

West Coast Pilsner

Why this choice? I'm getting burned out on all the NEIPAs today but I like the hops. And I'm liking the pilsners that are a little lower in ABV, not as heavy handed as the IPA and much more sessionable beers. Recently while traveling in the south, I had several different hoppy pilsners that I found quite enjoyable. While trying to find a style for such a beer, Brian pointed me towards the West Coast Pilsner which seems close enough to the style I was looking for. After a little research I became intrigued and I thought it would be an interesting experiment for us to try.

West Coast Pilsner isn't something new but it isn't exactly something we see every day. They've been around for about seven years and are now starting to increase in popularity, probably more so on the West Coast. While the style is relatively new and still evolving, it is defined by the combination of straightforward drinkability and aggressive, New World dry hopping. (1)

We're starting to see something similar here on the East Coast too, with hoppy American pilsners like Smith & Lentz's Pizza Palace Pilsner, Aeronaut's Robocrusher and countless others. Maybe these really are West Coast Pilsners and we just don't know it. Much like they call a New England IPA a Hazy IPA on the west coast, we could be calling West Coast Pilsner a hoppy pilsner here on the East Coast.

What is West Coast Pilsner?

West Coast Pilsner is a crisp, well balanced and sessionable pilsner beer with an intense hop aroma and flavor and some bitterness achieved through aggressive American and/or New World dry hopping. Most examples also have a high level of clarity. After the hops, it's similar to a German Pils in terms of grain, yeast, fermentation temperature, and strength. (1, 2, 3, 10, 11)

West Coast Pilsner sounds like a lot of other styles, such as German Pilsner, Italian Pilsner, New Zealand Pilsner, India Pale Lager, Cold IPA and probably many more. To further understand what it's not, let's look at how it compares to some of these other styles:

Style	Key difference to West Coast Pilsner
German Pils	<ul style="list-style-type: none">• Noble hop showcase
Italian Pilsner	<ul style="list-style-type: none">• German Pilsner featuring noble hops and dry hopping with noble hops
New Zealand Pilsner	<ul style="list-style-type: none">• Pilsner featuring New Zealand hops (12)• Medium to high hop bitterness (12)• Often brewed using neutral ale yeast at cool temperatures (12)
India Pale Lager	<ul style="list-style-type: none">• Aroma & Flavor has a heavier grist bill and may exhibit bready, cracker-like, or other attributes typical of pale malts, may have a slightly higher ABV and IBU range, hop haze allowed (5)• Old school caramel malts, higher ABV (10)• Many more yeast choices than the German Pilsners

	<ul style="list-style-type: none"> • All pilsners are lagers but not all lagers are pilsners; may be more lager-like than pilsner-like
American Lager & Hoppy American Lagers	<ul style="list-style-type: none"> • Considerably less intense hop aroma, flavor, and bitterness (1)
Cold IPA	<ul style="list-style-type: none"> • Little or no malt character to interfere with the hops. (6) • The grist often is heavy on adjuncts such as corn or rice, which lighten the body and leave more room for the hops to shine. (7) • Typically uses lager yeast fermented at warm-ish, ale-like temperatures to drive attenuation without adding a bunch of esters or other fermentation characteristics. (7)

With all this talk about hops, is a West Coast Pilsner juicy and hazy like a New England IPA? The term juicy doesn't come up much in the literature but there are a fair number of West Coast Pilsners out there that claim to be juicy. Based on our style definition above, we see juicy could fit right in but hazy does not.

Style guidelines

Since the West Coast Pilsner is an evolving style, there isn't a specific style descriptor in the BJCP, however, the 2023 World Beer Cup guidelines has a subcategory called Contemporary American-Style Pilsner which is where they include the West Coast Pilsners. If we use this subcategory, combine it with our West Coast Pilsner description above, add a little bit of what we learned about the style and rearrange the words in the style of the BJCP, we get the following guideline for our mini-comp:

