

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
BENEFICIAL USE FIELD REPORT

**A. GENERAL INFORMATION**

**Permit No:** 65-23446  
**Exam Date:** 1/23/2020

1. Current Owner:  
GARY A SKEEN PO BOX 2268 BOISE ID 83701
2. Accompanied by: in-office field exam \*irrigation of 5 acres or less  
Phone No:  
Address:  
Relationship to permit Holder:

3. **SOURCE:**  
GROUND WATER

**Method of Determination:** Aerial Imagery, well drillers report, personal communication with owner

**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: YES Overlap

| Water Right No. | Source         | Purpose of Use     | Basis  |
|-----------------|----------------|--------------------|--------|
| 65-23447        | Groundwater    | Stockwater Storage | Permit |
| 65-23447        | Unnamed Stream | Stockwater Storage | Permit |

Comments: There are two in-stream stockwater storage ponds for 65-23447. The south one is outside the place of use for irrigation and the north one is in the corner of the irrigated pasture.

2. Other water rights with the same point-of-diversion: YES Overlap

| Water Right No. | Source      | Purpose of Use     | Basis  |
|-----------------|-------------|--------------------|--------|
| 65-23447        | Groundwater | Stockwater Storage | Permit |
|                 |             |                    |        |

Comments: The groundwater source is from the well drilled in 2014 (drilled for irrigation only). The groundwater from the well is also used to fill the ponds for 65-23447 when the ephemeral stream becomes unavailable in the later summer months. There is no indication that the new well is connected to the house and the domestic uses are achieved through use of an older well near the home.

**C. DIVERSION AND DELIVERY SYSTEM**

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE¼ SE¼, Sec. 16, Twp 07N, Rge 01E, B.M. GEM County

Method of Determination: Aerial imagery, well drillers log, personal communication with the owner

**PLACE OF USE:** IRRIGATION

| Twp | Rng | Sec | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE  |    |    |    | Totals |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|--------|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE  | NW | SW | SE |        |
| 07N | 01E | 16  |    |    |    |    |    |    |    |    |    |    |    |    | 1.8 |    |    |    | 1.8    |

Total Acres: 1.8

Method of Determination: Digitized the area of pasture and yard that are irrigated which totaled 1.76 acres rounding to 1.8 acres. Consulted well drillers log and personal communication with the owner regarding use.

3.

☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

☒ Aerial Photo Attached (required for irrigation of 10+ acres).

☐ 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 |
|---------------------------|------------|-----|------------------|-----------|-----------------------------------|
| D0066299                  |            | 1.5 |                  |           |                                   |

#### D. FLOW MEASUREMENTS

1.

| Measurement Equipment | Type | Make | Model No. | Serial No. | Size | Calib. Date |
|-----------------------|------|------|-----------|------------|------|-------------|
| N/A                   |      |      |           |            |      |             |

2. Measurements: N/A In office field exam

#### E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

##### *Flow from the Well:*

Using parameters from the well log, a theoretical flow rate and minimum pump power requirement can be calculated. The pump test performed in 2014 shows a discharge of 35 gpm (0.07 cfs) with a drawdown of 14 feet and a reported static water level of 43 ft. I rounded the differential elevation to 60 ft just in case the static water level has dropped in the last couple of years.

Using these values along with the 310 feet of 1 ¼ inch diameter poly pipe (average inner diameter for nominal value poly pipe ~ 1.4 inches) and an estimated 40 psi requirement, the calculated total dynamic head of 194.96 ~195 ft. These parameters were used in the online TDH calculator located here.

<https://www.tuhorse.us/total-dynamic-head-tdh-calculator/>

To confirm this well system can meet the recommended flow from the well to the stockwater ponds. The pump power requirement (assuming 70% pump efficiency) would be about 1.5 HP to get the water all the way to the ponds. The pump capacity of an average 1.5 HP pump at 60 ft at 40 psi is 27.5 gpm (0.06 cfs). This is sufficient flow for the recommended flow for the water right licenses at this POD.

