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**AIR LEAKAGE REPORT**

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Date:	September 26, 2007	Rating No.:	12071
Building Name:	Ken Pieper Homes	Rating Org.:	EnergyLogic Inc.
Owner's Name:	Ken Pieper Homeowner	Phone No.:	970.532.3220 1.800.315.0459
Property:	995 Longbow Place	Rater's Name:	Robby Schwarz Todd Snizek
Address:	Larkspur, CO 80118	Rater's No.:	002 / 008
Builder's Name:	Ken Pieper Homes		
Weather Site:	Castle Rock, CO	Rating Type:	Based On Plans
File Name:	995 Longbow Place.blg	Rating Date:	9/14/07

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**Whole House Infiltration**

	Blower door test	
	<i>Heating</i>	<i>Cooling</i>
Natural ACH:	0.31	0.23
ACH @ 50 Pascals:	5.13	5.13
CFM @ 25 Pascals:	6245	6245
CFM @ 50 Pascals:	9800	9800
Eff. Leakage Area:	538.0	538.0
Specific Leakage Area:	0.00039	0.00039
ELA/100 sf shell:	3.15	3.15

**Total Duct Leakage to Outside**

CFM @ 25 Pascals:	49
CFM25 / CFMfan:	0.0081
CFM25 / CFA:	0.0051
CFM per Std 152:	N/A
CFM per Std 152 / CFA:	N/A
CFM @ 50 Pascals:	77
Eff. Leakage Area:	4.22
Thermal Efficiency:	N/A

**Ventilation**

Mechanical:	Supply Only
Sensible Recovery Eff. (%):	0.0
Total Recovery Eff. (%):	0.0
Rate (cfm):	148
Hours/Day:	12.0
Fan Watts:	500.0
Cooling Ventilation:	No Ventilation

**ASHRAE 62.2 - 2003 Ventilation Requirements**

For this home to comply with ASHRAE Standard 62.2 - 2003 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, a minimum of 142 cfm of mechanical ventilation must be provided continuously, 24 hours per day. Alternatively, an intermittently operating mechanical ventilation system may be used if the ventilation rate is adjusted accordingly. For example, a 283 cfm mechanical ventilation system would need to operate 12 hours per day, as long as the system operates to provide required average ventilaton once each hour.

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2005 EPACT ENERGY EFFICIENT HOME TAX CREDIT

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**Normalized, Modified End-Use Loads (MMBtu/year)**

	<i>2004 IECC</i>	
	<i>50% Target</i>	<i>As Designed</i>
Heating:	85.8	95.0
Cooling:	30.4	21.7
<b>Total:</b>	<b>116.2</b>	<b>116.6</b>

**Envelope Loads (MMBtu/year)**

	<i>2004 IECC</i>	
	<i>90% Target</i>	<i>As Designed</i>
Heating:	154.4	149.9
Cooling:	54.8	20.5
<b>Total:</b>	<b>209.2</b>	<b>170.3</b>

**This home DOES NOT meet the requirements for the residential energy efficiency tax credits under Section 1332, Credit for Construction of New Energy Efficient Homes, of the Energy Policy Act of 2005.**

**Building Shell Features**

Ceiling Flat: R-38	Slab: R-0.0 Edge, R-7.5 Under
Vaulted Ceiling: R-38	Duct: Uninsulated
Above Grade Walls: U-0.034, R-28, R-23	Window: U-Value = 0.350, SHGC = 0.260
Foundation Walls: R-22.0	Heating: Fuel-fired air distribution, Natural gas, 93.0 AFUE.
Exposed Floor: R-50	Cooling: Air conditioner, Electric, 11.8 EER.

**Under penalties of perjury, I declare that I have examined this certification, including accompanying documents, and to the best of my knowledge and belief, the facts presented in support of this certification are true, correct, and complete.**

Name: _____	Signature: _____
Company: _____	Date: _____
Address: _____	



**ENERGY STAR HOME REPORT**

Date:	September 26, 2007	Rating No.:	12071
Building Name:	Ken Pieper Homes	Rating Org.:	EnergyLogic Inc.
Owner's Name:	Ken Pieper Homeowner	Phone No.:	970.532.3220 1.800.315.0459
Property:	995 Longbow Place	Rater's Name:	Robby Schwarz Todd Snizek
Address:	Larkspur, CO 80118	Rater's No.:	002 / 008
Builder's Name:	Ken Pieper Homes		
Weather Site:	Castle Rock, CO	Rating Type:	Based On Plans
File Name:	995 Longbow Place.blg	Rating Date:	9/14/07

