

# Home Energy Rating Certificate

Walker Residence  
Napoleon, MO 64074



**3 Stars Plus**  
**Verified Condition**

## 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: **104**

### General Information

Conditioned Area:	3242 sq. ft.	HouseType:	Single-family detached
Conditioned Volume:	24783 cubic ft.	Foundation:	More than one type
Bedrooms:	3		

### Mechanical Systems Features

Heating:	Fuel-fired air distribution, Propane, 71.0 AFUE.		
Cooling:	Air conditioner, Electric, 9.0 SEER.		
Water Heating:	Conventional, Propane, 0.60 EF.		
Duct Leakage to Outside:	0.00 CFM.		
Ventilation System:	None		
Programmable Thermostat:	Heating: No	Cooling: No	

### Building Shell Features

Ceiling Flat:	R-28	Exposed Floor:	R-11
Vaulted Ceiling:	NA	Window Type:	Double - Wood
Above Grade Walls:	R-14	<b>Infiltration:</b>	
Foundation Walls:	R-0.0	Rate:	Htg: 1749 Clg: 1749 CFM50
Slab:	R-0.0 Edge, R-0.0 Under	Method:	Blower door test

### Lights and Appliance Features

Percent Fluorescent Pin-Based:	18.00	Clothes Dryer Fuel:	Electric
Percent Fluorescent CFL:	18.00	Range/Oven Fuel:	Electric
Refrigerator (kWh/yr):	775.00	Ceiling Fan (cfm/Watt):	0.00
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 v12.4**

This information does not constitute any warranty of energy cost or savings.  
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Rating Number: HTLLC20080032

Certified Energy Rater: Sharla Riead

Rating Date: March 18, 2008

Rating Ordered For: Gary & Bobbi Walker

### Estimated Annual Energy Cost

Verified Condition

Use	MMBtu	Cost	Percent
Heating	136.8	\$3266	69%
Cooling	7.3	\$144	3%
Hot Water	18.8	\$451	9%
Lights/Appliances	34.8	\$722	15%
Photovoltaics	-0.0	\$-0	-0%
Service Charges		\$180	4%
<b>Total</b>		<b>\$4763</b>	<b>100%</b>

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

**Hathmore Technologies, LLC**

**PO Box 1157**

Blue Springs, MO 64013-1157

(816) 224-5550

(816) 224-5150 (fax)

www.hathmore.com

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## ACTION REPORT

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Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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The following table identifies and ranks energy use and cost by building component. A maximum of six components are shown. Current mechanical equipment is assumed for this analysis. To determine the impact of varying the equipment efficiency, change the equipment specified in the building file and perform the energy calculations again.

### ANNUAL ENERGY PROFILE

Energy End-Use	Component	Consumption (MMBtu/yr)		Cost (\$/yr)
HEATING	Foundation Walls	41.1	\$	982
	Ducts	25.5	\$	609
	Above Grade Walls	24.5	\$	585
	Infiltration	21.4	\$	511
	Slab Floors	11.9	\$	285
	Windows/Skylights	11.4	\$	272
	Other	-8.3	\$	-198
	Total		127.6	\$
COOLING	Internal Gains	7.1	\$	140
	Windows/Skylights	2.8	\$	56
	Ducts	1.5	\$	29
	Ceilings/Roofs	0.6	\$	12
	Above Grade Walls	0.2	\$	3
	Other	-4.8	\$	-95
	Total		7.4	\$
WATER HEATING	Water Heater	18.8	\$	451
LIGHTS & APPLIANCES	Lights & Appliances	34.8	\$	723

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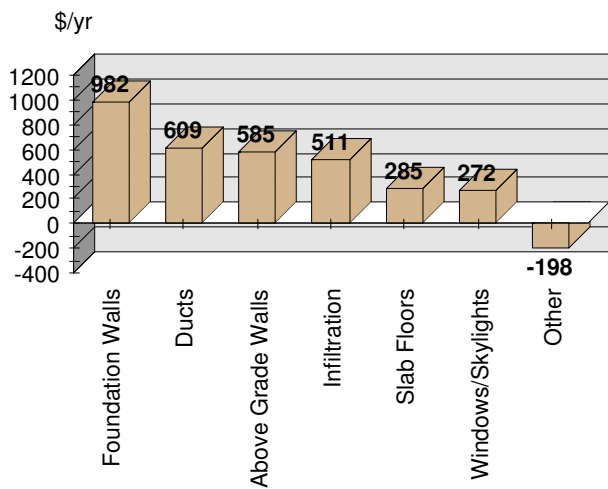
## ACTION REPORT

