

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33382

Exam Date: 8/20/2015

1. Current Owner:
DAVID W LARSEN 24551 BENHAVEN LN MIDDLETON ID 83644 208-585-2724
2. Accompanied by:
Phone No:
Address:
Relationship to Permit Holder:

3. SOURCE:
GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-33585 is for South of the unnamed stream for 7.7 Acres (split from 63-3226) This right completely overlaps the POU for this permit. It diverted water out of an unnamed stream which was supplied by waste water. This stream was dry.
2. Other water rights with the same point-of-diversion: None, this property has it's own well.

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼NW¼ Sec. 34, Twp 05N, Rge 02W, B.M. CANYON County

Method of Determination: GPS'd at Field Exam and verified through ArcMap

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	02W	34								X									

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	02W	34								5.0									5.0

Total Acres: 5

Method of Determination: Field Exam and aerial imagery

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

x Indicate weir size/pipe as applicable.x Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.x Aerial Photo Attached (required for irrigation of 10+ acres).x Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0057774	Unknown	5	Unknown	Unknown	Unknown

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Pressure gage						

2. Measurements:

E. FLOW CALCULATIONS

Measured Method: System pressure of 69 PSI was taken at the x Additional Computation Sheets Attached
 spigot next to the well

The theoretical calculation shows that the 5 hp pump could provide 0.09 cfs. (System capacity)

Heat pump is capable of using 17gpm / 448.83 = 0.04 cfs

According to administrative memo 2 domestic rate should normally be 0.04 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 5 \times 4.5 = 22.5$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.09 \times 260 \times 1.9835 = 46.4$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 22.5$$

2. Volume Calculations for Other Uses:

According to Administrative memo 22 we are to use 0.6 afa for domestic use when irrigation is separated.
 According to heat pump water use memo from Michele Edl it will use approximately 0.09 af per year

$$0.6 + 0.09 = 0.69 \text{ af rounded to } 0.7 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS:

The domestic use for this right is being put through a heat exchange for the house and it is a flow through system. The applicant stated that it discharges very little water after the heater has run for any length of time. The permit allowed for 7 acres of irrigation. However, the Statement of completion of beneficial use only listed 5 acres of irrigation. I was able to verify this using satellite imagery and visual inspection. The applicant has established a large lawn around the house. He has rows of pine trees with drip lines ran in the field South of the house and the shed and West of the road. He has rows of trees planted along the West side of the road. There are grape vines along the fence line and a large garden to the west of the house. The pond that was fed from the unnamed stream had receded to the other side of the property line. He also had a field that he used to grow hay. This right is a supplemental right to 63-33585. The surface water source is wastewater and is very unreliable. The property owner explained that they barely get any water through the stream and it usually comes at the end of the irrigation season. He showed us the pump that was used in the past to divert the water. However, he has been unable to divert water out of the stream this year because the water supply has not been available. He has a 10,000 Watt 16 HP generator to run a pump to divert water when it becomes available. We were able to locate the old pump that used to pump this irrigation water. The applicant has surface water shares which are used to irrigate property NW of the ditch. They are used to supplement WR 63-33591. Those shares are not delivered to this place of use.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/01 to 11/15	0.09 CFS	22.5 AF
DOMESTIC	01/01 to 12/31	0.04 CFS	0.7 AF
<u>Totals:</u>		0.09 CFS	23.2 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION: Clay Webster Water Resource Agent

Field Examiner's Name Clay Webster Date 7/26/2016

Reviewer _____ Date _____

SCANNED

AUG 02 2016

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-33382
 Examiner: Clay
 Date of Field Exam: 5/15/2015

P/D No.:	Option 1	OPTION 2	OPTION 3	
PUMP HORSEPOWER	1.5	3	5	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	170	170	170	
DISCHARGE PRESSURE	69	69	69	
FRICTION	0	0	0	
RATE OF FLOW (cfs)	0.03	0.06	0.09	AVE
(gpm)	12.6	25.2	42.0	0.06 26.58

The above calculates the formula =

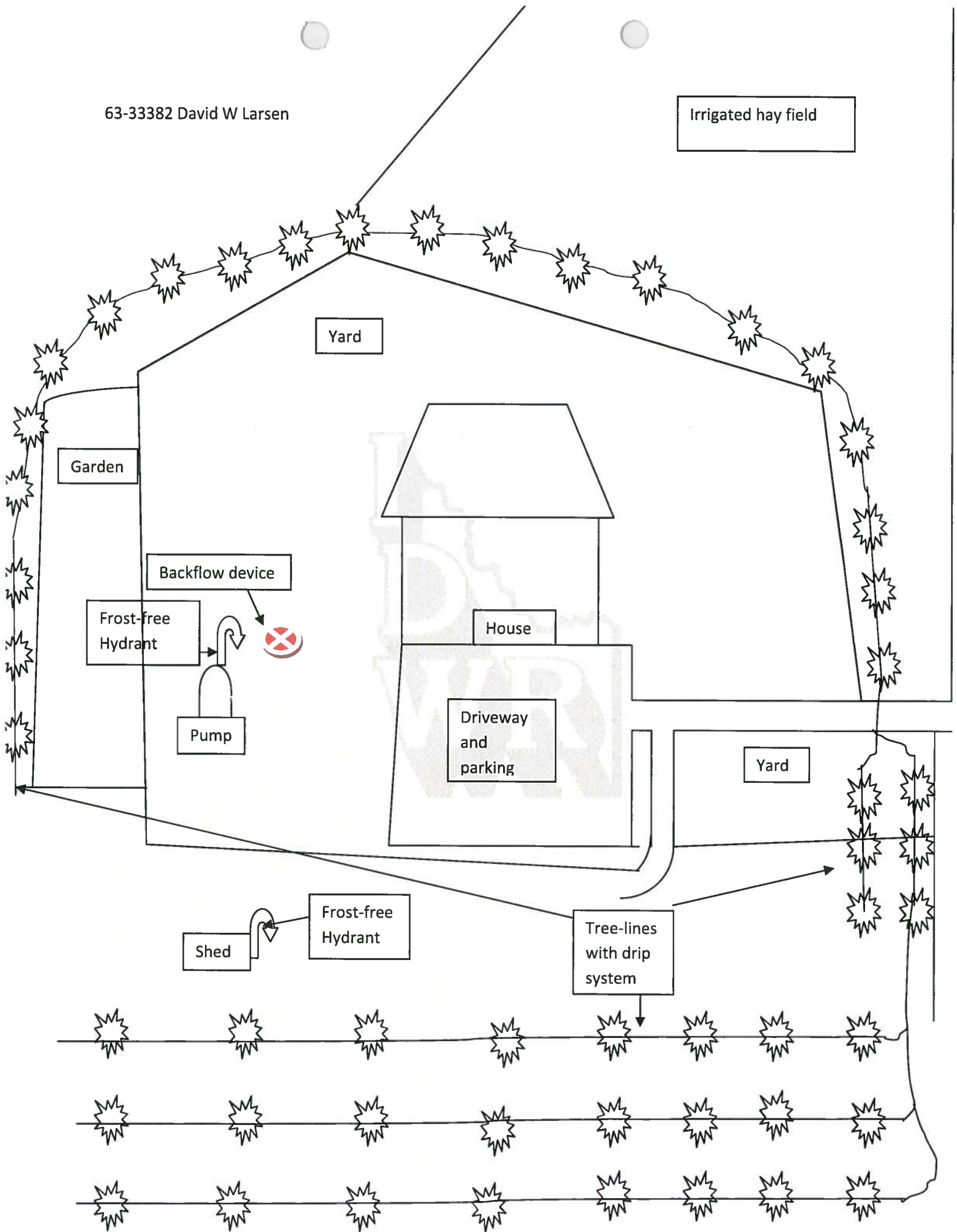
$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

Applicant states that a 5 hp Pump was installed. The well depth is 477' - 137'(static water level) = 340/2 = 170' pumping level (per field examiners handbook) with a 5 hp pump rate of flow is 0.09 cfs . System pressure was 69 psi as measured at spigot next to well

Irrigated hay field





63-33382



IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

859043

1. WELL TAG NO. D 0057774

Drilling Permit No. _____

Water right or injection well # _____

2. OWNER: Tradition Custom Homes

Name _____

Address 8454 Brookhaven Pl.City Middleton State Id. Zip 83644

3. WELL LOCATION:

Twp. 5 North ☒ or South ☐ Rge. 2 East ☐ or West ☒Sec. 34 1/4 SE 1/4 NW 1/4Gov't Lot _____ County CanyonLat. 43 ° 43:719 (Deg. and Decimal minutes)Long. 116 ° 33:817 (Deg. and Decimal minutes)Address of Well Site 8801 Ruston Rd.City Middleton