West Coast Pilsner	OG Range	FG Range	IBU Range	SRM Range	ABV Range
	1.045 – 1.053	1.010 – 1.018	25-50	3-6	3.9% - 4.7%
<p>Overall Impression: A crisp, well balanced and sessionable pilsner beer with an intense hop aroma and flavor and some bitterness achieved through aggressive American and/or New World dry hopping.</p> <p>Aroma: Medium to high hop aroma reflective of American and New World hop varieties. Medium-low to medium malt in support, may have a light grainy Pils malt character (sometimes Graham cracker-like). The hop character should be most prominent in the balance, but some malt character may be evident. DMS, acetaldehyde, fruity esters, and diacetyl should not be present.</p> <p>Appearance: Straw to gold in color. Appearance should be clear. Chill haze should not be present.</p> <p>Flavor: Crisp, clean and well balanced. The hop flavor is medium to high, and reflects the same characteristics as the aroma. The hop character in the aftertaste should not be sharp or harsh. The malt flavor is medium-low to medium, some grainy flavors and slight Pils malt sweetness are acceptable. The perceived bitterness is low to medium. DMS, acetaldehyde, fruity esters, and diacetyl should not be present.</p>					

Mouthfeel: Medium-low to medium body, medium to high carbonation. Never harsh nor astringent.

Comments: The hop aromatics often have a tropical and citrus character. Hop layering and timing is the key. Typically, brewers use Noble (or Noble-esque) hops on the hot side to achieve perceptible bitterness, then dry hop with bright, citrus-forward, and tropical hops from the Pacific Northwest, New Zealand, Australia, and South Africa

History: Started on the US West Coast in the mid-2010s.

Characteristic Ingredients: American and/or New World hops. Pilsner base malt, optionally augmented with pale malt. Low-mineral water, typically with more chloride than sulfate. Pilsner yeast.

Style Comparison: Similar to German Pils, Italian Pilsner and New Zealand Pilsner but featuring American and New World dry hopping. Not as bitter as New Zealand Pilsner. Should not be as hoppy or bitter in balance or as high in ABV as an IPA or IPL. More intense hop aroma, flavor, and bitterness than a traditional American lager, and distinct from other hoppy lagers due to its aggressive dry hopping.

Recipe Design & Brewing Techniques

There is some leeway in recipe design for a West Coast Pilsner since it's a new and evolving style without an official published style guideline.

The key to brewing a West Coast Pilsner is to approach it like a pilsner on the hot side and like a West Coast IPA on the cold side. (10)

The challenge is getting the balance right. In a lower ABV, you need to create body and structure to balance the heavy hop loads. A higher ABV (6%is) tends to balance the heavy hop loads. (10)

Mash

- Single infusion is probably adequate, although a step-mash or decoction is possible (1)

Mash/Grist

- Some use all pilsner malt, some use a blend of pilsner and pale malt and some may include some other malts and adjuncts (1)
- The industry is trending towards domestic malts which provide a cleaner and less robustness malt character than the German malts (10)
- Carahells is a nice malt to use for a little sweetness and body building without the deeper caramel malt flavors that tend to oxidize and affect the hops (10)

Mash/Water

- Soft water is key, both from commercial examples and per the German Pils style guideline
- Based on our commercial examples, we want a SU < CL ratio
- My recommendation is to use soft water with a hardness at or around ~30 ppm and a SU:CL ratio of 1:2. My rationale for this is in Attachment #3.

Mash/Temperature

- Pilsner mash temps are all over the map from ~148° and the mid-150s so that's not much help
- Many of the recipes I've seen call for a higher mash temp, in the 153-156 range, perhaps to give us a little extra body to help balance the heavier hop loads

Hops

- Hop layering and timing is the key. Typically, brewers are using Noble (or Noble-esque) hops on the hot side to achieve perceptible bitterness, then dry hopping with bright, citrus-forward, and tropical hops from the Pacific Northwest, New Zealand, Australia, and South Africa (1)
- Use low alpha noble-esque hops for bittering and flavor additions on the hot side (ie, in the kettle) and high alpha New World hops on the cold side (10)
- Use hops that play well with the sulfur aspects of lager yeast like ones that are citrus resiny and/or tropical, such as Mosaic, Citra, Nelson. A little Simco can give it that West Coast IPA flavor. The dank, cannabis-like hops don't work as well – use them with a very soft hand (10)
- Hop and drinkability must be in balance so you probably don't want to go overboard. 2-4 ounces in aroma, whirlpool and dry hops seems to be about the norm (4)
- All those new new-fangled hop products and methods that came about with the NEIPA would certainly apply but aren't necessary
- Some think dry hopping under pressure is the cat's meow (1)

