

HOP QUALITY REPORT CERTIFICATE OF ANALYSIS

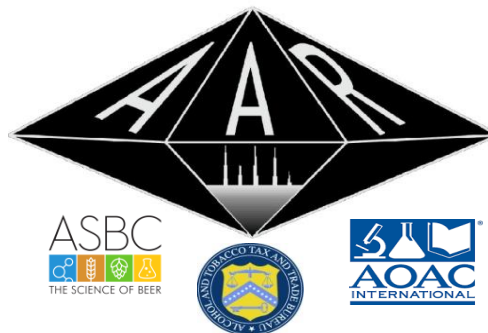
To: Wisconsin Hop Exchange

Sample ID: 24CAS2608-01TH

Variety: Cascade

Product: T-90 Pellet

Date : 4/1/2025



Certifying Officer: Zach Lilla - Lab Manager
TTB Certified Chemist - Member AOAC - ASBC - BJCP

<u>Method</u>			
Hops-4C	Moisture Analysis	% Moisture	11.4
		% Dry Matter	88.6
AAR	Xanthohumol by HPLC	NT	mg/g
Hops-12	Hop Storage Index	HSI	0.252
Hops-13	Essential Oil by Steam Distillation	mL/100g	1.30
Hops-14	Alpha and Beta Acids by HPLC	Cohumulone	33.5 (% of Total AA)
ICE-3		% Alpha Acids	6.65
		Colupulone	48.1 (% of Total BA)
		% Beta Acids	8.65
		a/b ratio	0.77
Hops-17	Hop Essential Oil by GC-FID		
	(as is)	% area	mg/100g
		B-Pinene	0.55 6.30
		Myrcene	46.26 597.89
		Linalool	0.42 5.68
		Caryophyllene	7.30 86.61
		Farnesene	7.91 115.78
		Humulene	17.66 207.80
		Geraniol	0.50 6.71

NT=NOT TESTED

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist
AAR LAB - ADVANCED ANALYTICAL RESEARCH
2517 Advance Rd Ste. A Madison WI 53718



AROMA QUALITY (AQ)

HOP QUALITY REPORT

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		Typical Range	
% Moisture	11.4	8 - 12 %	✓
HOP QUALITY (adjusted to 10% moisture)			
Total Oil ml/100g	1.32	0.8 - 2.5 mL	✓
cohumulone	33.5	30 - 35%	✓
Alpha Acids	6.76	5.5 - 9%	✓
Beta Acids	8.79	6.0 - 7.5%	↑
Myrcene	46.26	45.00 - 60.00 %	✓
AROMA QUALITY (AQ)			

	% Area			mg/mL of Hop Oil			mg/100g of Hops (@10%H2O)		
B-Pinene	0.55	0.50 - 0.80 %	✓	4.86	5 - 8	↓	6.40	4 - 20	✓
Myrcene	46.26	45.00 - 60.00 %	✓	461.10	450 - 600	✓	607.60	360 - 1500	✓
Linalool	0.42	0.30 - 0.60 %	✓	4.38	3 - 6	✓	5.77	2.4 - 15	✓
Caryophyllene	7.30	5.00 - 9.00 %	✓	66.79	50 - 90	✓	88.01	40 - 225	✓
Farnesene	7.91	6.00 - 9.00 %	✓	89.29	60 - 90	✓	117.66	48 - 225	✓
Humulene	17.66	14.00 - 20.00 %	✓	160.26	140 - 200	✓	211.18	112 - 500	✓
Geraniol	0.50	0.01 - 0.30 %	↑	5.17	0.1 - 3	↑	6.82	0.08 - 7.5	✓

AQ vs VARIETY SPECS

Aroma Intensity= 14

AQ vs ALL HOP VARIETIES

Aroma Intensity= 5

Signed: _____

Zachary Lilla - Lab Manager - TTB Certified Chemist

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