Home Performance Rating Report

Prepared For:

Name:	Joe Smith
Date:	01/09/12

Prepared By:

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Rater Name:	Jesse Mueller
Rater ID #:	HEG-EE-102
PA HIC #:	PA020865
NJ HIC #:	13VH05573900
Insurance Policy #:	GS343433
P&P Insured Amount:	$2,000,000.00

Building Information:

Address:	123 Sesame St Milford, PA 18337	
Floor Area:	2380	ft^2
Volume:	33424	ft^3
Year:	1950	

Audit Summary:

Easy Energy USA conducted a BPI & RESNET HERS (Home Energy Rating System) Energy Assessment of your home on 11/28/2012. We used the following energy prices in calculating your cost savings from recommended improvements.

Electric Rate:	$0.14 / kWh	**Nat Gas Rate:**	$0.93 / Therm
Electric Service Charge:	$2.52 / Month	**Nat Gas Service Charge:**	$5.99 / Month

HEALTH & SAFETY INFORMATION

The following health & safety tests and inspections were performed at the time of the audit: carbon monoxide tests to identify excess carbon monoxide in flue gases and in the air in & around your home, draft tests to evaluate the risk of back-drafting flue gases, and visual inspections of preventative safety measures (i.e. pressure relief valve, CO detector) and possible safety risks (i.e. volatile organic compounds, flammable substances).

Ambient CO:	0 ppm	**Gas Leaks:**	None
CO Detector:	Present	**Heat Spillage / Draft:**	Pass / Pass
DHW Pressure Relief:	Present	**DHW Spillage / Draft:**	Fail / Fail

INFILTRATION & VENTILATION

Blower door testing of your home indicated **4500 CFM_{50}** of total air leakage. This is a natural air exchange rate of **0.43 Natural Air Changes per Hour (ACH_N)**. This is greater than the Building Airflow Standard (BAS) of 0.35 ACH_N. When a home is too tight, moisture and harmful gases may become trapped inside. Over time, these substances may cause structural damage or respiratory health problems. If the home is to be sealed below its BAS, **3607 CFM_{50}**, exhaust-only mechanical ventilation of **54 CFM** would be required to run for 24 hours/day. Unless balanced mechanical ventilation is installed, the home should not be sealed below **2524 CFM_{50}**. There is currently sufficient ventilation in the home. However, the ventilator ducts are run improperly. I recommend rerouting the ducts to terminate completely outside the home.

INSULATION

Insulation keeps your home warm in the winter and cool in the summer. There are several common types of insulation — fiberglass (batts and blown-in), blown-in cellulose, foam board, and spray foam. When correctly installed in conjunction with air sealing, each type of insulation may deliver comfort and lower energy bills during the hottest and coldest times of the year. Insulation performance is measured by R-value - its ability to resist heat flow. Higher R-values mean more insulating ability. Different R-values are recommended for attics, walls, floors, and foundations depending on your location. Insulation works best when air is not moving through or around it, so it is very important to seal air leaks before installing insulation to ensure that you get the best performance from the insulation. Insulation levels were checked throughout your home. Observations are noted below:

LOCATION	EXISTING INSULATION TYPE	R-VALUE	RECOMMENDATON
Slab Floor	uninsulated	1	no recommendation at this time
Foundation Walls	uninsulated	1	Option 1: Air seal; insulate to R-7 with spray foam. Option 2: Air seal; insulate main walls to R-11 with fiberglass basement blanket & crawlspace walls to R-7 with spray foam.
Frame Floor	uninsulated	1	Air seal; insulate to R-30 with blown-in fiberglass.
Rim Joists	uninsulated	8	Air seal; insulate to R-30 with spray foam & fiberglass batts.
Above Grade Walls	fiberglass batt	11	Air seal; insulate to R-13 with high-density cellulose
Knee Walls	fiberglass batt	22	no recommendation at this time
Attic	fiberglass batt & blown	70	no recommendation at this time
Attic	fiberglass batt	51	Air seal; insulate to R-50 with loose-fill cellulose
Vaulted Ceilings	fiberglass batt	22	no recommendation at this time

WINDOWS & DOORS

Windows and doors leak air excessively. I recommend running the blower door, locating, and addressing any major air leaks. Energy-saving, insulated storm windows are also available for use with inefficient single pane windows. Hanging drapery will reduce the cold radiating effect from the windows. Foam insulated draperies are also available for additional comfort.

HEATING, DHW & AIR CONDITIONING

SYSTEM	TYPE	FUEL	CAPACITY (HEAT/COOL)	CAPACITY (STORAGE)	EFFICIENCY	LOCATION	PERFORMANCE ADJUSTMENT
Main Heating	Boiler	Natural Gas	120 kBtu		80% - Tested	Basement	100%
Hot Water	Storage	Natural Gas		40 gal	56% - Tested	Basement	100%
Supp. Heating	Fireplace	Wood Pellets	78 kBtu		80% - Estimated	Living Area	100%
Main Cooling	Central	Electricity	48 kBtu		16 SEER - Rated	Attic	100%

Heating, DHW & Air Conditioning Recommendation

Option #1 - Integrated Heat & Hot Water:
Have existing boiler plumbed into a storage tank to create an integrated heating & hot water system, allowing for the removal of the malfunctioning water heater.