(Give at least name of road + distance to road or landmark)

Lot _____ Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
<u>3/8 Bentonite</u>	<u>0</u>	<u>40</u>	<u>29 bags</u>	<u>dry pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
<u>8 1/2</u>	<u>469</u>	<u>250</u>	<u>Steel</u>		☐	☐	☒
					☐	☐	☐
					☐	☐	☐
					☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 469'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____Manufactured screen ☒ Y ☐ N Type JohnsonMethod of installation Wash DN Valve Set with Rig

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>467</u>	<u>477</u>	<u>18</u>	<u>6"</u>	<u>Telec</u>	<u>S-S</u>	
<u>456</u>	<u>476</u>	<u>10</u>		<u>4"</u>	<u>PVC Flush thread</u>	
<u>446</u>	<u>456</u>	<u>10</u>		<u>4"</u>	<u>PVC Flush thread</u>	

Length of Headpipe _____ Length of Tailpipe 0Packer ☒ Y ☐ N Type 4x8 / 5x8 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 256 Static water level (ft) 137'

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port 8" Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>440</u>	<u>250</u>	<u>4 hrs.</u>
<u>360</u>	<u>100</u>	<u>3 hrs.</u>

Test method:

Pump ☐ Boiler ☐ Air ☒ Flowing artesian ☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>12</u>	<u>0</u>	<u>4</u>	<u>Top Soil</u>		☒
	<u>4</u>	<u>8</u>	<u>Hard Pan</u>		☒
	<u>8</u>	<u>13</u>	<u>Large Sand</u>		☒
	<u>13</u>	<u>22</u>	<u>Shale & Clay</u>		☒
	<u>22</u>	<u>26</u>	<u>Brn Clay</u>		☒
<u>8</u>	<u>26</u>	<u>52</u>	<u>Sand & Clay</u>		☒
	<u>52</u>	<u>126</u>	<u>Gravel mixed w/ clay</u>		☒
	<u>126</u>	<u>131</u>	<u>Sandy Clay</u>		☒
	<u>131</u>	<u>137</u>	<u>Hard Brn Clay</u>		☒
	<u>137</u>	<u>149</u>	<u>Sandy Clay</u>		☒
	<u>149</u>	<u>157</u>	<u>Hard Brn Clay</u>		☒
	<u>157</u>	<u>178</u>	<u>Sandy Clay</u>		☒
	<u>178</u>	<u>204</u>	<u>Brn Clay</u>		☒
	<u>204</u>	<u>221</u>	<u>Sandy Clay</u>		☒
	<u>221</u>	<u>256</u>	<u>Hard Brn Clay</u>		☒
	<u>256</u>	<u>259</u>	<u>Fine Sand</u>	☒	
	<u>259</u>	<u>282</u>	<u>Brn Clay</u>		☒
	<u>282</u>	<u>286</u>	<u>Med Sand 60 gpm</u>	☒	
	<u>286</u>	<u>288</u>	<u>Brn Clay</u>		☒
	<u>288</u>	<u>445</u>	<u>Heavy Sand</u>	☒	
	<u>445</u>	<u>467</u>	<u>Sandy Clay</u>	☒	
	<u>467</u>	<u>469</u>	<u>Brn Clay</u>		☒
	<u>469</u>	<u>477</u>	<u>Fine Med Sand</u>	☒	

RECEIVED

OCT 13 2010

WATER RESOURCES
WESTERN REGIONCompleted Depth (Measurable): 477'Date Started: 5/20/10 Date Completed: 10/4/10

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Precision Well Drilling No. 522*Principal Driller Jeff Plummer Date 10/8/10

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.