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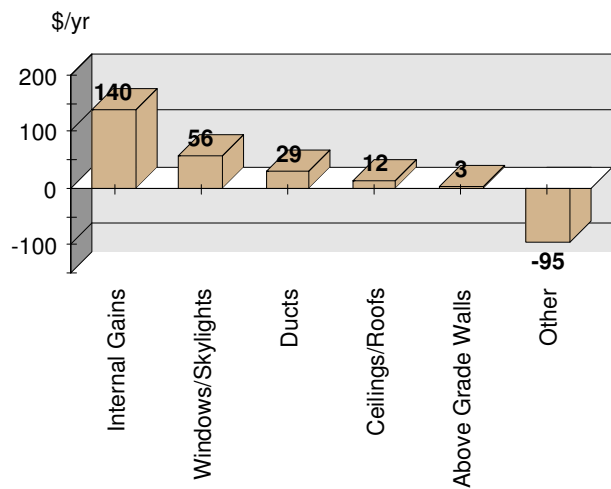
Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
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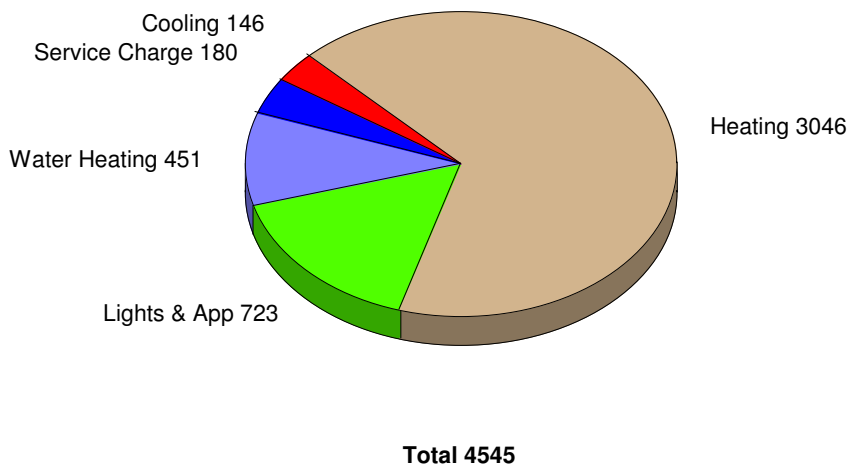
### Heating Cost (\$/yr)



### Cooling Cost (\$/yr)



### Annual Energy Cost (\$/yr)



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## AIR LEAKAGE REPORT

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Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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### Whole House Infiltration

	Blower door test	
	Heating	Cooling
Natural ACH:	0.26	0.18
ACH @ 50 Pascals:	4.23	4.23
CFM @ 25 Pascals:	1115	1115
CFM @ 50 Pascals:	1749	1749
Eff. Leakage Area:	96.0	96.0
Specific Leakage Area:	0.00021	0.00021
ELA/100 sf shell:	1.44	1.44

### Total Duct Leakage to Outside

CFM @ 25 Pascals:	N/A
CFM25 / CFMfan:	N/A
CFM25 / CFA:	N/A
CFM per Std 152:	N/A
CFM per Std 152 / CFA:	N/A
CFM @ 50 Pascals:	N/A
Eff. Leakage Area:	N/A
Thermal Efficiency:	80.00

### Ventilation

Mechanical:	None
Sensible Recovery Eff. (%):	0.0
Total Recovery Eff. (%):	0.0
Rate (cfm):	0
Hours/Day:	24.0
Fan Watts:	0.0
Cooling Ventilation:	Natural 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 62 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 125 cfm mechanical ventilation system would need to operate 12 hours per day, as long as the system operates to provide required average ventilation once each hour.

## BUILDING FILE REPORT

File Name: Walker Residence.blg

Date: April 22, 2008

Property/Builder:		Rating	
Building Name:	Walker Residence	Org. Name:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No:	(816) 224-5550
Prop. Address:		Rater's Name:	Sharla Riead
City,St,Zip:	Napoleon, MO 64074	Rater's No.:	0262
Phone No:	(816) 304-3317		
		Rating Date:	March 18, 2008
Bldr's Name:	Unknown	Rating Type:	Verified Condition
Model:		Reason:	Time of Sale/Purchase
Development:		Rating No.:	HTLLC20080032
Phone No:			

General Building Information	
Area of Cond. Space(sq ft):	3242
Floors on or Above-Grade:	2
Volume of Cond. Space:	24783
Number of Bedrooms:	3
Housing Type:	Single-family detached
Level Type(Apartments Only):	None
Foundation Type:	More than one type
Enclosed Crawl Space Type:	Unvented

Foundation Wall Info:	1	2	3
Name	Ambient Found	Crawl Side Found	Crawl Wall
Library Type	Uninsulated	Uninsulated	Uninsulated
Length(ft)	102.0	32.0	62.0
Total Height(ft)	7.0	5.0	2.0
Depth Below Grade(ft)	6.0	5.0	0.0
Height Above Grade(ft)	1.0	0.0	2.0
Location	Cond->ambient/grnd	Cond->garage/grnd	Cond->ambient/grnd
Uo Value	0.233	0.187	0.625

**BUILDING FILE REPORT**

**Foundation Wall: Uninsulated**

Type: Solid concrete or stone  
 Thickness(in): 8.0  
 Studs: None

Interior Insulation:

Continuous R-Value: 0.0  
 Frame Cavity R-Value: 0.0  
 Cavity Insulation Grade: 1.0  
 Ins top: 0.0 ft from top of wall  
 Ins Bottom: 0.0 ft from bottom of wall

Exterior Insulation:

R-Value: 0.0  
 Ins top: 0.0 ft from top of wall  
 Ins bottom: 0.0 ft below grade

Note:

<b>Slab Floor Info:</b>	1	2
Name	Basement Slab	Crawl Slab
Library Type	Uninsulated	Uninsulated
Area(sq ft)	1120	480
Depth Below Grade(ft)	6.0	0.0
Full Perimeter(ft)	134	94
Exposed Perimeter(ft)	134	62
On-Grade Perimeter(ft)	0	62

**Slab Floor: Uninsulated**

Perimeter Insulation (R-Value): 0.0  
 Perimeter Insulation Depth (ft): 0.0  
 Under-Slab Insulation (R-Value): 0.0  
 Under-Slab Insulation Width (ft): 0.0  
 Slab Insulation Grade: 1  
 Radiant Slab: No

Note:

<b>Frame Floor Info:</b>	1
Name	Cantilever
Library Type	R-11
Area (sq ft)	10
Location	Btwn cond & ambient
Uo Value	0.074