Boil Time

- Boil 60-90 minutes although you may want to consider 90 minutes due to the use of pilsner malt if you buy into the theory it drives off DMS. (9)

Yeast

- The yeast that pops up on most internet recipes is W34/70
- Some other choices for pilsner yeasts
 - Fermentis - SafLager W34/70, SafLager S23
 - Wyeast – 2124 Bohemian Lager, 2007 Pilsen Lager 2206, Bavarian Lager
 - White Labs – WLP800 Pilsner Lager Yeast, WLP802 Czech Budejovice Lager Yeast, WLP830 German Lager Yeast, WLP860 Munich Lager
- Remember, lagers need lots of yeast, in excess of 300B cells for five gallons, which is a least 2 11.5 gram sachets of dry yeast or a good size starter with liquid yeast

Fermentation

- Like most lagers, ferment on the cooler side (50s to low 60s) considering manufacturer's guidance and what you might normally do for a pilsner
- Can ferment a little warmer than traditional lagers to speed things up without ill effects, such as at 56 and then dry hop in the 60's (10)

- Dry hop somewhere in the 2-3 Plato range (8-12 SG) to avoid hop creep (10)

Lagering

- Some do, some don't (4,10)
- I say keep it fresh and pass on a chance for the hops to fade

Carbonation

- I'd carbonate to 2.6 volumes since it's in the sweet spot of most pilsners
 - German 2.4-2.8 volumes
 - Bohemian 2.3-2.6 volumes
 - American 2.5-2.7 volumes

Recipes

One of the more talked about West Coast Pilsners is Timbo Pils (4.1 on untappd, which is high for a pilsner) from the Highland Park Brewery in LA. Bob Kunz, Highland Park's owner, has provided the recipe (see attachment #1) and provides some additional brewing tips. Brian has given us a few more from Craft Beer & Brewing (also attached).

Final Thoughts


Remember, what you're trying to get. A very drinkable, crisp, hop forward pilsner beer. After that, let your imagination go wild.

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1. Beer & Brewing, [Writing the Rules of West Coast Pilsner \(So They Can Be Broken\)](#)
 2. [2023 World Beer Cup Style Guidelines](#)
 3. Brulosophy, [BRÜ IT YOURSELF | I SWEAR THIS IS A STYLE WEST COAST PILSNER](#)
 4. [Timbo Pils Notes from Bob](#)
 5. [2023 GABF Competition Beer Style Categories](#)
 6. Highland Brewing Website, [What is a Cold IPA?](#)
 7. Beer and Brewing, [Cold IPA Is Heating Up](#)
 8. BJCP Style Guideline, [German Pils](#)
 9. MoreBeer, [60, 90, or Otherwise: Finding the Best Boil Times](#)
 10. Craft Beer and Brewing Podcast, [West Coast Pilsner Roundtable With Firestone Walker, Highland Park, and Humble Sea](#) (see attachment #2 for a brief summary)
 11. Photos of various sample beer on [Untappd](#)
 12. [2021 BJCP Style Guideline](#)

Attachment 1 - Highland Park Timbo Pils

NOTES FROM BOB @ HIGHLAND PARK

Batch Size 5.5gal
OG: 1.054-1.055
FG: 1.010
ABV: 5.8%
Mash PH: 5.3-5.4
KO PH: 5.0
Hops: 40 IBU's



Water:
-aim for a 2 to 1 chloride to sulfate ratio. We add .5 grams calcium chloride per gallon to achieve this for our water profile. No gypsum addition is needed with our water profile.
-102ppm chloride
-40ppm sulfate

Grist: All Grain
-45% Rahr 2-row
-45% Weyermann Floor Malted Bo Pils
-10% Carapils

Yeast:
-Fermentis 34/70, 25-30grams dry yeast per 5 gallons pitched directly into cooled wort
-use your yeast nutrient of choice (make sure it has zinc in it). We use zinc at a rate of 3.2mg/5gals added into whirlpool
-Pitch yeast and ferment at 56F (going up to as high as 62F should be fine)
-Diacetyl rest up to 65F on day 3

Additional ingredients:
-1/2 tablet whirlfloc per 5 gallons @ 10min left in the boil
-1ml fermcap in boil to minimize boil overs

Hops:
-60min Sterling or Saphir 30 IBU's
-30min Sterling or Saphir 10 IBU's
-whirlpool hops Saphir 1oz/5gal
-Dry hop on day 6 or when the beer has hit terminal gravity. We dry hop 50% on the first day of dry hopping and the other 50% on the next day.
-Leave the beer on hops for 6-8 days.