Option #2 - Demand Hot Water:
Install 90AFUE On-Demand Hot Water System, allowing for the removal of the malfunctioning water heater.

WATER USAGE

Saving water means cutting costs and saving energy for you and your community. In a typical home, up to 30% of water usage can be saved through water-efficiency improvements. I recommend installing low-flow faucet & shower head aerators throughout the home. These devices slow the flow of water while maintaining a comfortable water pressure. Washing clothing with warm or cold water may reduce each load's energy use by 50% or more and is actually better for your clothing.

ELECTRICAL SYSTEM AND APPLIANCES

Items that contribute to phantom (stand by) power are remote controlled devices that are left plugged in while they are not in use, such as televisions and game consoles. Studies show that 70% of a device's annual electric consumption occurs during stand-by, and only 30% occurs during use. Saving 10-15% on your electric bill can be as easy as changing light bulbs, using smart power strips, and adjusting habits. Your photovoltaic system has the potential to generate revenue. Reducing unnecessary electric consumption saves system power, which may be sold back to your electricity provider at the close of each billing cycle.

Electrical Recommendation

Install smart power strips to reduce phantom power loads, such as entertainment systems or other areas of continuous power usage. Learn to switch power strip off when electronic equipment is not being used.

Install a power monitoring system to your breaker panel so you can monitor your electric usage in real time, discover high or constant energy consumers, and learn to reduce usage. We may be consulted on electrical reduction strategy, if desired. Cost is $250 installed.

Replace all standard incandescent light bulbs with compact fluorescent lamp (CFL) and/or light emitting diode (LED) bulbs. CFL and LED bulbs use up to 75% and 87.5% less energy (respectively) than an incandescent bulb uses while generating equivalent light output. They also last, on average, four to eight times longer. In frequently used fixtures, they can pay for themselves in as little as one year. Not all CFL and LED bulbs are the same; we recommend those with the ENERGY STAR logo. For exterior flood lights, I recommend LED bulbs.

Adjust refrigerators to 38-41 degrees and freezers to 0-5 degrees. Condense items into as few refrigerators as possible, and unplug unused refrigerators. The less empty a refrigerator is, the more efficiently it runs.

Activate your computer's power-save function. This not only saves energy, but may increase the life of the equipment as well.

Reduce the brightness setting on your television. Many newer TV's have “Retail” or “Vivid” brightness settings that can use up to 25% more energy than the “Home” setting.

ROOFS, GUTTERS, GROUNDS, & PROPERTY

Roof water & moisture management, flashing, and detailing must be in good condition in order to maintain your investment. Always keep the gutter system in good repairs and ensure the run-off drains deposit water at least 5 feet away from the foundation. It is important to keep moisture away from below grade parts of the house during all seasons. During winter, all snow should be shoveled away from the foundation. Melting snow against foundations may enter basements or other below grade areas.

FINANCING

Low interest energy improvement mortgages and loans are available to you from FHA & New Jersey's Clean Energy Program. All work performed while utilizing bank loans must use certified BPI Home Accredited Contractors. FHA has additional requirements.

ENVIRONMENTAL ISSUES

Houses built before 1978 may have lead based paint, and vermiculite installed before 1990 likely contains asbestos. Prior to any demo, a lead test should be performed according to our guidelines – we are a certified lead contractor.

www.epa.gov/iedweb00/lead.html http://www.epa.gov/iedweb00/asbestos.html

DISCLAIMER

Often, the conditioned space is not kept at design temperature 24 hours a day through the winter. Areas of a home may be under-conditioned, depending on occupant use and some assumptions made by the software about heating, hot water and appliance usage in your home. Projected outcomes are based on optimum operational efficiencies for the proposed measures. The *REM/Design/Rate* computer software is offered as an aid in rating the energy efficiency of new and existing homes. The rating approach and other aspects of the software meet the specifications for rating tools as specified in RESNET Mortgage Industry National HERS Accreditation Standards. The results are not a precise prediction of either overall energy consumption or utility bills. As called for in the guidelines, the program includes estimated typical values for numerous factors that can effect energy requirements, such as weather patterns, number of occupants and their living habits, appliance usage, thermostat settings, and certain details of construction. In a particular house, any of these factors may vary significantly from the assumptions made.

SUMMARY

Your home HERS index is 86. Completing the recommended work will bring your home down to a HERS index of 38* or 49**. For your home to meet current ENERGY STAR standards it would have to have a HERS index of 75* or 74**. You have room for improvement of your home, which will improve the comfort and value of your home, reduce pollution, and save you money.

*Integrated Hot Water System HERS Index
**Demand Hot Water System Hers Index

Kindly,

Jesse Mueller
RESNET Rater
BPI Accredited Organization
Easy Energy LLC/USA