Well Head



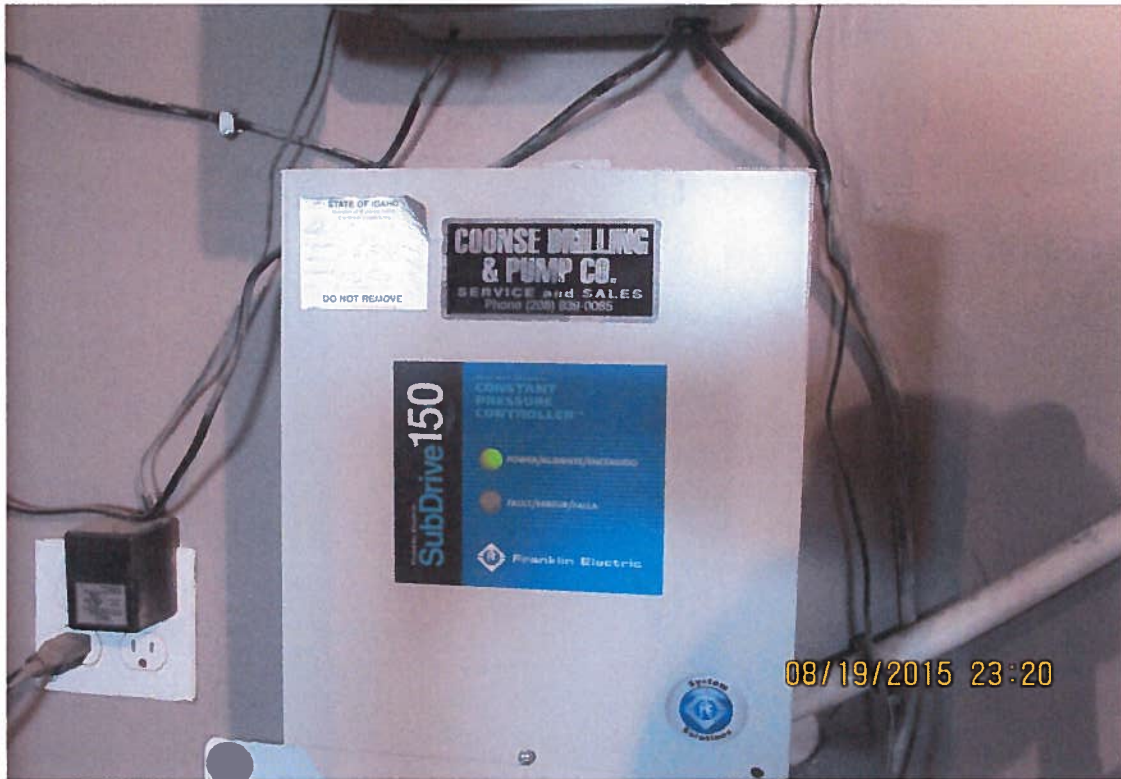
Backflow Device



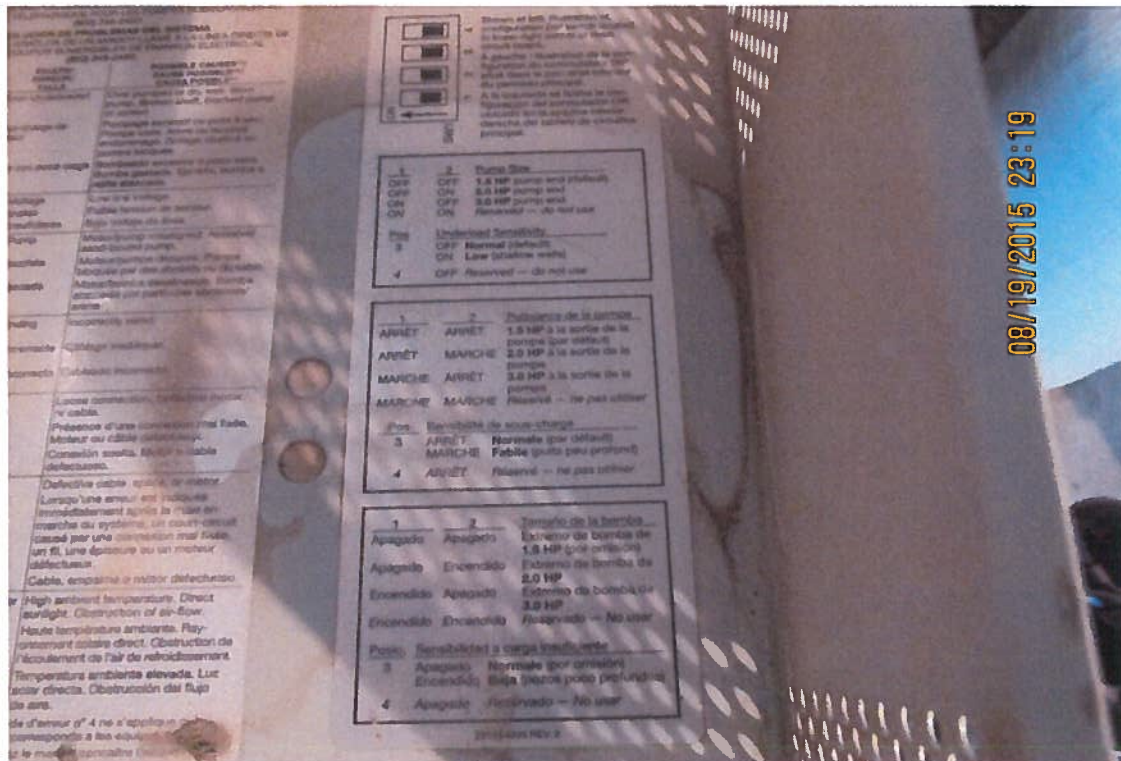
Well Tag



69 PSI at spigot by well



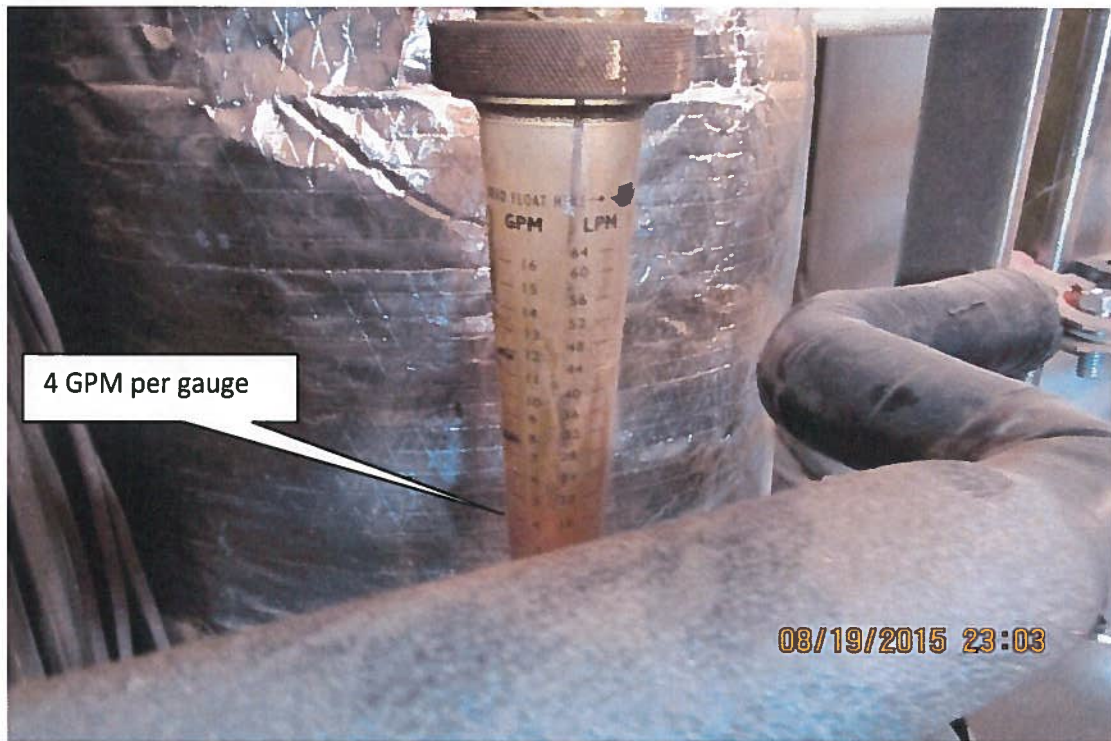
Well control box in garage



Inside of well control box



Heat exchange unit in garage



Pitot Tube on heat exchange 4 GPM



16 HP generator for running surface water pump



Irrigation



Irrigation



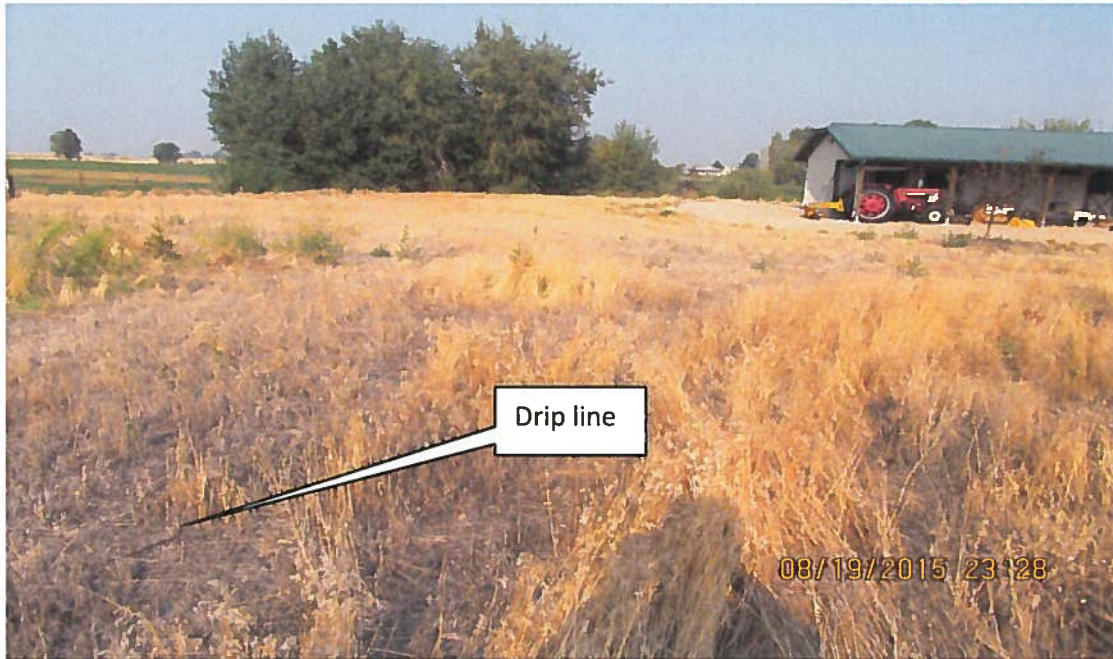
Irrigation



Tree Lines with Drip System



Tree Lines with Drip System



Tree Lines with Drip System



Tree Lines with Drip System



View from field South of Unnamed Stream Fence line with grapevines





Pump for dry unnamed stream (wastewater source is only available for short period at end of irrigation season)



Control valve in dry unnamed stream

MEMORANDUM

Date: September 28, 2015
To: Water Right File 63-33382
From: Michele Edl
Re: heat pump water use

Introduction

Water right permit 63-33382 authorized irrigation and domestic use. The field examiner found that a heat pump had been installed on the domestic water system. I have been asked to assess the water used by that heat pump. The examiner provided some important information in the attached email. This memo summarizes my calculations and recommendations for the heating and cooling portion of the domestic use.

Description

The heat pump is installed in a 3800 square foot home constructed in 2010 and located near Middleton, Idaho. The heat pump unit is a Carrier geothermal heat pump in an open loop configuration. The source water is ground water at a temperature of 60 °F. It is pumped from a well and run through the home's domestic water system. A small amount of water from the heat pump is discharged to the lawn.

Method

I have a spreadsheet which can be used to estimate the water use by a heat pump. The original spreadsheet was developed by Dr. Steven Kavanaugh¹ and was provided to me in December 2012. I have adapted it for IDWR use and applied to this situation.

The spreadsheet requires several parameters to calculate the annual volume of water. The parameters for heating are:

1. Floor Area
2. HeatSqFt (the design value or an estimate of heating required per 1000 ft² of floor area)
3. HeatHours
4. GPMpTonH (gpm per ton of heating)

The parameters for cooling are similar:

1. Floor Area
2. CoolSqFt (the design value or an estimate of cooling required per 1000 ft² of floor area)
3. CoolHours
4. GPMpTonC (gpm per ton of cooling)

A rough estimate of heating and cooling water use can be made using the adapted Kavanaugh spreadsheet and its imbedded tables alone. But if any additional information about the heat pump is available, the estimate can be fine-tuned.