**Normalized, Modified End-Use Loads (MMBtu/year)**

	<i>ENERGY STAR</i>	<i>As Designed</i>
Heating:	145.8	95.0
Cooling:	51.7	21.7
Water heating:	13.8	1.4
Lighting & Appliances:	83.4	96.3
<b>Total:</b>	<b>294.8</b>	<b>214.3</b>
<b>HERS Index:</b>	<b>85</b>	<b>58</b>

**ENERGY STAR Mandatory Requirements**

<input checked="" type="checkbox"/> Thermal Bypass Inspection Checklist *	<input checked="" type="checkbox"/> ENERGY STAR Products *
<input checked="" type="checkbox"/> Ductwork Requirements	<input checked="" type="checkbox"/> ENERGY STAR Scoring Exceptions

\* Thermal Bypass Checklist and ENERGY STAR Products are not checked in REM/Rate at this time.

**This home MEETS OR EXCEEDS the energy efficiency requirements for designation as an EPA ENERGY STAR Qualified Home.**

<b>Pollution Prevented</b>		<b>Energy Cost Savings (\$/year)</b>	
<i>Type of Emissions</i>	<i>Reduction (lb/year)</i>		
Carbon Dioxide (CO2)	30255.1	Heating:	\$989
Sulfur Dioxide (SO2)	35.2	Cooling:	\$347
Nitrogen Oxides (NOx)	58.5	Water Heating:	\$194
		Lights & Appliances:	\$46
		<b>Total:</b>	<b>\$1576</b>

The energy savings and pollution prevented are calculated by comparing the Rated Home to the Reference Home as defined in the "Mortgage Industry National Home Energy Rating Systems Standards" as promulgated by the Residential Energy Services Network (RESNET). In accordance with these guidelines, building inputs affecting setpoints, infiltration rates, window shading and the existence of mechanical systems may have been changed prior to calculating loads.

**REM/Rate - Residential Energy Analysis and Rating Software v12.41**

This information does not constitute any warranty of energy cost or savings.  
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## An ENERGY STAR<sup>®</sup> Qualified Home

This home built at

### 995 Longbow Place, Larkspur, CO

by Ken Pieper Homes

has been verified by EnergyLogic Inc., an independent professional or organization,  
to meet or exceed strict energy efficiency guidelines  
set by the U.S. Environmental Protection Agency.

HERS Index: 58

9/14/07

A handwritten signature in black ink, appearing to read "David Lee".

David Lee  
Chief  
ENERGY STAR Residential Branch

A handwritten signature in black ink, appearing to read "Sam Rashkin".

Sam Rashkin  
National Director  
ENERGY STAR for Homes

[www.energystar.gov](http://www.energystar.gov)

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2006 IECC ANNUAL ENERGY COST COMPLIANCE

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Property:	995 Longbow Place	Rater's Name:	Robby Schwarz Todd Snizek
Address:	Larkspur, CO 80118	Rater's No.:	002 / 008
Builder's Name:	Ken Pieper Homes		
Weather Site:	Castle Rock, CO	Rating Type:	Based On Plans
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**Annual Energy Cost**

	2006 IECC	As Designed
Heating:	2128	1372
Cooling:	361	207
Water Heating:	223	29
Lights & Appliances:	2357	2404
Photovoltaics:	-0	-261
Service Charge:	152	152
<b>Total:</b>	<b>5221</b>	<b>3903 *</b>
Duct Insulation R-Value Check (per Section 403.2.1)		
Minimum Duct Insulation (Design must be higher):	8.0	8.0
Window U-Value Check (per Section 402.6)		
Window U-Value (Design must be lower):	0.480	0.349

This home MEETS the annual energy cost requirements in accordance with Section 404 of the 2006 International Energy Conservation Code based on a climate zone of 5B. In fact, this home surpasses the requirements by 25.2%.

\* Design energy cost is based on the following systems:  
 Heating: Fuel-fired air distribution, 140.0 kBtuh, 93.0 AFUE.  
 Water Heating: Integrated, Gas, 0.83 EF.  
 Cooling: Air conditioner, 60.0 kBtuh, 11.8 EER.  
 Cooling: Air conditioner, 36.0 kBtuh, 11.0 SEER.  
 Window-to-Wall Area Ratio: 0.16  
 Blower door test: Htg: 9800 Clg: 9800 CFM50

In accordance with IECC, building inputs, such as setpoints, infiltration rates, and window shading may have been changed prior to calculating annual energy cost. Furthermore, the standard reference design HVAC system efficiencies are set to the "prevailing federal minimum standards" as of January, 2006. These standards are subject to change, and software updates should be obtained periodically to ensure the compliance calculations reflect current federal minimum standards.