Additional brewing notes:
-mash for 60 minutes at 153F
-90 minute boil
-brew a concentrated batch so that you have 4 gallons of 1.070 SG wort at end of boil and then add 1 gallon of filtered water once you turn your heat source off. Make sure the water is stored in your fridge or very cold. This cold water addition should drop the temperature down to around 180F and the gravity down to around 1.055 SG. This will allow you to immediately move your wort out of the range where DMS could be an issue. It will also minimize bitterness pickup from your whirlpool hops and allow you to retain more hop aroma and flavor.
-total fermentation and conditioning duration 3-4 weeks. No lagering.

While the recipe doesn't give dry hop amounts, Bob stated 3 1/2 pounds/barrel or roughly 9 oz / 5 gallons (10)

Attachment 2 - Craft Beer and Brewing Podcast, [West Coast Pilsner Roundtable With Firestone Walker, Highland Park, and Humble Sea](#)

Introduction from the website

“West Coast pilsner is the subject of this month’s roundtable, and we’ve assembled a talented cast of brewers to further the discussion. From the Firestone Walker Propagator brewhouse in Venice, California, Sam Tierney returns to the podcast. Highland Park Brewery founder Bob Kunz joins from their location in Los Angeles. And from Santa Cruz, California’s Humble Sea Brewery, cofounder Nick Pavlina rounds out the panel.

“The topic is West Coast pilsner, and each make excellent examples the style, from Highland Park’s award-winning Timbo Pils to Firestone Walker’s Welcome to LA and Humble Sea’s Santa Cruz Pils. Here, the brewers discuss:

- the challenge in building body and structure to balance hop loads in the lean beer
- simplifying malt bills and using domestic pilsner malt for higher attenuation
- finding better hop expression through restraint in the dry hop
- avoiding excessive malt complexity to allow the hops to shine
- layering in lower-alpha hops to build texture and support the fruitier modern hop notes
- selecting aroma hops for cohesion
- managing hop creep
- distinguishing West Coast pilsner from cold IPA and Italian-style pilsner”

Some key take-aways

Style – pilsner-like, sessionable, balanced.

Approach like a pilsner on the hot side, like a west coast IPA on the cold side

Challenge is getting the balance right

1. Lower ABV, need to create body and structure to balance the heavy hop loads
2. Higher ABV (6%is) tends to balance the heavy hop loads

Mash

1. Trending towards domestic malts (cleaner and less malt robustness than German malts)
2. Carahells is a nice malt to use for a little sweetness and body building without the deeper caramel malt flavors that tend to oxidize and affect the hops
3. Santa Cruz – no decoction (which they would normally do), found it gave too much malt complexity that affected the balance of the beer

Some hops and hop blends work better than others

1. Everyone agrees low alpha noble-eqsue hops for bittering, Low alpha acid hops on the hot side and High alpha hops on the cold side
2. Layering of hops, which means multiple additions (ie, bittering, flavor, aroma)

3. Want hops that play well with the sulfur aspects of lager yeast, ones that are citrus resiny and/or tropical, such as Mosaic, Citra, Nelson. A little Simco helps give it that west coast IPA flavor
4. Hops that don't work well – use a very soft hand with dank, cannabis like hops; Galaxy

Ferment a little warmer than traditional lagers

1. Highland Park – ferment at 56, dry hop in the 60's
2. Firestone Walker – similar to Highland Park
3. Santa Cruz – traditional 48-50 fermentation, dry hop in the 50s (works for them, maybe due to their yeast strain)

Dry hop

1. Hop creep is a worry (ie, during fermentation), dry hopping in the 60s appears to clean this up
2. Dry hop somewhere in the 2-3 Plato range (8-12 SG)
3. Timbo is 3.5#/barrel, the other two are 1-2#/barrel, which equates to ~9 oz/5gallons and ~2-5-3.8 oz/5 gallons, respectively

Why call is West Coast Pils versus IPL

1. Branding – educate customer to what they're getting
2. IPL – old school caramel malts, higher ABV

Attachment #3 – Mash Water Chemistry

Here is summary of water chemistry research that led to the recommendation of using soft water with a hardness level at or around 30 ppm and a 1:2 SU:CL ratio in the mash.