¹ Steve Kavanaugh, Ph.D. has recently retired as professor of Mechanical Engineering at the University of Alabama. He has been involved with ground source (a.k.a. geothermal) heat pump research and development for more than 20 years. He is author of two books on the subject and has published several articles in the American Society of Heating, Ventilating, and Air-Conditioning Engineers (ASHRAE) Transactions and Journal. He is a fellow in both the American Society of Mechanical Engineers and ASHRAE.

The field examiner provided a photo of the heat pump nameplate. I queried the manufacturer's website and obtained the specifications and operation constraints for this particular heat pump. See the attached excerpts from the specifications sheets.

Although the home had a garage that may not be climate controlled, I assumed that the entire 3800 square feet of the home were both heated and cooled.

I assumed also assumed that the flow rate would be set and held constant for both heating and cooling modes.

Results

At peak demand, this heat pump unit can reject a maximum of 93.1 kBTUh in cooling mode and extract a maximum of 63.0 kBTUh in heating mode when the water is 60 °F and flowing at the unit's capacity of 17 gpm.

Heating mode requires a higher rate of water (3.24 gpm/ton) than cooling mode (2.19 gpm/ton).

Inputting the maximum optimal rate for this type of geothermal heat pump (3 GPMpTonH and 3 GPMpTonC), yields an annual volume of 0.094 AF. See the attached spreadsheet.

Recommendations

This heat pump is capable of utilizing 17 gpm (~0.038 cfs) of 60 °F water to cool or to heat the home.

At that flow rate, the heat pump will use approximately 0.09 AF per year.

Edl, Michele

From: Webster, Clay
Sent: Friday, August 21, 2015 9:08 AM
To: Edl, Michele
Subject: Cavanaugh Spreadsheet on 63-33382
Attachments: Photos for heat exchange unit.docx

Michele,

Could I get you to run this spreadsheet for me? Dan and I went out on a field exam yesterday and the home has a heat exchange unit. I was told that you are the one that normally does the calculations for those units.

The home is 3,800 Sq ft

The indoor temp was kept at 70 degrees

The unit had a flow of 4GPM

The water temp at the well was 60 degrees.

The pressure was 61 PSI at the well.

Let me know if you need anything else. Thanks

Clay

63-33382 Photos for heat exchange unit



WARRANTY PROFILE & REPORT CARD

DATE COMPLETE: 5/14/2009 Line Tested: 1
 SERIAL NUMBER: 180SV72810 MODEL NUMBER PL: YD4673JCK001

Components Confirmed

Tested By: Christian Delgado	Component Name	Part Model #	Part Serial #
	COMPRESSOR	3480120401	0001 5715
	COIL/COND	6380001940	011405
	IND COIL	6380001940	6380001940
	AIR COIL	6150181955	
	TXV	3380018902	
	BLOWER MOTOR	1450017N17	
	TRANSFORMER	1600002902	
	WIRING DIAGRAM	9600005N11	
	XUM	9780468N01	
	LOGO	9780003H12	

Integrity & Helium Leak

Tested By: Dahn Pham	Over All Result	PASS
Circuit 1 Water Decay Amount	-0.1 PSI	
Circuit 1 Water Pressure	63.7 PSI	
Circuit 2 Water Decay Amount	1.05 PSI	
Circuit 2 Water Pressure	111.7 PSI	
Ref Circuit 1 Decay Amount	0.2 PSI	
Ref Circuit 1 Fill Pressure	462.7 PSI	

Evacuation & Charge

Tested By: Samantha Diaz	Over All Result	PASS
Charge Weight	156 oz	
Final Vac Level	148.93 Micro	

Unit Performance Test

Tested By: Hugo Martinez	Over All Result	PASS
CIRCUIT 1 WATER FLOW	PASS	
UNIT COOLING	PASS	
UNIT HEATING	PASS	

Final Leak Check

Tested By: Martha Munoz	Over All Result	PASS
No leak detected		

08/19/2015 23:03

EMISSION CONTROL INFO
 Changing Sailing General Power B
 This equipment meets U.S. EPA Emission
 Equipment Family Name: BC35P001
 See also: 1 2 3 4 5 6 7





DIMENSIONS — VERTICAL DOWNFLOW GT-PX (50YD) SERIES

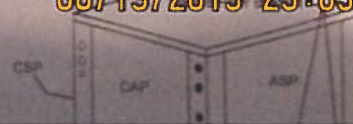
Vertical Downflow Model	Overall Cabinet			Water Connections					Loop Water PT		Electrical Knockouts			Discharge Connection					Return Connection			
				1	2	3	4	5			J	K	L	dust large number in 6 1/2 in. or 7 1/2 in.					dust large number in 6 1/2 in. or 7 1/2 in.			
	A	B	C	G	H	I	J	K	Loop Water PT	HWG PT	1/2" cond. Low Voltage	1/2" cond. Ext. Pump	3/4" cond. Power Supply	M	N	O	P	Q	R	S	T	U
	Width	Depth	Height	In	Out	HWG In	HWG Out	Cond. outside						(LH dim)	Supply Width	Supply Depth	(RH dim)		Return Depth	Return Height		
626	34.4	25.6	42.2	2.1	15.5	13.9	18.9	3.0	1" Servel	1" Servel	3.0	6.1	6.6	6.7	8.4	9.9	8.1	1.5	1.7	22.3	28.2	21.2
	36.6	26.1	131.4	5.2	25.4	25.2	47.9	9.2			9.2	15.6	21.9	17.1	21.4	27.3	23.0	3.9	4.2	36.4	86.4	63.9
638	25.4	30.6	54.5	3.4	10.8	15.6	18.0	3.6	1" Servel	1" Servel	3.0	6.1	6.6	7.4	9.0	13.1	12.6	1.6	1.7	27.2	30.2	23.2
	26.3	77.8	136.4	8.6	27.5	30.7	47.9	9.2			9.2	15.6	21.9	18.7	22.9	33.3	32.7	4.1	4.2	66.1	86.4	59.0
649	25.4	30.6	58.5	3.4	10.8	15.6	18.0	3.6	1" Servel	1" Servel	3.0	6.1	6.6	7.4	9.0	13.1	12.6	1.6	1.7	27.2	30.2	23.2
	26.3	77.8	146.8	8.6	27.5	30.7	47.9	9.2			9.2	15.6	21.9	18.7	22.9	33.3	32.7	4.1	4.2	66.1	78.6	59.0
664	25.4	30.6	62.5	3.4	10.8	15.6	18.0	3.6	1" Servel	1" Servel	3.0	6.1	6.6	7.4	9.0	13.1	12.6	1.6	1.7	27.2	34.2	23.2
	26.3	77.9	153.9	8.6	27.5	30.7	47.9	9.2			9.2	15.6	21.9	18.7	22.9	33.3	32.7	4.1	4.2	69.1	86.8	59.0
672	25.4	30.6	62.5	3.4	10.8	15.6	18.0	3.6	1" Servel	1" Servel	3.0	6.1	6.6	7.4	9.0	13.1	12.6	1.6	1.7	27.2	34.2	23.2
	26.3	77.9	153.9	8.6	27.5	30.7	47.9	9.2			9.2	15.6	21.9	18.7	22.9	33.3	32.7	4.1	4.2	69.1	86.8	59.0

Condensate is 3/4" PUC female glue socket and is detachable from front to side.
Unit shipped with dislure dust collar/filter sock depending from unit 3" (7.6cm) and is suitable for dust connection.
Downflow unit does not have discharge flange, and is rated for zero clearance installation.

Legend

CAP=Control Access Panel
CSP=Compressor Service Panel
BSP=Blower Service Panel
ASP=Alternate Service Panel

08/19/2015 23:05



ELECTRICAL - LINE VOLTAGE

▲ WARNING! ▲

WARNING! To avoid possible injury or death due to electrical shock, open the power supply disconnect switch and secure it in an open position during installation.

▲ CAUTION! ▲

CAUTION! Use only copper conductors for field installed electrical wiring. Unit terminals are not designed to accept other types of conductors.