*Irrigation Delivery System:* 3- Aquaburst HF30 sprinkler heads on a 100 foot line with 24 inch risers 40 feet apart (45 foot radius) at 5/32 inch nozzle and 50 psi ~ 5 gpm per sprinkler (according to the manufacturers specs for the HF30)

$$5 \times 3 = 15 \text{ gpm} / 448.83 = 0.03 \text{ cfs}$$

See manufacturers specifications attached

#### **F. VOLUME CALCULATIONS**

##### **1. Volume Calculations for irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.8 \text{ acres} \times 3.5 \text{ AF/acre} = 6.3 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.06 \times 259 \times 1.9835 = 30.8 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 6.3 \text{ AF}$$

**2. Volume Calculations for Other Uses:** The estimated pump capacity for this system is 0.06 cfs, but only 0.03 cfs is considered for the diversion rate since that is the quantity put to beneficial use for irrigation. There is use of an old domestic well for the home and does not need to be considered for these volume calculations. Permit 65-23447 is recommended to be limited to 0.4 AF per year. In total, for both water rights, 6.7 AF could be used for stockwater storage and irrigation which is within the limits of the system capacity (30.8 AF). This will round to 7 A.F. for recommendation.

$$\text{System Capacity} = 30.8 \text{ AF}$$

$$\text{Permit 65-23447 for stockwater storage} = 0.4 \text{ AF}$$

$$\text{Permit 65-23446 Irrigation Uses} = 6.3 \text{ AF}$$

$$\text{Total permit volume required} = 6.7 \text{ AF} \sim 7 \text{ AF}$$

#### **G. NARRATIVE/REMARKS/COMMENTS**

There was some discussion of how to conduct the field examination for this permit. A memo written by Dan Nelson on September 7, 2016 states this permit needed a field visit. An in-office examination for 65-23446 using communications from the owner combined with aerial imagery provided enough information to evaluate the beneficial use. Additionally, this permit meets the qualifications for an in-house field exam specified by IDAPA 035.02.r (a) for irrigation at 5 acres or less.

The water source is groundwater from the well (D0066299) drilled for irrigation in 2014. This well also serves as one of the sources for the permit 65-23447 which is used for stockwater storage. This

water right is excluded from Water District 65A (Squaw Creek) since it is not a surface water right. The groundwater source for 65-23446 and 65-23447 is the same, the place of use and beneficial use are different. This permit 65-23446 is only for irrigation of the pasture and lawn on the property, whereas the groundwater use for 65-23447 is used to fill the ponds for stockwater storage

At the well is a 1¼ inch galvanized steel riser with a manual valve. This riser drops down to an above ground 1¼ inch poly line. From the well this poly line runs approximately 75 feet and then turns to the south along the fence for 235 feet. At points along this feeder line are a series of T's and valves that allow diversion of water where needed and connect other lines. At the end of this line there is a removable end cap which is near the unnamed stream (for permit 65-23447). There are three frost free hose bibs piped around the property at locations that make it easy to distribute water. One is at the well head, one is at the back of the house, and one is on the fence line at the west side of the corral near the gate - these are for attaching other sprinkler systems as needed. The moveable pipe is between 80-100 feet. On the line there are 3 Aquaburst 30's. These sprinklers are on 24" risers, 35-40 feet apart so that they overlap. This head, at the pressure it is running produces approximately a 50' radius. There is no indication that the well is connected to the house and the domestic uses are achieved through use of an older well near the home.

During my phone conversation with Mr. Skeen and in his emails following he described that he began using his well water to irrigate the pasture the first year the well was completed (2014). In the following years he used less water out on the pasture in attempts to eradicate the *Rumex crispus* population, which is quite a noxious weed. Round up and diesel wouldn't knock them down so he opted for goats and not watering them which was quite successful. This may explain why it is hard to see a clearly irrigated pasture on the aerial imagery, you can however see the *Rumex* in the aerial imagery. He plans to re-seed the pasture this year. In an effort to find supporting aerial imagery to Mr. Skeen's statements I looked through the sentinel imagery only to find a very low resolution and I was not able to make any determination as the cell size for that imagery was larger than his property. I did find one image from Google Earth dated 4/2016 that does show some elevated greenness relative to other non-irrigated areas (see picture attached). While the physical evidence is weak at best, with his statements made both in written (email) and verbal (phone) I feel satisfied that he has put his water to beneficial use.