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BUILDING FILE REPORT

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Walker Residence

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**Frame Floor: R-11**

Information From Quick Fill Screen:

Continous Insulation R-Value	0.0
Cavity Insulation R-Value	11.0
Cavity Insulation Thickness (in.)	3.5
Cavity Insulation Grade	1.0
Joist Size (w x h, in)	1.5 x 9.5
Joist Spacing (in oc)	16.0
Framing Factor - (default)	0.1300
Floor Covering	CARPET

Note:

Layers	Paths		
	Cavity	Framing	Grade
Inside Air Film	0.920	0.920	0.920
Floor covering	1.230	1.230	1.230
Subfloor	0.820	0.820	0.820
Cavity ins	11.000	0.000	0.000
Continuous ins	0.000	0.000	0.000
Framing	0.000	4.375	0.000
	0.000	0.000	0.000
Outside Air Film	0.920	0.920	0.920
Total R-Value	14.890	8.265	3.890
U-Value	0.067	0.121	0.257
Relative Area	0.870	0.130	0.000
UA	0.058	0.016	0.000

Total Component UA: 0.074

Total Component Area: 1.0

Component Uo: 0.074

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BUILDING FILE REPORT

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Walker Residence

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Rim and Band Joist:	1	2	3
Name	Rim Bsmt	Rim Crawl	Band
Area(sq ft)	102.0	62.0	64.0
Continuous Ins	0.0	0.0	3.0
Framed Cavity Ins	11.0	0.0	11.0
Cavity Ins Thk(in)	3.0	0.0	3.0
Joist Spacing	16.0	16.0	16.0
Location	Cond -> ambient	Cond -> ambient	Cond -> ambient
Uo Value	0.077	0.267	0.063

Above-Grade Wall:	1	2
Name	Ambient Wall	Knee Walls
Library Type	R11+3 2x4 16"OC G2	R11+3 2x4 16"OC G2
Gross Area(sq ft)	2080.00	156.00
Exterior Color	Light	Medium
Location	Cond -> ambient	Cond -> attic
Uo Value	0.074	0.074

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BUILDING FILE REPORT

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Walker Residence

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**Above-Grade Wall: R11+3 2x4 16"OC G2**

Information From Quick Fill Screen:

Standard Wood Frame

Continuous Insulation (R-Value)	3.0
Frame Cavity Insulation (R-Value)	11.0
Frame Cavity Insulation Thickness (in)	3.0
Frame Cavity Insulation Grade	2
Stud Size (w x d, in)	1.5 x 3.5
Stud Spacing (in o.c.)	16.0
Framing Factor - (default)	0.2300
Gypsum Thickness (in)	0.6

Note:

Layers	Paths		
	Cavity	Framing	Grade
Inside Air Film	0.680	0.680	0.680
Gyp board	0.563	0.563	0.563
Air Gap/Frm	0.000	0.000	0.000
Cavity ins/Frm	11.000	3.750	1.030
Continuous ins	3.000	3.000	3.000
Ext Finish	0.940	0.940	0.940
	0.000	0.000	0.000
Outside Air Film	0.170	0.170	0.170
Total R-Value	16.353	9.102	6.383
U-Value	0.061	0.110	0.157
Relative Area	0.750	0.230	0.020
UA	0.046	0.025	0.003

Total Component UA: 0.074

Total Component Area: 1.0

Component Uo: 0.074

**BUILDING FILE REPORT**

Walker Residence

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<b>Window Information:</b>	<b>1</b>	<b>2</b>	<b>3</b>
Name	Front Porch	Front No OH	Right
Library Type	Double - Wood	Double - Wood	Double - Wood
U-Value	0.490	0.490	0.490
SHGC	0.580	0.580	0.580
Area(sq ft)	54.00	79.25	7.50
Orientation	South	South	East
Overhang Depth	8.0	0.0	1.0
Overhang To Top	1.0	0.0	0.0
Overhang To Bottom	5.5	0.0	4.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

<b>Window Information:</b>	<b>4</b>	<b>5</b>	<b>6</b>
Name	Back Door	Back Tall Window	Back Short Window
Library Type	Double - Wood	Double - Wood	Double - Wood
U-Value	0.490	0.490	0.490
SHGC	0.580	0.580	0.580
Area(sq ft)	40.00	12.50	6.00
Orientation	North	North	North
Overhang Depth	6.0	6.0	6.0
Overhang To Top	1.0	1.0	1.0
Overhang To Bottom	7.7	4.0	4.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

**BUILDING FILE REPORT**

<b>Window Information:</b>	7	8	9
Name	Back No OH	Back Vinyl	Left
Library Type	Double - Wood	Double - Vinyl	Double - Wood
U-Value	0.490	0.460	0.490
SHGC	0.580	0.570	0.580
Area(sq ft)	26.50	3.00	6.00
Orientation	North	North	West
Overhang Depth	0.0	0.0	1.0
Overhang To Top	0.0	0.0	1.0
Overhang To Bottom	0.0	0.0	4.0
Interior Winter Shading	0.85	0.85	0.85
Interior Summer Shading	0.70	0.70	0.70
Adjacent Winter Shading	None	None	None
Adjacent Summer Shading	None	None	None
Wall Assignment	AGWall 1	AGWall 1	AGWall 1

<b>Window Information:</b>	10		
Name	Left No OH		
Library Type	Double - Wood		
U-Value	0.490		
SHGC	0.580		
Area(sq ft)	6.00		
Orientation	West		
Overhang Depth	0.0		
Overhang To Top	0.0		
Overhang To Bottom	0.0		
Interior Winter Shading	0.85		
Interior Summer Shading	0.70		
Adjacent Winter Shading	None		
Adjacent Summer Shading	None		
Wall Assignment	AGWall 1		