Table 4a: GT-PX (50YD) Series Electrical Data

As GT-PX Units with ECM Fan Motor										GT-PX Units (ECM) Standard				GT-PX Units (ECM) with Whole House Dehumidification					
Model	Compressor			HWD Pump FLA	Ext. Load Pump FLA	Fan Motor FLA	Total Unit FLA	Min. Circuit Amps	Max. Fuse HACR	Supply Wire		W.H.D. Pump FLA	Total Unit FLA	Min. Circuit Amps	Max. Fuse HACR	Supply Wire			
	RLA	LRA	Qtr							Min AWG	Max Ft (m)					Min AWG	Max Ft (m)		
520	15.5	50.0	1	5.40	4.0	4.5	19.0	21.0	20	10	80 (25.5)	0.8	19.8	22.4	30	10	80 (25.5)		
528	18.9	62.0	1	5.80	4.0	4.5	25.4	28.6	45	10	65 (19.1)	0.8	20.3	30.4	45	8	87 (26.5)		
549	21.2	66.0	1	5.40	4.0	7.0	32.6	37.5	50	8	78 (23.8)	1.07	33.7	39.0	60	0	76 (23.1)		
554	26.6	118.0	1	5.40	4.0	7.0	37.0	43.4	60	6	108 (32.9)	1.07	38.1	44.5	70	6	108 (32.9)		
572	27.2	120.0	1	5.40	4.0	7.0	38.6	45.4	70	60	103 (31.4)	1.07	39.6	46.4	70	0	101 (30.8)		

Rated Voltage of 208-230/60Hz

HACR circuit breaker in USA only.

Wire length based on one way measurement with 2% voltage drop.

Min/Max Voltage of 197/254

All fuses Class RK-1

Wire size based on 60°C copper conductor and Maximum Circuit Ampacity

Table 4b: GT-PG (50YE) Series Electrical Data

Standard GT-PG Unit										GT-PG Unit with Whole House Dehumidification							
Model	Compressor			HWD Pump FLA	Ext. Load Pump FLA	Fan Motor FLA	Total Unit FLA	Min. Circuit Amps	Max. Fuse HACR	Supply Wire		W.H.D. Pump FLA	Total Unit FLA	Min. Circuit Amps	Max. Fuse HACR	Supply Wire	
	RLA	LRA	QTY							Min AWG	Max Ft (m)					Min AWG	Max Ft (m)

GT-PX (50YD) SERIES ECM BLOWER PERFORMANCE DATA

Model	Max CFM (at 1/2")	Fan Motor (hp)	Tap Setting	Cooling Mode			Dehumid Mode			Heating Mode			Heat/Heat Units Only	
				Stg 1	Stg 2	Fan	Stg 1	Stg 2	Fan	Stg 1	Stg 2	Fan	AUX CFM	Aux/ Entire Mode
008	0.50	1/2	4	810	900	475	630	740	475	950	1050	475	4	1000
	0.50	1/2	3	725	850	425	560	660	425	825	950	425	3	950
	0.50	1/2	2	650	730	375	490	570	375	710	800	375	2	800
	0.50	1/2	1	580	610	300				600	660	300	1	600
016	0.50	1/2	4	1120	1400	700	870	1090	700	1100	1400	700	4	1400
	0.50	1/2	3	1000	1250	630	780	980	630	1000	1250	630	3	1300
	0.50	1/2	2	880	1080	540	670	840	540	880	1080	540	2	1200
	0.50	1/2	1	730	900	450				730	900	450	1	1100
024	0.75	1	4	1450	1750	870	1140	1350	870	1360	1650	870	4	1650
	0.75	1	3	1300	1550	780	1020	1210	780	1400	1600	780	3	1550
	0.75	1	2	1120	1330	670	870	1040	670	1200	1430	670	2	1430
	0.75	1	1	940	1120	560				1010	1200	560	1	1300
032	0.75	1	4	1670	2050	1020	1300	1520	1020	1600	2000	1020	4	2000
	0.75	1	3	1500	1820	900	1160	1430	900	1650	2000	900	3	1900
	0.75	1	2	1380	1580	790	1000	1230	790	1430	1750	790	2	1750
	0.75	1	1	1180	1330	650				1200	1470	650	1	1470
040	0.75	1	4	1830	2190	1050	1270	1600	1050	1680	2030	1050	4	2030
	0.75	1	3	1630	1950	960	1170	1520	960	1600	2100	960	3	2100
	0.75	1	2	1490	1630	910	1150	1430	910	1480	1850	910	2	1850
	0.75	1	1	1320	1700	800				1340	1620	800	1	1620

* Values based on tap setting 2.
 * Cooling capacity is based on outdoor air only. The CFM and ton at the bottom of the heating table are for AUX settings.
 * Heating capacity is based on outdoor air only. The CFM and ton at the bottom of the heating table are for AUX settings.
 * The CFM and ton at the bottom of the heating table are for AUX settings.
 * The CFM and ton at the bottom of the heating table are for AUX settings.

08/19/2015 23:08

UNIT OPERATING CONDITIONS

Table 11: GT-PX Series Typical Unit Operating Pressures and Temperatures: Continued

GT-PX Series	Water Flow (gpm)	Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
		Evaporator Pressure (PSIG)	Condenser Pressure (PSIG)	Superheat (°F)	Subcool (°F)	Refr. Temp (°F)	Air Temp (°F)	Evaporator Pressure (PSIG)	Condenser Pressure (PSIG)	Superheat (°F)	Subcool (°F)	Refr. Temp (°F)	Air Temp (°F)
30	1.0	110-107	190-186	21-20	19-18	18.0-18.0	17-20	180-176	300-297	10-10	5-14	6-10	19-20
	2.0	110-108	190-187	19-18	19-18	17.5-17.5	17-20	180-176	300-297	10-10	5-14	6-10	19-20
	3.0	110-107	190-186	20-19	19-17	17.4	17-20	180-176	300-297	10-10	5-14	6-10	19-20
40	1.0	109-106	200-198	19-17	18-16	18.0-18.0	17-20	180-176	300-298	10-10	5-14	6-10	19-20
	2.0	109-106	200-198	21-19	17-16	17.5-17.5	17-20	180-176	300-298	10-10	5-14	6-10	19-20
	3.0	109-106	200-198	20-17	17-17	17.0-17.0	17-20	180-176	300-298	10-10	5-14	6-10	19-20
50	1.0	108-107	210-205	19-18	18-17	17.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	2.0	108-107	210-205	19-17	18-17	16.5-16.5	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	3.0	108-107	210-205	19-16	17-16	16.0-16.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20
60	1.0	108-107	210-205	19-18	18-17	17.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	2.0	108-107	210-205	19-17	18-17	16.5-16.5	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	3.0	108-107	210-205	19-16	17-16	16.0-16.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20
70	1.0	108-107	210-205	19-18	18-17	17.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	2.0	108-107	210-205	19-17	18-17	16.5-16.5	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	3.0	108-107	210-205	19-16	17-16	16.0-16.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20

GT-PX Series	Water Flow (gpm)	Full Load Cooling - without HWG active						Full Load Heating - without HWG active					
		Evaporator Pressure (PSIG)	Condenser Pressure (PSIG)	Superheat (°F)	Subcool (°F)	Refr. Temp (°F)	Air Temp (°F)	Evaporator Pressure (PSIG)	Condenser Pressure (PSIG)	Superheat (°F)	Subcool (°F)	Refr. Temp (°F)	Air Temp (°F)
80	1.0	110-108	190-187	20-18	19-18	18.0-18.0	17-20	180-176	300-297	10-10	5-14	6-10	19-20
	2.0	110-108	190-187	20-17	19-17	17.5-17.5	17-20	180-176	300-297	10-10	5-14	6-10	19-20
	3.0	110-108	190-187	20-16	18-16	17.0-17.0	17-20	180-176	300-297	10-10	5-14	6-10	19-20
90	1.0	109-107	200-198	19-17	18-17	18.0-18.0	17-20	180-176	300-297	10-10	5-14	6-10	19-20
	2.0	109-107	200-198	21-16	17-16	17.5-17.5	17-20	180-176	300-297	10-10	5-14	6-10	19-20
	3.0	109-107	200-198	20-15	17-15	17.0-17.0	17-20	180-176	300-297	10-10	5-14	6-10	19-20
100	1.0	108-107	210-205	19-18	18-17	17.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	2.0	108-107	210-205	19-17	18-17	16.5-16.5	17-20	179-175	300-297	10-10	5-14	6-10	19-20
	3.0	108-107	210-205	19-16	17-16	16.0-16.0	17-20	179-175	300-297	10-10	5-14	6-10	19-20