The estimation that Mr. Skeen provided for the individual sprinkler rate was slightly off. Using the brand and model of the sprinkler I was able to find a specifications table from the manufacturer and the given distance the sprinklers are apart with the overlap and the radius of the sprinkler reach (40 feet apart, and approx. 50 foot radius) this places his sprinkler in the 5/32" nozzle size and 50 psi giving 5 gpm per sprinkler. This is a reasonable estimation given his pipe sizes and setup, despite Mr. Skeen's guess of 3 gpm which seemed low. This rational was supported by two colleagues who are sprinkler experts. Mr. Skeen's parcel is just under 3 acres, but only 1.8 acres are being irrigated. The irrigation requirement (field headgate requirement) for his area is 3.5 Acre-Feet/Acre. To calculate the annual volume component we compare the volume based on irrigation requirements vs. volume based on diversion rate. In this case, the volume based on irrigation requirement is less so I will recommend an annual volume of 6.3 A.F. for irrigation.

Through email and phone communication Mr. Skeen has described his diversion works (see above for details and attached system diagram) and how much water he put to use for irrigation during the developmental period. He is irrigating pasture land for his livestock. He was not able to provide evidence that the flow rate he put to use was 0.06 cfs, which is what he submitted in the proof of beneficial use. Based on email communications and sprinkler calculations the most water he put to use during the development period was 0.03 cfs. While this recommended amount is half of what was requested he will be able to irrigate his land as he has been with a rate of 0.03 cfs and 6.3 AFA.

Proof of beneficial use was submitted 25 days late on 8/26/2016 and the priority date was extended by the 25 days to 3/06/2011. Condition X35 limiting the total combined diversion rate from the well to 0.3cfs.

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

**H. RECOMMENDATIONS****1. Recommended Amounts**

| <u>Beneficial Use</u> | <u>Period of Use</u> | <u>Rate of Diversion</u> | <u>Annual Volume</u> |
|-----------------------|----------------------|--------------------------|----------------------|
| IRRIGATION            | 03/01 to 11/15       | 0.03 CFS                 | 6.3 AF               |

Totals: 0.03 CFS 6.3 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** Kellie Smith - Hydrologist, Technical

*Kellie Smith*  
Field Examiner's Name \_\_\_\_\_ Date 9/2/2021  
Reviewer Plam Date 11/1/21

# AQUA BURST

1 208-438-9223  
Fax: 1 208-438-4405

E-mail: [card@coml.org](mailto:card@coml.org)  
Toll Free: 1-866-438-9223

3/4" BRASS/ALUMINUM IMPACT SPRINKLER

**Precision Channel™ Aluminum Arm**



**FIVE-YEAR  
LIMITED BEARING  
WARRANTY**

HF30AL

## Features

- Full-circle impact - 26" trajectory
- 3/4" male NPT base
- Single nozzle
- Fits 3/4" size nozzle (NOZ75 series)

### Advantages

- Anodized die-cast aluminum drive arm with Precision Channel Spoon® for smooth Torque-Driven™ operation and reduced splash-down
- Cast-stress body with triple bridge construction and cored water passage
- Seal with debris journal to slow bearing wear
- Spin-Lock bearing creates a captive seal
- Stainless steel fulcrum pin, arm spring, and bearing spring for long bearing reliability
- Suitable for portable, solid-set and row-drop frost protection and mechanical move systems
- Made with domestic and foreign parts
- Preassembled with XC-33 thread sealant

|          |                           |
|----------|---------------------------|
| HF30AL   | (single)                  |
| HF30AL-C | (single w/chrome bearing) |
|          | 60/case                   |