**Window: Double - Wood**

U-Value: 0.490  
 Solar Heat Gain Coefficient: 0.580  
 Note:

**Window: Double - Vinyl**

U-Value: 0.460  
 Solar Heat Gain Coefficient: 0.570  
 Note:

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BUILDING FILE REPORT

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<b>Door Information:</b>	1		
Name		Front	
Opaque Area(sq ft)		20.0	
Library Type	1-3/4 Wd solid core		
Wall Assignment		AGWall 1	
Uo Value		0.329	

**Door: 1-3/4 Wd solid core**

R-Value of Opaque Area: 2.1  
Storm Door: No  
Note:

<b>Roof Information:</b>	1		
Name		Ceiling	
Library Type	R11+16.8 Atc G2		
Gross Area(sq ft)		1610.00	
Color		Dark	
Radiant Barrier		No	
Type(Attic)		Attic	
Uo Value		0.036	

**BUILDING FILE REPORT**

**Ceiling: R11+16.8 Atc G2**

Information From Quick Fill Screen:

Continuous Insulation (R-Value)	16.8
Cavity Insulation (R-Value)	11.0
Cavity Insulation Thickness (in)	3.0
Cavity Insulation Grade	2.0
Gypsum Thickness (in)	0.500
Bottom Chord/Rafter Size(w x h, in)	1.5 x 3.5
Bottom Chord/Rafter Spacing (in o.c.)	16.0
Framing Factor - (default)	0.1412
Ceiling Type	Attic

Note: R-11 batts w/drywall above w/6" blown FG above

Layers	Paths		
	Framing	Cavity	Grade
Inside Air Film	0.610	0.610	0.610
Gyp board	0.450	0.450	0.450
Cavity Ins/Frm	3.750	11.000	0.000
Continuous ins	16.800	16.800	16.800
	0.000	0.000	0.000
	0.000	0.000	0.000
	0.000	0.000	0.000
Outside Air Film	0.610	0.610	0.610
Total R-Value	22.220	29.470	18.470
U-Value	0.045	0.034	0.054
Relative Area	0.141	0.839	0.020
UA	0.006	0.028	0.001

Total Component UA: 0.036

Total Component Area: 1.0

Component Uo: 0.036

**Mechanical Equipment: General**

Number of Mechanical Systems:	3
Heating SetPoint(F):	68.00
Heating Setback Thermostat:	Not Present
Cooling SetPoint(F):	78.00
Cooling Setup Thermostat:	Not Present

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BUILDING FILE REPORT

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**Heat: 71 AFUE Gas 77kProp**

SystemType: Fuel-fired air distribution  
Fuel Type: Propane  
Rated Output Capacity (kBtuh): 76.7  
Seasonal Equipment Efficiency: 71.0 AFUE  
Auxiliary Electric: 1045 Eae  
Note: Trane BLU108F9368  
Location: Conditioned area  
Performance Adjustment: 100  
Percent Load Served: 100  
Number Of Units: 1

**Cooling Equipment: 9 SEER A/C 2.5 ton**

System Type: Air conditioner  
Fuel Type: Electric  
Rated Output Capacity (kBtuh): 33.0  
Seasonal Equipment Efficiency: 9.0 SEER  
Sensible Heat Fraction (SHF): 0.70  
Note:  
Location: Conditioned area  
Performance Adjustment: 100  
Percent Load Served: 100  
Number Of Units: 1

**Water Heating Equipment: 30 gal. 0.60EF Propn**

Water Heater Type: Conventional  
Fuel Type: Propane  
Energy Factor: 0.60  
Recovery Efficiency: 0.76  
Water Tank Size (gallons): 30  
Extra Tank Insulation (R-Value): 0.0  
Note: AO Smith FSG 30 233  
Location: Conditioned area  
Percent Load Served: 100  
Performance Adjustment: 100  
Number Of Units: 1

**BUILDING FILE REPORT**

**Duct System Information:**

Name	Ducts
Heating System	71 AFUE Gas 77kProp
Cooling System	9 SEER A/C 2.5 ton
Supply Area(sq ft)	656.5
Return Area(sq ft)	607.9
# of Registers	5
<i>Duct Leakage</i>	
Qualitative Assessment:	RESNET/HERS default
Total Duct Leakage - Not Applicable	
Supply Duct Leakage - Not Applicable	
Return Duct Leakage - Not Applicable	

<b>Duct Information:</b>	1	2	3
Type	Supply	Return	Supply
Percent Area	80.0	15.0	10.0
R-Value	0.0	0.0	4.0
Location	Conditioned basement	Conditioned basement	Enclosed crawl space

<b>Duct Information:</b>	5	6
Type	Supply	Return
Percent Area	10.0	85.0
R-Value	0.0	0.0
Location	Conditioned space	Conditioned space

**Infiltration and Mechanical Ventilation**

Whole House Infiltration

Measurement Type:	Blower door test
Heating Season Infiltration Value:	1749 CFM @ 50 Pascals
Cooling Season Infiltration Value:	1749 CFM @ 50 Pascals

Mechanical Ventilation for IAQ

Type:	None
Rate(cfm):	0
Sensible Recovery Efficiency(%):	0.00
Total Recovery Efficiency(%):	0.00
Hours per Day:	24.00
Fan Power (watts):	0.00

Ventilation Strategy for Cooling

Cooling Season Ventilation:	Natural Ventilation
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**Lights and Appliances**