Table 12: GT-PX Series

08/19/2015 23:10

ULTIMATE Heating & Air

HVAC SYSTEM START-UP

FORM LARSH-D

Customer/Builder Name Garcia Dave Barton

Lot/Block/Subdivision

Physical Address 24651 Benbow Lane

Energy Star Home Y / N

Duct Blast Performed By

FILTER SIZE(S)

X X
X X

Air Balance Performed By

EQUIPMENT

o Furnace

Make Carr

Model 5070V0032V301 Serial 1809V76910

o Condenser

Make

Model

Serial

o Evaporator Coil

Make

Model

Serial

o Thermostat

Make Honeywell

Model TW220P3004

Serial 14124

o Zoning

Make

Model

Serial

o IAQ

Make

Model

Serial

Additional Equip

Make Honeywell

Model TA5330B1000

Serial 14131

Additional Equip

Make

Model

Serial

INSTALLATION CHECKLIST

1. Electrical Complete
2. Wall Penetrations Sealed
3. New Duct Connections Sealed
4. Checked Air Flow/Noise
5. Thermostat Operational
6. Venting Complete
7. Condensate Checked For Leaks
8. Pump Tested
9. Fuses Correct
10. Line-set Welded And Wrapped
11. Work Area Cleaned Up
12. Filter Changed If Needed

HEATING COOLING ZONING IAQ

HOMEOWNER INSTRUCTION

(techs initials)

Thermostat

Filter

Equipment

Warranty

USP

SYSTEM OPERATION SPECIFICS

o Blower

Fan Speed Settings

Heating

Cooling

Fan Only

o Heating:

Gas Pressures

Low

High

Temp Rise

S/A

R/A

Delta T

o Cooling:

High Side

PSI

Line Temp

Subcooling

Low Side

PSI

Line Temp

Superheat

Temp Drop

S/A

R/A

Delta T

Expansion Device

TXV

ID Wet Bulb

OD Dry Bulb

Piston Matched w/ outdoor unit? Y / N

Y

N

Line set Length

Microns

Zoning:

Zone 1

Zone 2

Zone 3

Zone 4

Tstat

Tstat

Tstat

Tstat

Airflow H / C / F

Airflow H / C / F

Airflow H / C / F

Airflow H / C / F

Adjusted Bleed By/Bypass Y / N

(print)

Date 10-15-14

ing start-up performed by

Kris Boyle

(print)

Date

ing start-up performed by

(print)

Date

Zoning start-up performed by

Ultimate Heating and Air, 1530 W. Hubbard Rd, Meridian, Id. 83642 Ph 208-321-8663 / Fax 208-321-9489

08/19/2015 23:11

243

WARRANTY PROFILE & REPORT CARD

DATE COMPLETE 8/14/2009 Line Tested 1
 SERIAL NUMBER 1809/78510 MODEL NUMBER YKXPT2JCK-V21

Components Confirmed

Tested By Christian Delano

Over All Result

Component Name	Part Model #	Part Serial #
COMPRESSOR	3480123801	000812121
COAX COIL	6380003805	001800
HVAC COAX	6380003805	6380003805
AIR COIL	6180161805	
TXV	3380015802	
BLOWER MOTOR	1480017817	
TRANSFORMER	1580000802	
WIRING DIAGRAM	9680005801	
ICM	9780048001	
LOGO	9780003812	

Integrity & Helium Leak

Tested By Oahn Pham

Over All Result

PASS

Circuit 1 Water Decay Amount	0.1 PSI
Circuit 1 Water Pressure	83.7 PSI
Circuit 2 Water Decay Amount	1.05 PSI
Circuit 2 Water Pressure	111.7 PSI
Ref Circuit 1 Decay Amount	0.2 PSI
Ref Circuit 1 Fill Pressure	482.7 PSI

Evacuation & Charge

Tested By Samantha Diaz

Over All Result

PASS

Charge Weight	155 oz
Final Vac Level	148.93 Micro

Unit Performance Test

Tested By Hugo Martinez

Over All Result

PASS

CIRCUIT 1 WATER FLOW	PASS
UNIT COOLING	PASS
UNIT HEATING	PASS

Final Leak Check

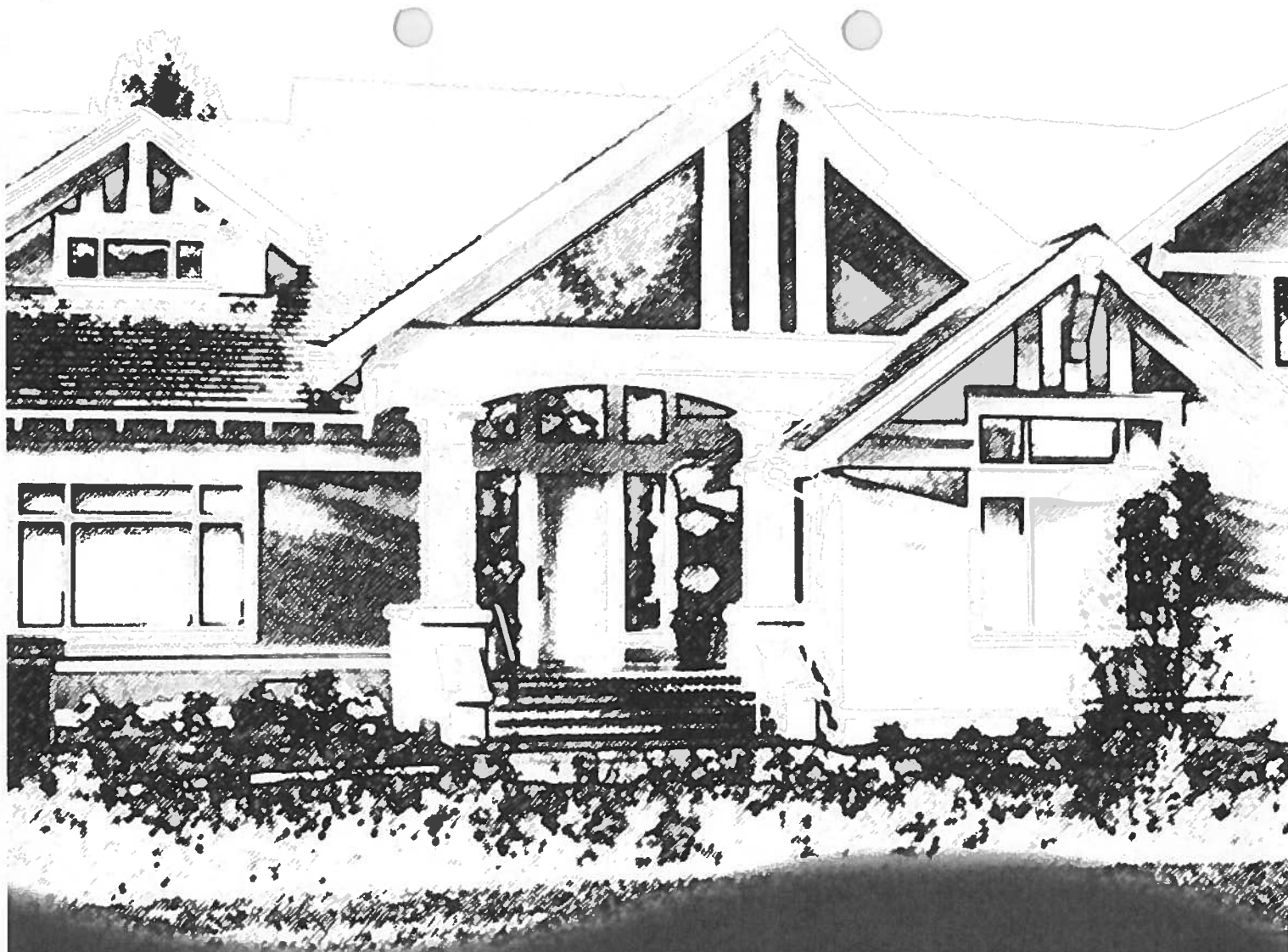
Over All Result

PASS

Tested By Martha Munoz

No leak detected

08/19/2015 23:11



GT-PX (50YD) Packaged Series

TWO-STAGE
HORIZONTAL, VERTICAL, AND DOWNFLOW
PURON® SYSTEMS SIZES 026 - 072 [7.0 - 19.3 kW]

