

BREWSHEET v2.3 (2011-02-26)

Batch			
Brew Name:	Noble Pils		
Bottle Top Code:	Calories per Pint:	167	
Estimated OG:	1.049	Actual OG:	1.050
Estimated FG:	1.015	Actual FG:	1.014
Estimated IBU:	32	Actual IBU:	32
Estimated SRM:	4	Actual SRM:	4
Brew Date:	08/26/11	Collected (gal):	5.50
Rack Date:	09/13/11	Racked (gal):	4.05
Bottle Date:	10/09/11	Bottled (gal):	4.00

BJCP Style Guidelines	
Style:	German Pilsner (Pils)
Code:	2A
OG:	1.044-1.050
FG:	1.008-1.013
IBU:	25.0-45.0
SRM:	2.0-5.0
ABV:	4.4-5.2%
CO2:	2.5-2.5

Inventory	
Bottles:	
Gallons:	
Date Checked:	
Efficiency	
Brewhouse:	70%
Batch Size:	72%
Into Boiler:	72%
Into Fermenter:	72%

Yeast Strain	
Yeast Strain:	Fermentis Saflager W-34/70 (Dry Lager)
Type:	Dry Lager
Attenuation (%):	65-75%
Actual Attenuation (%):	72%
Fermentation Temp (F):	48-58F
Flocculation:	high

Summary	
<b>Noble Pils</b>	
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Batch Size: 5.50 gal (8.94 gal preboil)	
Estimated OG: 1.049 SG (actual: 1.050 SG)	
Estimated FG: 1.015 SG (actual: 1.014 SG)	
Estimated IBU: 32 (Finseth; actual: 32)	
Estimated Color: 4 SRM (actual: 4 SRM)	
Brewhouse Efficiency: 70% (actual: 72%)	
Boil Time: 95 minutes	
<b>Grains:</b>	
8.00# Pale Malt (2-Row) US (2.0L) (75.29%)	
2.63# Pilsner (2-Row) Germany (2.0L) (24.71%)	

Grain	Pounds	Potential	SG Share	Color	% Bill
Pale Malt (2-Row) US	8.00	1.036	0.037	2.0	75.29%
Pilsner (2-Row) Germany	2.63	1.037	0.012	2.0	24.71%

Brewing			
Batch Size (gal):	5.50	Estimated First Runnings (gal):	
Total Grain Weight (lbs):	10.63	Desired Sparge Temperature (F):	170
Grain Temperature (F):	82	Sparge Water (gal):	
Mash Ratio (qts/lb):	1.25	Sparge Water Temperature (F):	
Mash/Lauter Deadspace (gal):	0.25	Estimated Preboil Volume (gal):	8.94
Total Water Needed (gal):	10.52	Boil Time (min):	95
Desired Mash Temperature (F):	122	Evaporation Rate (gal/hr):	1.70
Strike Water (gal):	3.32	Estimated Evaporation Loss (gal):	2.69
Strike Temperature (F):	131	Trub Loss (gal):	0.75
Grain Absorption (gal):	1.33	Volume Left in Kettle (gal):	0.00
Mash-out Temperature (F):		Actual Evaporation Rate (gal/hr):	1.67
Mash-out Water (gal):		Actual Evaporation Loss (gal):	2.85

Yeast Amounts	
Cell Count (billions):	378
Vials (White Labs/Wyeast):	3.2
Dry Yeast (g):	19
Starter Volume (mL):	
DME Required (oz)	
Vials Required (w/ Starter):	

Hop	Alpha %	Ounces	Boil Time	IBU	% Bill
Hallertauer (GR)	4.3%	2.20	65	30.6	42.11%
Saaz (CZ)	2.5%	0.55	5	0.9	10.53%
Tettnanger (US)	3.9%	0.28	5	0.7	5.26%
Tettnanger (US)	3.9%	0.88	dry	0.0	16.84%
Saaz (CZ)	2.5%	0.66	dry	0.0	12.63%
Spalt (GR)	4.1%	0.44	dry	0.0	8.42%
Hersbrucker	2.5%	0.22	dry	0.0	4.21%

Gravity		Collections	
Potential OG:	1.070	First Runnings (gal):	4.20
OG:	1.050	SG of First Runnings:	1.051
OG Temperature (F):	60	SG Temperature (F):	60
Corrected OG:	1.050	Corrected SG:	1.051
SG at Racking:	1.014	Second Runnings (gal):	4.70
SG Temperature (F):	63	SG of Second Runnings:	1.018
Corrected SG:	1.014	SG Temperature (F):	60
FG:	1.015	Corrected SG:	1.018
FG Temperature (F):	44	Estimated Preboil SG:	1.034
Corrected FG:	1.014	Preboil Volume (gal):	8.90
Estimated ABV (%):	4.5%	SG of Preboil Volume:	1.031
Actual ABV (%):	4.7%	SG Temperature (F):	60
IBU to Gravity Ratio:	0.63	Corrected SG:	1.031

ON BREW DAY	
Heat 3.32 gallons of strike water to 131F	
Add grain and mash at 122F for 60 minutes	

Diacetyl Rest		Carbonation	
Target Fermentation Completion:		CO2 Volume:	2.50
Target SG for Diacetyl Rest:		Bottling Temperature (F):	
		Priming Sugar (oz):	
		DME (oz):	
Fermentation		Forced Carbonation (lbs):	
CO2 Released During Fermentation (g):	739.18		

Targets: 1.049 OG, 1.012 FG, 34 IBU, 5 SRM.  
 Mash in at 122F for 10 min, raise to 154F for 45+ min, mashout at 170F.  
 Ferment at 50F until done, dry hop for 1 week, rack and lager for 4 weeks.  
 Strike: 5.75 gal (~2.17 mash ratio), sparge: 4.4 gal  
 Took about 15 mins to raise mash from 122F to 154F.  
 Took about 10 mins to raise mash from 154F to 170F.  
 Increased boil time by 5 mins to get target volume and OG.  
 After cooling, did not pitch yeast until next day.  
 9/6: dry hopped and raised temp to 60F.  
 1.020 SG.  
 9/13: great flavor and aroma; nice bitterness!

**Notes**  
 Yeast is very clumped but high; next time use the autosiphon.  
 10/9: nice flavor and aroma with a little spice in the finish; I get that "pilsner" taste and slight aroma too.  
 11/6: huge diacetyl aroma (seemed less earlier on and non-existent before lagering).  
 Bottled some and dumped about a half gallon.

User Variables	
12 oz Bottles Required:	41
Primary Fermentation Temp. (F):	50
Secondary Fermentation Temp (F):	32
FNW/IBU Factor (%):	10%
Strike Temperature Factor (F):	3
Sparge Temperature Factor (F):	2
Mash Time (min):	60
Specific Gravity (Brix):	12.9
Specific Gravity (SG):	1.050

**Yeast:**  
 Fermentis Saflager W-34/70 (Dry Lager)

**Mash/Sparge Schedule:**  
 Single Infusion, 122F, 60 min; Batch Sparge

**Fermentation Schedule:**  
 Primary Fermentation: 18 days @50F  
 Secondary Fermentation: 26 days @32F