Simplified Audit	
Oven/Range Fuel Type:	Electric
Clothes Dryer Fuel Type:	Electric
Percent Fluorescent - Pin-Based:	18.00
Percent Fluorescent - CFL:	18.00
Refrigerator KWh:	775
Dishwasher EF:	0.46
Ceiling Fan CFM / Watt:	0.00

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## COMPONENT CONSUMPTION SUMMARY

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Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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### Walker Residence

#### HEATING SEASON (MMBtu/yr)

Ceilings/Roofs	10.4
Rim/Band Joists	5.5
Above Grade Walls	24.5
Foundation Walls	41.1
Doors	1.3
Windows/Skylights	11.4
Frame Floors	0.1
Crawl Space/Unht Bsmt	0.0
Slab Floors	11.9
Infiltration	21.4
Mechanical Ventilation	0.0
Ducts	25.5
Active Solar	0.0
Sunspace	0.0
Internal Gains	-25.6
<b>Total</b>	<b>127.6</b>

#### COOLING SEASON (MMBtu/yr)

Ceilings/Roofs	0.6
Rim/Band Joists	-0.1
Above Grade Walls	0.2
Foundation Walls	-1.1
Doors	-0.0
Windows/Skylights	2.8
Frame Floors	-0.0
Crawl Space/Unht Bsmt	0.0
Slab Floors	-0.9
Infiltration	-0.3
Mechanical Ventilation	0.0
Ducts	1.5
Active Solar	0.0
Sunspace	0.0
Internal Gains	7.1
Whole House Ventilation	-2.4
<b>Total</b>	<b>7.4</b>

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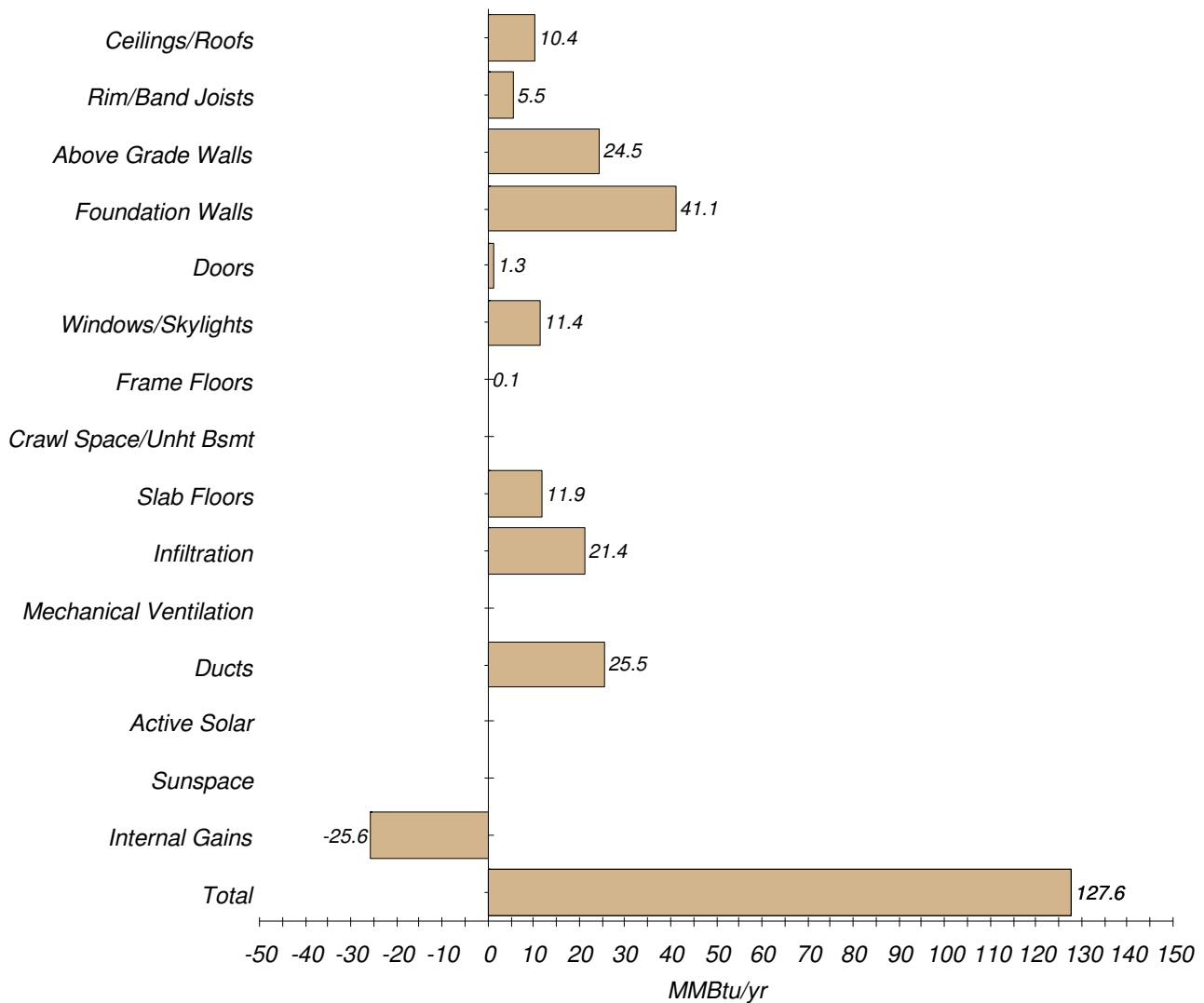
## COMPONENT CONSUMPTION SUMMARY

