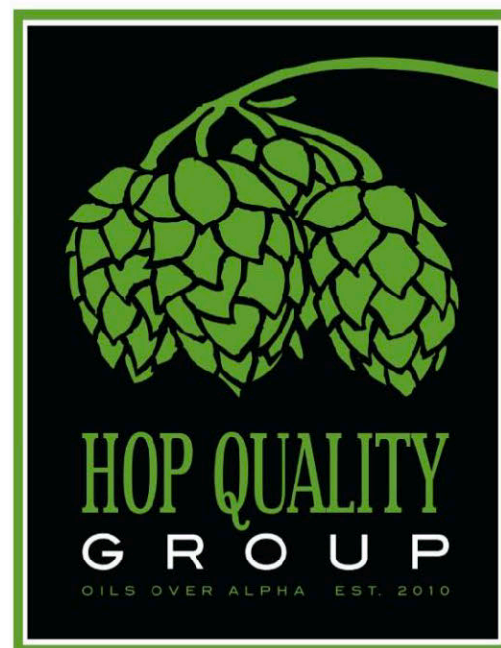


<b>HQG Pellet Mill Visit Date:</b>	7/21/21
<b>Primary Owner/Operator:</b>	YCH
<b>Physical Address of Facility:</b>	555 W. South Hill Rd, Sunnyside, WA 98944
<b>Pellet Mill Contact:</b>	Blaze Ruud
<b>Contact's Email Address:</b>	Blaze.ruud@yakimachief.com
<b>Contact's Email Phone:</b>	



<b>HQG Attendee &amp; Brewery</b>	
Alec Mull-Founders	Brad Benson-Stoup
Jeremy Moynier-Stone	
JT Albright-Stone	
Sam Pecoraro-Von Ebert	
Van Havig-Gigantic	

**Operations Description:**

<p>Same general operating procedures as other YCH facilities with SOPs, PPE, signage etc. Stage bales immediately adjacent to cooler trying to keep cones as cold as possible. Bale “beater” is slightly different than typical bale breaker trying to keep cones intact. Beater bars to shaker screened table and a chute for foreign material. Cones are quick frozen on cryo auger with liquid Nitrogen. All YCH lines use liquid nitrogen to precool hops prior to pelletizing, (as well as at the die), this Cryo line is similar in theory to the others but uses significantly more liquid Nitrogen to freeze the hops for better Lupulin separation. (The HQG also believes this process helps to reduce oxidation by purging ambient air from the product flow and helps to reduce off gassing of hop aromatics at the mill.) Hammer mill has 2 magnets prior. Cryo auger conveys to vibratory sifters for material separation, and then another pass through a vibratory sifter for optimization of collection of Lupulin. Three different product streams: 1) Lupulin enriched concentrated hop powder than can be packaged as powder, or 2) pelletized as Cryo pellets, and 3) the coarse fraction of primarily bract and strig that gets pelletized into a “Noble” like product. This “Noble” product still has many beneficial components but is reduced in Lupulin. Polyphenols are concentrated in the bract and can still add brewing value, especially where concentrated AA may not be desirable. Magnets immediately prior to pellet packaging and one planned prior to powder packaging. Will be installed prior to operation this year.</p>
<p>The maintenance workers are also operators so have an excellent understanding of the process and equipment. They were in the process of adding in more magnets. Can do up to 7 Million lbs but they are maxing out capacity, so looking to expand (might put in another line). There is a lot of growth in Cryo. They should finish production mid-March. Repurpose Nitrogen to reduce use and purge the weighing machine with Nitrogen.</p>
<p>Monthly best practice mtgs for Green Chief. Pre-Harvest Grower Mtg each year to review process with Growers. (All lab work = Sunnyside: Division is R&amp;D and overflow). YCH has a portal system on-line for records (example spray records are entered into Portal). Lab data goes into portal within 24 hrs. Nice feedback system from Portal to Growers (selection feedback from internal and Brewers for example). No barcoding. Grower Lot # is used for tracking. *Opening a YCH lab at Jackson’s in ID for ALL Growers (not just YCH Growers). Their ERP System won’t allow a hop to proceed to a work order until it’s passed all the requirements. Every employee at YCH has a quality goal (fiscally tied) as one of their 5 goals.</p>

**Areas of Concern:**

YCH intends to install magnet immediately prior to Lupulin packaging line. THANKS!, we love magnets.
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**Additional Comments:**

**Quality test performed:** See survey below

**Third Party Certification, if any:** Green Chief is a comprehensive program and ISO, see survey below.

**Additional Comments about the operation?**

Impressive facility with industry leading innovation. Good leadership and process. Good signage and labelling throughout.

**Recommendations:**

Keep up the great work on innovation, food safety and hop quality!

Get that magnet installed at the Lupulin packaging line.

It's standard industry practice we understand that the bale wrap provides protection, and YCH maintains impeccable floor cleanliness for this area, but please think about alternatives to staging bales on ground prior to bale breaker. The HQG would love to see these bales never touch the ground in processing. We have seen roller conveyor work well for this at other mills.

Thank you YCH for working so hard on food safety, hop quality and innovative products!

## Hop Quality Group

### Hop Pellet Mill Survey

Facility Address - 555 W. South Hill Rd, Sunnyside, WA 98944

Primary Owner/Operator- Yakima Chief Hops

Manufacturer of Hammer Mill- **Cryo Line:** FitzMill Grinder  
Manufacturer Date: N/A  
(1) 5HP Motor

Manufacturer of Pellet Mill- Gray Line: California Pellet Mill (3) 100C

Date of manufacture or installation- Installed: 2017, 2018, 2020

Motor size in KW or HP- 100 HP (3)

Blending capacity

Bale breaker bin capacity-

Powder tank capacity- 300 Lb (Lupulin Powder)

Blender type (Ribbon or Conical)- Ribbon (Conversion to Paddle Design)

Throughput capacity (per 24 hours)- 2,200lb/hr Capacity

Magnet locations- Pre-Grinder | Pre-VFFS

Pellet diameter & number of die sizes owned- ¼" Diameter | 6

Target temperature of pellet & cooling method- Not to Exceed 80F CryoHops | Liquid Nitrogen

Vacuum hard pack or soft pack & flush gas type- Nitrogen Flushed | Viking VFFS

Quality tests performed- Temperature, Oxygen, Density, Seal Integrity

Laminate foil integrity tests performed & frequency of tests- Dunk Tank, 1 Bag per Pallet

Standard label information-

Frozen storage capacity- 32F | 30MM Capacity Across All Campuses

Any third-party certification- ISO 9001 | ISO 14001