Carrier

turn to the experts



Revised: June 7, 2013

GT-PX (50YD) Series

Performance Data — GT-PX Model 072 - Full Load

1950 CFM Nominal (Rated) Airflow Cooling, 2100 CFM Nominal (Rated) Airflow Heating

Performance capacities shown in thousands of Btu/h

EWT °F	Cooling - EAT 80/67°F										Heating - EAT 70°F													
	GPM	WPD		CFM	TC	SC	KW	EER	HR	LWT	HWC	GPM	WPD		CFM	HC	KW	COP	HE	LAT	LWT	HWC		
		PSI	FT										PSI	FT										
20	Operation not recommended										17.0	8.9	20.6	1750	46.6	4.66	2.9	30.7	94.7	16.4	5.2			
												17.0	8.9	20.6	2050	47.3	4.52	3.1	31.9	91.4	3.8	5.0		
30	8.5	2.2	5.1	1590	82.4	50.1	3.04	27.1	92.8	22.2	3.6	8.5	2.2	5.1	1750	51.6	4.77	3.2	35.3	97.3	21.7	5.4		
	8.5	2.2	5.1	1850	83.8	53.9	3.15	26.6	94.6	22.2	3.7	8.5	2.2	5.1	2050	52.4	4.63	3.3	36.6	93.7	8.6	5.2		
	12.8	4.6	10.6	1590	82.3	50.0	2.90	28.4	92.2	14.7	3.6	12.8	4.6	10.6	1750	54.0	4.83	3.3	37.5	98.6	24.1	5.5		
	12.8	4.6	10.6	1850	83.7	53.8	3.00	27.9	93.9	14.7	3.7	12.8	4.6	10.6	2050	54.8	4.68	3.4	38.8	94.8	6.1	5.4		
	17.0	7.6	17.6	1590	81.9	49.8	2.84	28.9	91.6	11.0	3.6	17.0	7.6	17.6	1750	55.3	4.86	3.3	38.7	99.2	25.4	5.6		
	17.0	7.6	17.6	1850	83.3	53.5	2.94	28.3	93.3	11.0	3.7	17.0	7.6	17.6	2050	56.1	4.71	3.5	40.1	95.3	4.7	5.5		
40	8.5	1.6	3.8	1590	81.3	49.8	3.27	24.9	92.4	22.2	3.9	8.5	1.6	3.8	1750	59.4	4.96	3.5	42.4	101.4	30.0	5.9		
	8.5	1.6	3.8	1850	82.7	53.5	3.39	24.4	94.3	22.2	4.0	8.5	1.6	3.8	2050	60.3	4.80	3.7	43.9	97.2	10.3	5.7		
	12.8	3.9	8.9	1590	82.2	50.1	3.09	26.6	92.8	14.8	3.6	12.8	3.9	8.9	1750	62.1	5.02	3.6	45.0	102.9	32.9	6.1		
	12.8	3.9	8.9	1850	83.6	53.9	3.21	26.1	94.6	14.8	3.7	12.8	3.9	8.9	2050	63.1	4.87	3.8	46.5	98.5	7.3	5.9		
	17.0	6.7	15.5	1590	82.4	50.1	3.02	27.3	92.7	11.1	3.6	17.0	6.7	15.5	1750	63.6	5.06	3.7	46.4	103.7	34.5	6.2		
	17.0	6.7	15.5	1850	83.8	53.9	3.13	26.8	94.5	11.1	3.7	17.0	6.7	15.5	2050	64.6	4.90	3.9	47.9	99.2	5.6	6.1		
50	8.5	1.3	3.0	1590	79.1	49.0	3.54	22.3	91.2	21.9	4.5	8.5	1.3	3.0	1750	66.9	5.14	3.8	49.4	105.4	38.4	6.5		
	8.5	1.3	3.0	1850	80.5	52.6	3.67	21.9	93.0	21.9	4.6	8.5	1.3	3.0	2050	67.9	4.99	4.0	50.9	100.7	12.0	6.3		
	12.8	3.4	7.8	1590	80.8	49.6	3.34	24.2	92.2	14.7	4.0	12.8	3.4	7.8	1750	70.1	5.23	3.9	52.3	107.1	41.8	6.8		
	12.8	3.4	7.8	1850	82.2	53.3	3.46	23.8	94.0	14.7	4.1	12.8	3.4	7.8	2050	71.2	5.07	4.1	53.9	102.1	8.5	6.6		
	17.0	6.0	13.9	1590	81.5	49.8	3.24	25.1	92.5	11.1	3.8	17.0	6.0	13.9	1750	71.8	5.27	4.0	53.8	108.0	43.7	7.0		
	17.0	6.0	13.9	1850	82.9	53.6	3.36	24.7	94.3	11.1	3.9	17.0	6.0	13.9	2050	72.9	5.11	4.2	55.5	102.9	6.5	6.8		
60	8.5	1.2	2.7	1590	76.1	47.8	3.87	19.6	89.3	21.4	5.4	8.5	1.2	2.7	1750	74.4	5.34	4.1	56.2	109.4	46.8	7.3		
	8.5	1.2	2.7	1850	77.4	51.4	4.01	19.3	91.1	21.4	5.6	8.5	1.2	2.7	2050	75.5	5.18	4.3	57.9	104.1	13.6	7.1		
	12.8	3.1	7.1	1590	78.3	48.7	3.63	21.6	90.7	14.5	4.7	12.8	3.1	7.1	1750	78.0	5.44	4.2	59.4	111.3	50.7	7.7		
	12.8	3.1	7.1	1850	79.7	52.3	3.76	21.2	92.5	14.5	4.8	12.8	3.1	7.1	2050	79.2	5.28	4.4	61.2	105.8	9.6	7.4		
	17.0	5.6	13.0	1590	79.3	49.1	3.52	22.6	91.3	11.0	4.4	17.0	5.6	13.0	1750	80.0	5.50	4.3	61.2	112.3	52.8	7.9		
	17.0	5.6	13.0	1850	80.7	52.7	3.64	22.2	93.1	11.0	4.5	17.0	5.6	13.0	2050	81.2	5.33	4.5	63.0	106.7	7.4	7.7		
70	8.5	1.1	2.6	1590	72.4	46.3	4.26	17.0	87.0	20.9	6.7	8.5	1.1	2.6	1750	81.9	5.56	4.3	62.9	113.3	55.2	8.1		
	8.5	1.1	2.6	1850	73.7	49.8	4.42	16.7	88.7	20.9	6.8	8.5	1.1	2.6	2050	83.2	5.38	4.5	64.8	107.6	15.2	7.9		
	12.8	3.0	6.8	1590	75.0	47.4	3.98	18.9	88.6	14.2	5.8	12.8	3.0	6.8	1750	86.0	5.68	4.4	66.6	115.5	59.6	8.6		
	12.8	3.0	6.8	1850	76.3	50.9	4.12	18.5	90.4	14.2	5.9	12.8	3.0	6.8	2050	87.3	5.50	4.6	68.5	109.4	10.7	8.4		
	17.0	5.4	12.4	1590	76.3	47.9	3.85	19.8	89.4	10.7	5.4	17.0	5.4	12.4	1750	88.2	5.75	4.5	68.6	116.7	61.9	8.9		
	17.0	5.4	12.4	1850	77.6	51.5	3.99	19.5	91.2	10.7	5.5	17.0	5.4	12.4	2050	89.5	5.57	4.7	70.5	110.4	8.3	8.7		
80	8.5	1.2	2.7	1590	68.4	44.7	4.72	14.5	84.5	20.3	8.2	8.5	1.2	2.7	1750	89.5	5.79	4.5	69.8	117.4	63.6	9.1		
	8.5	1.2	2.7	1850	69.5	48.1	4.89	14.2	86.2	20.3	8.4	8.5	1.2	2.7	2050	90.9	5.61	4.7	71.7	111.0	16.9	8.8		
	12.8	2.9	6.7	1590	71.2	45.8	4.40	16.2	86.2	13.8	7.1	12.8	2.9	6.7	1750	94.1	5.93	4.6	73.9	119.8	68.4	9.8		
	12.8	2.9	6.7	1850	72.4	49.3	4.56	15.9	88.0	13.8	7.3	12.8	2.9	6.7	2050	95.5	5.75	4.9	75.9	113.2	11.9	9.5		
	17.0	5.2	12.1	1590	72.6	46.4	4.24	17.1	87.1	10.5	6.6	17.0	5.2	12.1	1750	96.7	6.02	4.7	76.1	121.1	71.0	10.1		
	17.0	5.2	12.1	1850	73.8	49.9	4.40	16.8	88.8	10.5	6.7	17.0	5.2	12.1	2050	98.1	5.83	4.9	78.2	114.3	9.2	9.8		
90	8.5	1.2	2.8	1590	64.1	43.0	5.26	12.2	82.0	19.7	10.0	8.5	1.2	2.8	1750	97.3	6.04	4.7	76.7	121.5	72.0	10.2		
	8.5	1.2	2.8	1850	68.1	47.4	5.07	13.4	85.4	19.7	9.0	8.5	1.2	2.8	2050	98.8	5.85	4.9	78.8	114.6	18.5	9.9		
	12.8	2.9	6.7	1590	67.0	44.1	4.89	13.7	83.6	13.4	8.8	12.8	2.9	6.7	1750	102.6	6.22	4.8	81.3	124.3	77.2	11.0		
	12.8	2.9	6.7	1850	68.1	47.4	5.07	13.4	85.4	13.4	9.0	12.8	2.9	6.7	2050	104.1	6.03	5.1	83.6	117.0	13.1	10.7		
	17.0	5.2	12.0	1590	68.4	44.7	4.71	14.5	84.5	10.1	8.2	17.0	5.2	12.0	1750	105.5	6.32	4.9	83.9	125.8	80.1	11.4		
	17.0	5.2	12.0	1850	69.6	48.1	4.88	14.2	86.3	10.1	8.4	17.0	5.2	12.0	2050	107.1	6.12	5.1	86.2	118.4	10.1	11.1		
100	8.5	1.2	2.8	1590	59.8	41.2	5.88	10.2	79.9	19.2	12.2	8.5	1.2	2.8	Operation not recommended									
	8.5	1.2	2.8	1850	60.9	44.3	6.09	10.0	81.6	19.2	12.5	8.5	1.2	2.8										
	12.8	2.9	6.7	1590	62.6	42.3	5.46	11.5	81.2	13.0	10.8	12.8	2.9	6.7										
	12.8	2.9	6.7	1850	63.7	45.5	5.66	11.2	83.0	13.0	11.0	12.8	2.9	6.7										
	17.0	5.2	12.0	1590	64.0	42.9	5.27	12.2	82.0	9.9	10.1	17.0	5.2	12.0										
	17.0	5.2	12.0	1850	65.1	46.2	5.46	11.9	83.8	9.9	10.3													
110	8.5	1.1	2.6	1590	55.7	39.5	6.61	8.4	78.2	18.8	14.7	8.5	1.1	2.6	Operation not recommended									
	8.5	1.1	2.6	1850	56.7	42.5	6.85	8.3	80.0	18.8	15.0	8.5	1.1	2.6										
	12.8	2.9	6.6	1590	58.3	40.6	6.13	9.5	79.2	12.7	13.1	12.8	2.9	6.6										
	12.8	2.9	6.6	1850	59.3	43.6	6.36	9.3	81.0	12.7	13.4	12.8	2.9	6.6										
	17.0	5.1	11.8	1590	59.6	41.1	5.91	10.1	79.8	9.6	12.3	17.0	5.1	11.8										
	17.0	5.1	11.8	1850	60.7	44.2	6.12	9.9	81.6	9.6	12.6													
120	8.5	0.9	2.1	1590	52.0	38.1	7.45	7.0	77.4	18.6	17.6	8.5	0.9	2.1	Operation not recommended									
	8.5	0.9	2.1	1850	52.9	41.0	7.72	6.8	79.2	18.6	18.0	8.5	0.9	2.1										
	12.8	2.7	6.2	1590	54.2	39.0	6.91	7.8	77.8	12.5	15.8	12.8	2.7	6.2										
	12.8	2.7	6.2	1850	55.2	41.9	7.16	7.7	79.6	12.5	16.1	12.8	2.7	6.2										
	17.0	5.0	11.5	1590	55.5	39.4	6.65	8.3	78.2	9.4	14.9	17.0	5.0	11.5										
	17.0	5.0	11.5	1850	56.4	42.4	6.90	8.2	80.0	9.4	15.2													