# Home Energy Rating Certificate

Ken Pieper Homes  
995 Longbow Place  
Larkspur, CO 80118



**5 Stars Plus  
Based On Plans**

## Uniform Energy Rating System

1 Star	1 Star Plus	2 Stars	2 Stars Plus	3 Stars	3 Stars Plus	4 Stars	4 Stars Plus	5 Stars	5 Stars Plus
500-401	400-301	300-251	250-201	200-151	150-101	100-91	90-86	85-71	70-0

## Energy Efficient

**HERS Index: 58**

### General Information

Conditioned Area: 9656 sq. ft.      HouseType: Single-family detached  
Conditioned Volume: 114681 cubic ft.      Foundation: Conditioned basement  
Bedrooms: 5

### Mechanical Systems Features

Heating: Fuel-fired air distribution, Natural gas, 93.0 AFUE.  
Water Heating: Integrated, Natural gas, 0.83 EF.  
Cooling: Air conditioner, Electric, 11.8 EER.  
Duct Leakage to Outside: 49.00 CFM.  
Ventilation System: Supply Only: 148 cfm, 500.0 watts.  
Programmable Thermostat: Heating: Yes      Cooling: Yes

### Building Shell Features

Ceiling Flat: R-38      Exposed Floor: R-50  
Vaulted Ceiling: R-38      Window Type: Low E .35 / .26  
Above Grade Walls: U-0.034, R-28, R-23      **Infiltration:**  
Foundation Walls: R-22.0      Rate: Htg: 9800 Clg: 9800 CFM50  
Slab: R-0.0 Edge, R-7.5 Under      Method: Blower door test

### Lights and Appliance Features

Percent Fluorescent Pin-Based: 10.00      Clothes Dryer Fuel: Electric  
Percent Fluorescent CFL: 20.00      Range/Oven Fuel: Natural gas  
Refrigerator (kWh/yr): 775.00      Ceiling Fan (cfm/Watt): 70.40  
Dishwasher Energy Factor: 0.46

The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

**REM/Rate - Residential Energy Analysis and Rating Software v12.41**

This information does not constitute any warranty of energy cost or savings.  
© 1985-2007 Architectural Energy Corporation, Boulder, Colorado.

**Rating Number: 12071**

Certified Energy Rater: Robby Schwarz Todd Snizek

Rating Date: 9/14/07

Rating Ordered For: Ken Pieper Homeowner

## Estimated Annual Energy Cost

Based On Plans

Use	MMBtu	Cost	Percent
Heating	168.5	\$1349	35%
Cooling	7.5	\$192	5%
Hot Water	3.6	\$29	1%
Lights/Appliances	96.3	\$2404	62%
Photovoltaics	-10.1	-\$261	-7%
Service Charges		\$152	4%
<b>Total</b>		<b>\$3864</b>	<b>100%</b>

**This home meets or exceeds the minimum criteria for all of the following:**

EPA Energy Star Home

2001 International Energy Conservation Code

2003 International Energy Conservation Code

2004 International Energy Conservation Code

2006 International Energy Conservation Code

Meets Ft Collins criteria of a HERS Index of 94 or lower\*

\* Compliance with criteria for this program is determined by the rater.

## Home Energy Rating Provider

**EnergyLogic, Inc.**

P.O. Box N

Berthoud, CO 80513

Phone: 1-800-315-0459

www.nrglogic.com



Certified Energy Rater



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SUMMARY OF SELECTED REPORTS

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File Name: 995 Longbow Place.blg

Date: September 26, 2007

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**ENERGY ANALYSIS**

**Air Leakage Report**

Displays infiltration in all available units (regardless of the user input). Displays duct leakage in all available units if other than the qualitative default is selected. Also displays the building ventilation information.

**2005 EPAct Tax Credit**

The report indicates whether the home qualifies for tax credits under Section 1332, Credit for Construction of New Energy Efficient Homes, of the Energy Policy Act of 2205.

**CODE COMPLIANCE**

**Energy Star Home Report**

Shows whether your building design meets the EPA ENERGY STAR Home requirements based on the modified end-use loads for heating, cooling, and water heating.

**Energy Star Certificate**

EPA Energy Star Certificate for qualified builders or HERS/BOP providers.

**IECC Consumption Compliance Report**

The report compares the total annual energy use for the building design to a prescriptive version of the same building. This type of compliance allows additional flexibility in complying with IECC. The impacts of high efficiency heating and cooling systems, reduced infiltration and other performance features are considered for compliance.

**RATING**

**Home Energy Rating Certificate (HERC)**

Provides a home energy rating index and annual energy cost estimate in accordance with the "Mortgage Industry National Home Energy Rating Systems Standards" as promulgated by the Residential Energy Services Network (RESNET).