### AQUA BURST® Performance Chart

Raders • GPW

| #  | 14" nose | 9.54" nose | 5.12" nose | 11.54" nose | 3.16" nose |
|----|----------|------------|------------|-------------|------------|
| 30 | 39 - 2.2 | 41 - 3.0   | 42 - 3.8   | 44 - 4.6    | 45 - 5.5   |
| 35 | 40 - 2.4 | 41 - 3.3   | 43 - 4.1   | 45 - 5.1    | 45 - 5.9   |
| 40 | 40 - 2.6 | 42 - 3.5   | 44 - 4.5   | 46 - 5.3    | 46 - 6.4   |
| 45 | 41 - 2.9 | 42 - 3.7   | 44 - 4.7   | 46 - 5.7    | 47 - 6.7   |
| 50 | 41 - 3.1 | 43 - 4.0   | 45 - 4.9   | 47 - 6.1    | 48 - 7.2   |
| 55 | 42 - 3.3 | 43 - 4.3   | 45 - 5.1   | 48 - 6.4    | 49 - 7.5   |
| 60 | 42 - 3.5 | 44 - 4.5   | 46 - 5.4   | 49 - 6.7    | 49 - 7.8   |
| 65 | 43 - 3.7 | 44 - 4.7   | 46 - 5.7   | 49 - 7.0    | 50 - 8.1   |
| 70 | 44 - 3.9 | 45 - 4.8   | 47 - 5.9   | 50 - 7.2    | 51 - 8.4   |

### Submersible Well Pump Performance at 40 PSI Discharge Pressure

**Depth to water level in feet – Capacities in gallons per minute**

[illegible]



Google Earth image from 4/2016 showing the pasture area around the house being more green (irrigated) relative to the non-irrigated areas to the south and just west of the road. Note that the area in the upper right corner of this image is a hill and there is a large mansion (out of view) which has a lot of irrigation.

State of Idaho  
Department of Water Resources  
**Water Right License**  
65-23446



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.035 0.07 0.14 Miles



# Permits 65-23446, 65-23447 Gary Skeen

## Legend

-  = hosebibs to make connections
-  = 1 1/4" feeder line (main)
-  = 100' pipe with 3 sprinklers to move for lawn, pasture
-  = ponds
-  = unnamed stream
-  = well

Montour Rd

235ft

DELIVERY SYSTEM DIAGRAM  
K. SMITH 9/19

300 ft

## Smith, Kellie

---

**From:** Gary Macsgian <gmacsgian@gmail.com>  
**Sent:** Thursday, September 19, 2019 5:27 PM  
**To:** Smith, Kellie  
**Subject:** Re: Follow up questions for permit 65-23446

Kellie:

Thanks for the tip on the curly doc.

I had someone in water resources help me calculate the necessary cfs I would need for the property to produce pasture grass and livestock water. I don't recall his name.

Thanks,

Gary.

On Thu, Sep 19, 2019, 1:31 PM Smith, Kellie <[Kellie.Smith@idwr.idaho.gov](mailto:Kellie.Smith@idwr.idaho.gov)> wrote:

Gary,

Sorry for the double email, but I just want to make sure that I have the most accurate information to make the best recommendations to license your permits.

In your proof of beneficial use for the irrigation right, you submitted a rate of 0.06 cfs. How did you calculate that your diversion rate was 27 gpm (0.06 cfs)?

In your email response you mention that you have three sprinklers on one line that run (3 gpm each) or 9 gpm (0.02 cfs) even though you could run more. Have you ever run more than the one line at a time?

I can only recommend for your diversion rate the maximum water that you have put to beneficial use during the development period (2011-2016) for irrigation up to 0.06 cfs.

Any more information you can provide about the maximum diversion from your well for irrigation will be helpful.

Also, a big side note about that kumex. In my old life I fought many battles as a restoration ecologist with what we called Curly Dock. We did hundreds of acres of eradication without chemicals or goats since we were working in wetland areas. You have to first contain the seed, each plants can make thousands of seed each season. We clipped the seed heads when they were green and put them in the trash (you could burn or compost etc) THEN you have to pop out the carrot like root. Even if the goats eat the above ground foliage the plant can come back from a very small amount of root. Ideally all this is best done in the spring when the ground is soft the root pops out nicely with one shovel movement. Best of luck with that battle I am quite familiar with it and it is not easy.