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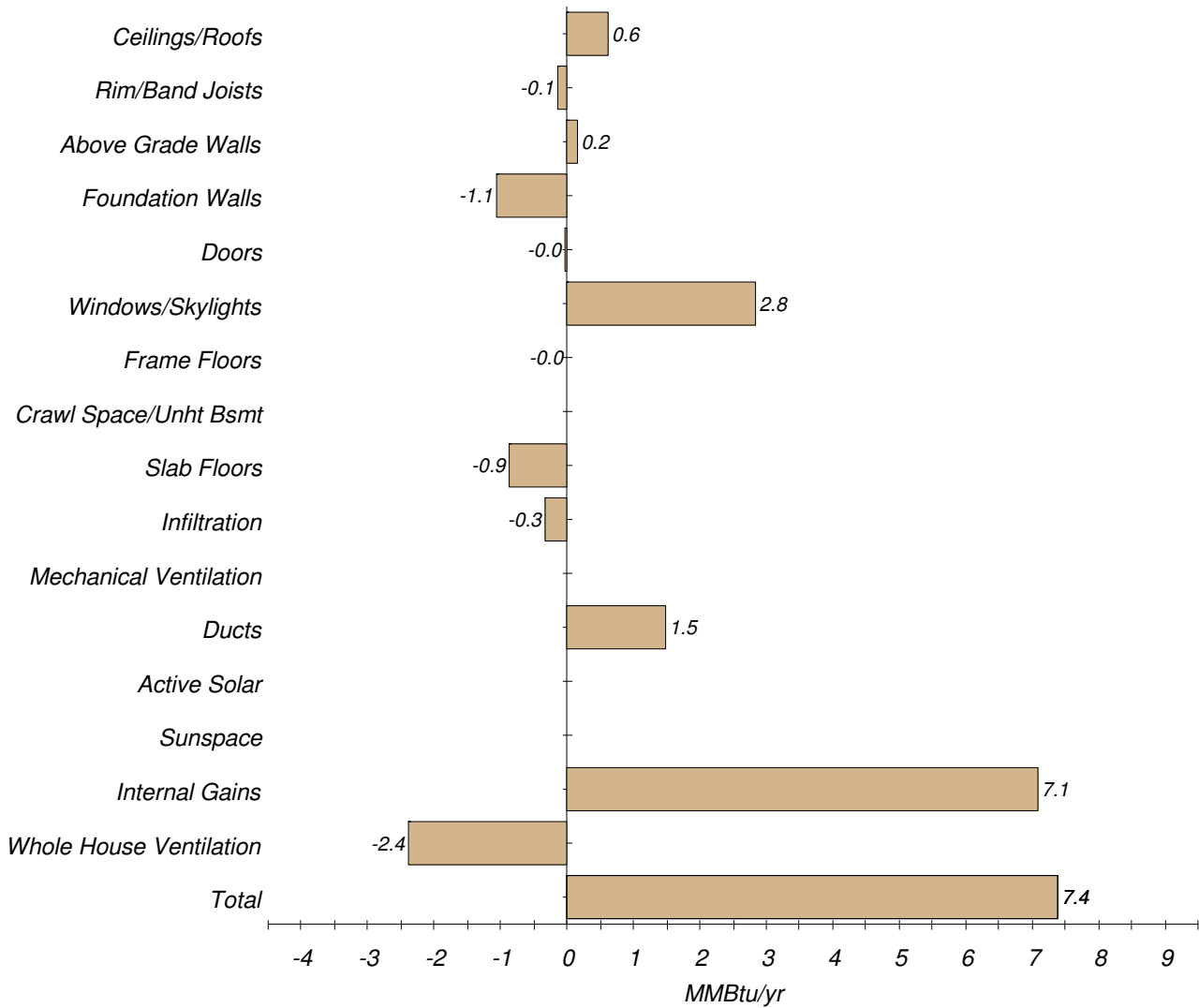
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Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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### Heating Season



**Cooling Season**



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## ENERGY COST AND FEATURE REPORT

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Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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### Walker Residence

#### ANNUAL ENERGY COSTS

Heating	\$	3046
Cooling	\$	146
Water Heating	\$	451
Lights & Appliances	\$	723
Photovoltaics	\$	-0
Service Charges	\$	180
Total	\$	4545
Average Monthly	\$	379

#### ENERGY FEATURES

Ceiling w/Attic:	R11+16.8 Atc G2 U=0.036
Vaulted Ceiling:	None
Above Grade Walls:	R11+3 2x4 16"OC G2 U=0.074
Foundation Walls (Cond):	Uninsulated
Found. Walls (Uncond):	None
Doors:	1-3/4 Wd solid core U=0.329
Windows:	Double - Wood U=0.490
Frame Floors:	R-11 U=0.074
Slab Floors:	Uninsulated U=0.285
Infiltration:	Htg: 1749 Clg: 1749 CFM50
Infil. Measure:	Blower door test
Mechanical Ventilation:	None
Interior Mass:	None
Mech Equip List:	Heating: Fuel-fired air distribution, 76.7 kBtuh, 71.0 AFUE.  Cooling: Air conditioner, 33.0 kBtuh, 9.0 SEER. Water Heating: Conventional, Prop, 0.60 EF.
Programmable Thermostat:	Heat=No; Cool=No
Ducts:	Uninsulated Conditioned basement
Duct Leakage:	RESNET/HERS default
Lights/Appliances:	Defaults

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#### REM/Rate - Residential Energy Analysis and Rating Software v12.4

This information does not constitute any warranty of energy cost or savings.  
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ENERGY COST AND FEATURE REPORT

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Walker Residence

Page 2

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Active Solar:               None  
Photovoltaics:           None  
Sunspace:                 No

Notes:   Where feature level varies in home, the dominant value is shown.