Soft water is key, both from commercial examples and per the German Pils style guideline.

Determining the SU:CL ratio is the interesting part. Since we're making something that is similar to a German Pils, that's a good place to start. Here we see both the North and South German Pils have a SU > CL ratio as follows:

- North German Pils SU:CL ratio of 2.5:1 (favors hops/bitterness)
- South German Pils SU:CL ratio of 1.8:1 (favors hops/ bitterness) combined with even softer water would taste less hop-bitter than an equally hopped North German Pils

But our two commercial examples both have a SU < CL ratio

- Timbo Pils SU:CL ratios of 1:2.6 (favors malt)
- Odell Pilsner Project Lorien & HBC 1134 SU:CL ratios of 1:3 (favors malt)

Interestingly, both commercial examples have a ratio more like Brun'water's NEIPA SU:CL ratio of 1:2 and both are dead opposite to what we see in the German Pils. So the question has to be, why they are doing this?

Next, let's look at what SU and CL do in the mash. Here's a description (courtesy of Bard) where I've underlined the characteristics we want to see in our West Coast Pilsner:

- Sulfate:
 - Enhances bitterness: Sulfate accentuates the bitterness of hops, resulting in a crisp, dry bitterness. It's particularly beneficial for hop-forward beer styles like IPAs, pale ales, and pilsners.
 - Balances malt sweetness: Sulfate helps balance the malt sweetness in beer, creating a more balanced and refreshing flavor profile.
 - Emphasizes hop character: Sulfate can enhance the perception of hop character, making hop aromas and flavors more pronounced.
- Chloride:
 - Softens bitterness: Chloride counteracts the harshness of bitterness, resulting in a smoother, rounder bitterness. It's particularly beneficial for malt-driven beer styles like porters, stouts, and brown ales.
 - Emphasizes malt sweetness: Chloride can enhance the perception of malt sweetness, making malt flavors more pronounced and creating a fuller-bodied beer.
 - Rounds out hop character: Chloride can round out hop character, making hop aromas and flavors more mellow and less aggressive.

Based on the above and our West Coast Pilsner definition, arguments could be made for either higher SU or CL levels in the mash! I guess this wasn't very helpful.

Next, let's look why a NEIPA has a higher CL level (also courtesy of Bard). New England IPAs (NEIPAs) are known for their juicy, hazy appearance, soft bitterness, and emphasis on hop aroma and flavor. While sulfate can enhance hop bitterness, it can also make the bitterness too harsh for the desired NEIPA profile. Chloride, on the other hand, softens bitterness, creating a smoother, rounder bitterness that complements the NEIPA style. Additionally, chloride can enhance malt sweetness and round out hop character, further contributing to the desired NEIPA profile.

Now the West Coast Pilsner effect we're looking for sounds a lot like the NEIPA effect above which supports what the commercial brewers are doing.

Another data point to consider is New Zealand Pilsner. This is another beer that is somewhat like a West Coast Pilsner, with one of the key differences being it is a showcase for New Zealand hops. As defined by the BJCP, it has a fairly low-mineral water, typically with more chloride than sulfate.

At this point, I've convinced myself we want a higher CL content than SU content in the mash, at least in the 2:1 range. Now we can go back and look at what we mean by soft water.

Water is considered soft if total hardness is less than 75 ppm, moderately hard at 75 to 150 ppm, hard at 150 to 300 ppm, and very hard at 300 ppm or higher. For a reasonable estimate of hardness, we simply add the CA and Mg content of our water. If we use German water as an example of soft water and Brun'water's profiles, we see water hardness as follows:

- Munich (boiled) = 29 ppm
- Jever (boiled) = 51 ppm

In the West Coast Pilsner we want a well-balanced, ever so slightly malty beer with a nice, soft hop presence without being an overly bitter beer. This is quite like how we want to see the hops in a NEIPA so I'll use Brun'water's NEIPA 1:2 SU:CL ratio. Granted it's not quite as intense as the two commercial examples we have but it seems like a good place to start. And if I use the Munich water (recall, it's softer than the North German water and would taste less hop-bitter than an equally hopped North German Pils) as an example of softness, we get a recommended water hardness at or around ~30 ppm.