludioxonil	315 - 2625	ND	Spiroxamine 2	28 - 1553	ND
Hexythiazox	42 - 2753	ND	Tebuconazole	286 - 2594	ND
Imazalil	263 - 2804	ND	Thiacloprid	43 - 2746	ND
Imidacloprid	43 - 2776	ND	Thiamethoxam	40 - 2752	ND
Kresoxim-methyl	45 - 2761	ND	Trifloxystrobin	46 - 2738	ND

Final Approval


 Karen Winternheimer
 01Dec2023
 09:36:00 AM MST
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 Sam Smith
 01Dec2023
 09:42:00 AM MST
 APPROVED BY / DATE

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<https://results.botanacor.com/api/v1/coas/uuid/17a9c912-1b13-40a1-9dde-5bbbccc7fab1>

Definitions

LOD = Limit of Detection, ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation, PPB = Parts per Billion, % = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method). Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa * (0.877)) and Total CBD = CBD + (CBDa * (0.877)). Fail equates to a concentration level of Delta 9-THC, on a dry weight basis, higher than 0.3 percent + or - the measurement uncertainty. Total Potential THC is calculated using the following formulas to take into account the loss of a carboxyl group during decarboxylation step. Total THC = THC + (THCa * (0.877)). ALOQ = Above Limit Of Quantitation (defined by dynamic range of the method), CFU/g = Colony Forming Units per Gram. Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form. Examples: 10² = 100 CFU, 10³ = 1,000 CFU, 10⁴ = 10,000 CFU, 10⁵ = 100,000 CFU.

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