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## EQUIPMENT SIZING SUMMARY

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Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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### Walker Residence

#### HEATING

Calculated Peak Load (kBtu/hr)	62.2
Oversize Factor (%)	100.0

#### HEATING EQUIPMENT CAPACITY (kBtu/hr)

Required	62.2
Specified	76.7

#### COOLING

Calculated Peak Load (kBtu/hr)	28.0
Sensible	24.6
Latent	3.4
Oversize Factor (%)	100.0

#### COOLING EQUIPMENT CAPACITY (kBtu/hr)

Required Total	28.0
Specified Total	33.0

Required Sensible	24.64
Specified Sensible	23.10 d

Required Latent	3.39
Specified Latent	9.90
Excess Latent Capacity	6.51 f

#### Notes:

- d The sensible cooling capacity specified in the building file is less than the required capacity.
- f Generally, about half of any excess latent cooling capacity will be available to meet sensible load.

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**PERFORMANCE SUMMARY**

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Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

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**Walker Residence**

**Annual Load (MMBtu/yr)**

Heating	88.6
Cooling	18.6
Water Heating	14.3

**Annual Consumption (MMBtu/yr)**

Heating	127.6
Cooling	7.4
Water Heating	18.8
Lights & Appliances	34.8
Photovoltaics	-0.0
Total	188.6

**Annual Energy Cost (\$/yr)**

Heating	\$	3046
Cooling	\$	146
Water Heating	\$	451
Lights & Appliances	\$	723
Photovoltaics	\$	-0
Service Charges	\$	180
Total	\$	4545