WR # 63-33382

Heating Estimator

			FloorArea	3800 ft²	Read Me	GPMpTonH	3	Gal/min		17 gpm	
			HeatLoss	kBtu/h		GPMpTonC	3	Gal/min		12000 btu/hr = 1 ton	
			HeatSqFt	16.57 kBtu/h-ft²		Heating	23612	Gal/year		62966 kbtu/hr	
			HeatReqd	63.0 kBtu/h		Cooling	6983	Gal/year		5.25 ton	
			HeatHours	1500 Hours/year		Total	30595	Gal/year		3.24 GPMpTonH	
							4090	Cu.Fl./year			
							0.094	AcreFt/year			

	HeatHours Estimates					HeatSqFt Estimates (kBtu/h per 1000 ft ² of Floor Area)					
	Region		Low	High		Region		Poor Quality	Std. Quality	Hi. Quality	Super Eff.
	South	House	600	800		South	House	30	20	15	10
		School	200	400			School	30	22	15	10
		Office	200	700			Office	22	18	14	11
	Mid-USA	House	800	1000		Mid-USA	House	40	32	25	16
		School	300	500			School	35	27	20	13
		Office	700	900			Office	25	22	15	12
	North	House	1000	1500		North	House	50	40	30	20
		School	500	600			School	40	30	25	15
		Office	900	1100			Office	30	24	18	13

Cooling Estimator

[illegible]

	CoolHours Estimates					CoolSqFt Estimates (kBtu/h per 1000 ft ² of Floor Area)					
	Region		Low	High		Region		Poor Quality	Std. Quality	Hi. Quality	Super Eff.
	South	House	1100	1600		South	House	32	25	17	10
		School	600	1000			School	65	53	36	31
		Office	1200	1800			Office	35	28	20	15
	Mid-USA	House	800	1000		Mid-USA	House	30	22	15	9
		School	400	550			School	60	48	38	28
		Office	700	1100			Office	30	25	17	14
	North	House	200	300		North	House	28	20	14	8
		School	200	300			School	50	42	30	26
		Office	300	600			Office	28	22	16	12

Dr. Kavanaugh is retired. The email address at the University of Alabama in the red Read Me may no longer be active.

The CoolHour Estimates and the HeatHour Estimates are equipment run time hours, not Heating Degree hours, Cooling Degree Day hours or any other weather related index.

In addition to the 2 READ ME, information is available by clicking on any of the pale yellow cells. Only pale yellow cells are intended for user input.

The CoolHour Estimates and the HeatHour Estimates are equipment run time hours, not Heating Degree hours, Cooling Degree Day hours or any other weather related index.

In addition to the 2 READ ME, information is available by clicking on any of the pale yellow cells. Only pale yellow cells are intended for user input.

Webster, Clay

From: Webster, Clay
Sent: Monday, June 01, 2015 8:14 AM
To: 'camindave@digis.net'
Subject: Licensing Exam for Water Right Permit 63-33382

Mr. and Mrs. Larsen,

I have been asked to perform the licensing exam for your water right permit, 63-33382. This permit is for a Irrigation of seven acres. I would like to set up a time that I can meet you at the site and review the water use for the license. I will need to measure the well at full capacity, and will need to determine the annual volume of water diverted from the well.

Looking at my schedule, I'll be available Thursday the 11th or Friday the 12th. Please let me know if any of these times work for you. If not please give me some dates that work for you, and I will see what I can do.

Thank you for your time, and if you have any questions, please don't hesitate to contact me.

Sincerely,

Clay Webster

Water Resource Agent
clay.webster@idwr.idaho.gov
208-287-4910
Idaho Department of Water Resources (IDWR)



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

July 21, 2015

DAVID LARSEN
24551 BENHAVEN LN
MIDDLETON ID 83644

RE: Beneficial Field Exam for Water Permit 63-33382

Dear Mr. Larsen:

I have been asked to perform several field exams in your area during 18-21 August. I would like to schedule a time to conduct a water right licensing examination during that time.

On May 18, 2010 Tradition Custom Homes applied for a water permit for irrigation and domestic use at the property located at Township 05N Range 02W section 34. On December 8, 2010 the department received an Assignment of Application for Permit changing ownership of that permit to you. In November of 2011 you filed for an extension of time to submit proof of beneficial use. You provided proof of beneficial use in December 2014. I have attempted to contact you via email and telephone.

Please call me within 14 days at 208-287-4910 to discuss this water right permit.

I appreciate your attention to this matter and I look forward to hearing from you. Please contact me at 287-4910.

Respectfully,

Clay A. Webster
Water Resource Agent