BREWSHEET v3.3 (2012-03-18)

user input
calculated

Brew			
Name:	Little Endian Pale Ale		
Brew Date:	2013 March 17	Collected (gal):	5.50
Rack Date:		Racked (gal):	
Keg/Bottle Date:	2013 April 10	Kegged/Bottled (gal):	5.00
Estimated		**Actual**	
ABV (%):	5.2%	ABV (%):	5.0%
OG (SG):	1.054	OG (SG):	1.052
FG (SG):	1.014	FG (SG):	1.013
IBU:	40.3	IBU:	41.2
SRM:	7.3	SRM:	7.3
IBU/Gravity Ratio:	0.75	IBU/Gravity Ratio:	0.80

Grain	Pounds	Potential	SG Share	Color	% Bill
Northwestern Pale Ale malt	8.89	1.036	0.041	2.8	74.96%
Munich Malt 10L	1.19	1.035	0.005	10.0	10.03%
Vienna Malt	1.19	1.036	0.005	3.5	10.03%
Victory Malt	0.59	1.034	0.003	25.0	4.97%

Hop	Type	Ounces	Boil Time	Alpha %	IBU	% Bill
Magnum (GR)	P	0.46	65	12.5%	17.8	8.42%
Centennial	L	1.00	15	10.8%	14.1	18.32%
Cascade	L	1.00	10	8.8%	8.4	18.32%
Amarillo	L	1.50	0	10.4%	0.0	27.47%
Amarillo	P	1.50	dry	6.9%	0.0	27.47%

Design Notes

Targets: 5.2% ABV, 40 IBU; use WLP007.
Use 2-row, Victory, Vienna, and Munich.
Use Magnum, Centennial, Cascade, and Galaxy.

Batch Variables and Calculations	
Batch Size (gal):	5.50
Grain Temperature (F):	75
Total Grain Weight (lbs):	11.86
Mash	
Mash Time (min):	60
Desired Mash Temperature (F):	152
Strike Water (gal):	5.59
Strike Temperature (F):	167
Mash Ratio (qts/lb):	1.89
Grain Absorption (gal):	1.48
Mash Volume (gal):	6.54
Mash-out Temperature (F):	168
Estimated First Runnings (gal):	3.97
First Runnings (gal):	3.60
First Runnings Gravity (Brix):	14.43
First Runnings Gravity (SG):	1.056
Sparge	
Desired Sparge Temperature (F):	168
Sparge Water (gal):	3.50
Sparge Water Temperature (F):	172
Estimated Second Runnings (gal):	3.97
Second Runnings (gal):	4.23
Second Runnings Gravity (Brix):	5.60
Second Runnings Gravity (SG):	1.022
Estimated Preboil Volume (gal):	7.94
Estimated Preboil Gravity (Brix):	9.66
Preboil Volume (gal):	7.83
Preboil Gravity (Brix):	10.00
Preboil Gravity (SG):	1.039
Extraction Efficiency (%):	72%
Boil	
Boil Time (min):	65
Estimated Evaporation Loss (gal):	1.44
Hop Absorption (gal):	0.19
Volume Left in Kettle (gal):	0.00
Actual Evaporation Rate (gal/hr):	1.23
Actual Evaporation Loss (gal):	1.33
Original Gravity (Brix):	13.29
Batch Size Efficiency (%):	67%
Actual Efficiency (%):	67%
Fermentation	
Primary Fermentation (days):	14
Primary Fermentation Temperature (F):	67
Gravity After Primary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Secondary Fermentation (days):	7
Secondary Fermentation Temperature (F):	70
Gravity After Secondary Fermentation (SG):	
Temperature of Reading (F):	
Corrected SG:	
Tertiary Fermentation (days):	3
Tertiary Fermentation Temperature (F):	32
Final Gravity (SG):	1.015
Temperature of Reading (F):	39
Corrected SG:	1.013
Target Fermentation for Diacetyl Rest (%):	
Target Gravity for Diacetyl Rest (SG):	
Calories per Pint:	171
12 oz. Bottles Required:	51
Carbonation	
Bottling Temperature (F):	
Volumes of CO2:	2.45
Priming Sugar (oz):	
DME (oz):	
Forced Carbonation (lbs):	

System Variables	
Brewhouse Efficiency (%):	70%
Volume in Hoses (gal):	0.22
Volume in Wort Chiller (gal):	0.19
Volume in HERMS Coil (gal):	0.25
Mash/Lauter Tun Deadspace (gal):	0.14
Strike to Sparge Volume Ratio (%):	50%
Trub Loss (gal):	0.16
FWH IBU Factor (%):	10%
Strike Temperature Factor (F):	7
Sparge Temperature Factor (F):	4
Estimated Evaporation Rate (gal/hr):	1.33
Leaf Hop Absorption Ratio (qts/oz):	0.20
Pellet Hop Absorption Ratio (qts/ oz):	0.10
Cooling Losses (%):	4%
Hydrometer Correction (SG):	-0.001

BJCP Style Guidelines	
Style:	American Pale Ale
Code:	10A
OG:	1.045-1.060
FG:	1.010-1.015
IBU:	30.0-45.0
SRM:	5.0-14.0
ABV:	4.5-6.0%
CO2:	2.2-2.7

Yeast Strain	
Yeast Strain:	Danstar American West Coast (Dry Ale)
Type:	Dry Ale
Attenuation (%):	70-78%
Actual Attenuation (%):	75%
Fermentation Temp (F):	60-70F
Flocculation:	high

Required Amounts	
Cell Count (billions):	207
Vials (White Labs/Wyeast):	
Dry Yeast (g):	10.4
Yeast Starter/Slurry	
Vials (White Labs/Wyeast):	1
Date Yeast Produced:	
Yeast Viability (%):	
Yeast Growth Rate:	
Yeast Innoculation Rate (million/ml):	
Starter Volume Required (ml);	
DME Required (oz):	
Yeast slurry concentration (billion/ml):	2.5
Non-yeast Percentage (%):	20%
Yeast Slurry Required (ml):	

User Variables	

Batch Scaling			
Desired OG:	1.054	Total Weight (lbs):	11.85
Batch Size (gal):	5.50	Total Bill:	100.00%
Brewhouse Efficiency (%):	70%		
Grain	**Pounds**	**Potential**	**Color**	**% Bill**
Northwestern Pale Ale malt	8.89	1.036	2.8	75.00%
Munich Malt 10L	1.19	1.035	10.0	10.00%
Vienna Malt	1.19	1.036	3.5	10.00%
Victory Malt	0.59	1.034	25.0	5.00%

Poundage		
Goal (lbs):	8.89	
Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
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Amount (lbs | oz.f_oz):		
Amount (lbs | oz.f_oz):		
Needed (lbs | oz.f_oz):	8	14.24

Hydrometer Correction	
SG:	1.052
Temperature (F):	64
Corrected SG:	1.052

Gravity Calculator		
Brix:	12.90	13.29
Specific Gravity:	1.050	1.052
Degrees Plato:	12.35	12.70

Brix Ethanol Correction	
Original Brix:	
Current Brix:	
SG:	

Brewing Notes

3/17: increased boil by 5 min for gravity.
4/2: dry hopped.
4/10: kegged; deep citrus aroma (pineapple and orange) very bright and crisp.
Flavor is similar to aroma with very slight sweet note that reminds of caramel.
Bitterness kicks in at the end to round things out nicely.
Maybe a hint of grapefruit in the aroma at the end.
4/20: nice creaminess and dryness at the same time; aftertaste is quite nice.
Malty with hops in the flavor; hops in the aroma (citrus), nice bitterness.