**Design Loads (kBtu/hr)**

Space Heating	62.2
Space Cooling	28.0

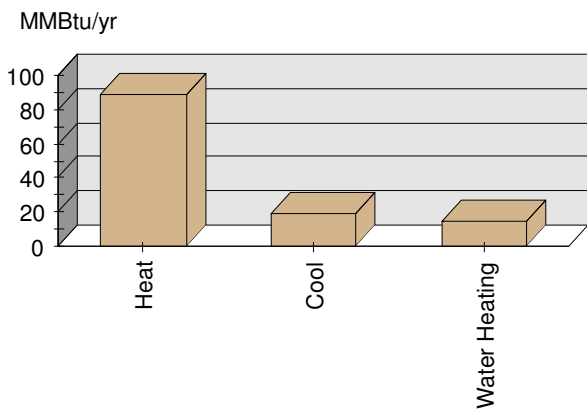
**Utility Rates:**

Electricity:	West Central Elec.
Propane:	Contract Propane

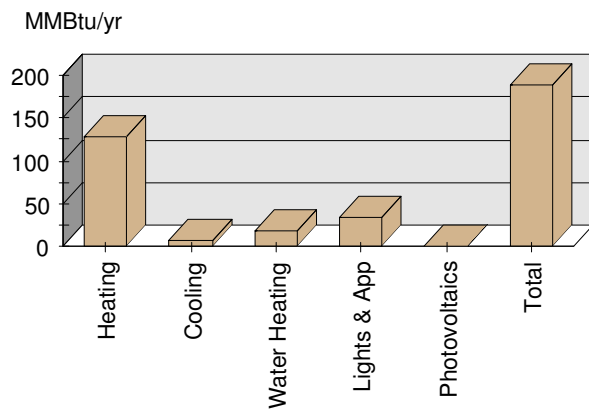
**PERFORMANCE SUMMARY**

Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

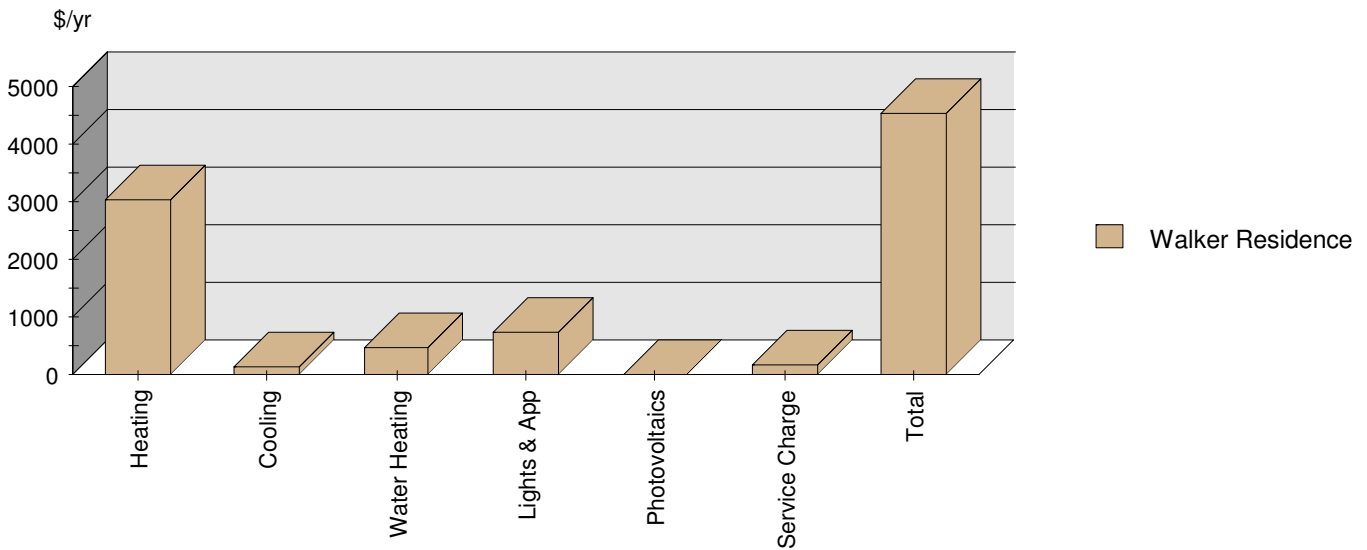
**Annual Load**



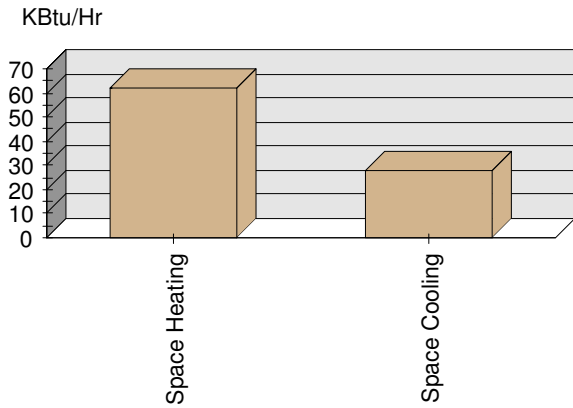
**Annual Consumption**



**Annual Energy Cost**



### Design Loads



### Utility Rates:

Electricity: West Central Elec.  
Propane: Contract Propane



ENERGY STAR HOME REPORT

Date: April 22, 2008 Rating No.: HTLLC20080032
Building Name: Walker Residence Rating Org.: Hathmore Technologies, LLC
Owner's Name: Gary & Bobbi Walker Phone No.: (816) 224-5550
Property: Rater's Name: Sharla Riead
Address: Napoleon, MO 64074 Rater's No.: 0262
Builder's Name: Unknown
Weather Site: Kansas City, MO Rating Type: Verified Condition
File Name: Walker Residence.blg Rating Date: March 18, 2008

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

Table with 3 columns: Category, ENERGY STAR, As Designed. Rows include Heating, Cooling, Water heating, Lighting & Appliances, Total, and HERS Index.

ENERGY STAR Mandatory Requirements

Form with checkboxes for Thermal Bypass Inspection Checklist, Ductwork Requirements, ENERGY STAR Products, and ENERGY STAR Scoring Exceptions.

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

This home DOES NOT MEET the energy efficiency requirements for designation as an EPA ENERGY STAR Qualified Home.

Table with 2 main sections: Pollution Prevented and Energy Cost Savings (\$/year). Rows include Carbon Dioxide, Sulfur Dioxide, Nitrogen Oxides, Heating, Cooling, Water Heating, Lights & Appliances, and Total.

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).



## ENERGY STAR HOME VERIFICATION SUMMARY

Date:	April 22, 2008	Rating No.:	HTLLC20080032
Building Name:	Walker Residence	Rating Org.:	Hathmore Technologies, LLC
Owner's Name:	Gary & Bobbi Walker	Phone No.:	(816) 224-5550
Property:		Rater's Name:	Sharla Riead
Address:	Napoleon, MO 64074	Rater's No.:	0262
Builder's Name:	Unknown		
Weather Site:	Kansas City, MO	Rating Type:	Verified Condition
File Name:	Walker Residence.blg	Rating Date:	March 18, 2008

### Building Information

Conditioned Area (sq ft):	3242	Housing Type:	Single-family detached
Conditioned Volume (cubic ft):	24783	Foundation Type:	More than one type
Insulated Shell Area (sq ft):	6682	HERS Index:	104 ***+
Number of Bedrooms:	3		

### Building Shell

Ceiling w/Attic:	R11+16.8 Atc G2 U=0.036	Window/Wall Ratio:	0.11
Vaulted Ceiling:	None	Window Type:	Double - Wood
Above Grade Walls:	R11+3 2x4 16"OC G2 U=0.074	Window U-Value:	0.490
Found. Walls (Cond):	Uninsulated	Window SHGC:	0.580
Found. Walls (Uncond):	None	Infiltration:	Htg: 1749 Clg: 1749 CFM50
Frame Floors:	R-11 U=0.074	Measured Duct Leakage:	RESNET/HERS default
Slab Floors:	Uninsulated U=0.285	Leakage to Outside:	RESNET/HERS default

### Mechanical Systems

Heating:	Fuel-fired air distribution, 76.7 kBtuh, 71.0 AFUE.
Cooling:	Air conditioner, 33.0 kBtuh, 9.0 SEER.
Water Heating:	Conventional, Prop, 0.60 EF.
Programmable Thermostat:	Heat=No; Cool=No

Note: Where feature level varies in home, the dominant value is shown.

**This home DOES NOT MEET the EPA's requirements for an ENERGY STAR Home.**

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## SUMMARY OF SELECTED REPORTS

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File Name: Walker Residence.blg

Date: April 22, 2008

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### **ENERGY ANALYSIS**

#### **Action Report**

Ranks the building elements with the largest energy consumption on a component basis.

#### **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.

#### **Building File Report**

Echoes the building inputs. Use for verification or documentation.

#### **Component Consumption Summary**

Presents the heating and cooling energy consumption of the building on a component basis.

#### **Energy Cost And Feature Report**

Summarizes the annual heating, cooling, water heating and lights and appliance costs and the major energy design features of the home.

#### **Equipment Sizing Summary**

Provides information about sizing heating and cooling equipment to meet the peak loads and the minimum Sensible Heat Fraction (SHF).

#### **Performance Summary**

Summarizes the annual loads, energy consumption, and energy costs for heating, cooling, water heating, and lights and appliances.

### **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 Home Verification Summary**

This report is an extension of the Energy Star Report. Besides reporting if the building passed the EPA's requirements, it also lists the general building information, building shell features, and mechanical system features.

### **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).