Thanks again. Please call me with any questions.

**Kellie Smith**

IDWR Water Distribution

(208) 287-4842

**From:** Gary Macsgian [mailto:[gmacsgian@gmail.com](mailto:gmacsgian@gmail.com)]  
**Sent:** Thursday, September 12, 2019 1:21 PM  
**To:** Smith, Kellie <[Kellie.Smith@idwr.idaho.gov](mailto:Kellie.Smith@idwr.idaho.gov)>  
**Subject:** Re: Follow up questions for permits 65-23446 and 65-23447

Kellie:

I think it would be easiest if I just gave you an overview of what I did for water distribution on the property after the well was completed. I went out last night and measured. I gave you the wrong pipe size. It's a 1 1/4" line. So, at the well head I installed a 1 1/4 inch galvanized steel riser with a manual valve. This riser drops down to the 1 1/4 inch Poly line. This line is above ground at the well head. This line runs to the northeast approximately 75' and then a 90 degree turn to the south along the fence. The total length of this feeder line is about 235 feet. At points along this feeder line are a series of T's and valves that allow me to divert water where needed and connect other lines. At the end of the feeder line is a removable end cap. The end of this feeder line is near the creek at the back of the property. I also have three frost free hose bibs piped around the property at locations that make it easy to distribute water. One is at the well head, one is at the back of the house, and one is on the fence line at the west side of the corral near the gate. These are for filling troughs and attaching other sprinkler systems as needed. I also piped a line to a trough that straddles two of the holding pens. This trough is fed off of a ball cock valve and refills automatically.

Responses to your questions.

Regarding 65-23447

1. Ponds can be filled from the feeder line or 3/4" hose bib. Situated along the feeder line are valves and T's that can be opened and the water runs down the hill and into the pond. The property is slightly elevated. If I open the valve gravity solves my problem. In discussing with my wife, she indicated she has used a 3/4" 100' hose from the hose bib at the well head and also at the east stock pond behind the house to add water to these ponds during dry periods. As we discussed on the phone, sometimes in August or September the ponds will start to dry out, and she will use one of these methods to fill the ponds.
2. We first used the well to fill the ponds while proofing the well. The pond at the front was filled in this manner. Later that month the north west pond was filled. The same with the southeast pond.
3. The ponds were on the property when I bought the house in '96. Every 2-3 years I have to have someone come in and deepen them and rebuild the banks as the stock break down the banks around the ponds. The pond most damaged by stock is the one in the southeast corner. The others require less maintenance. I believe the last time was August 2016.

Regarding 65-23446

1. The pipe I move is between 80-100 feet. On the line I have 3 Aquaburst 30's. These sprinklers are on 24" risers, 35-40 feet apart so that they overlap. This head, at the pressure it is running produces approximately a 50' radius and delivers approximately 3 gpm. The well seems to be able to run this very comfortably and in truth, I could probably run another 3.
2. I first began using the irrigation system the year the well was completed. I have used it since. In 2017, 2018, and 2019. I quit using the sprinkler after about June 30th because of a weed locally known as Indian Tobacco; Latin name is Rumex Crispus. It took over my property. I tried 2-4D to no avail. My neighbor suggested adding diesel to the mix so I did. Turned them slightly yellow, but then they were fine. I became concerned about the health risks associated with the use of poison with the recent revelations about glyphosate. Our 4-H coordinator suggested using the goats to kill the burgeoning weed population, so I did. I shut off the water, turned the goats out and let them eat it to the ground. This is the second year with only a few, Indian Tobacco plants returning so I plan on reseeding this fall. My neighbor on the fence line still has a

burgeoning population of Indian Tobacco, but the goats have been the most effective deterrent against the invasion.

3. I usually water late in the evening and let it run 30 minutes to an hour. When it's hot, I may water daily, but in spring and fall, I can get by less frequently.

Let me know if I can answer any more questions.

Gary Skeen

On Wed, Sep 11, 2019 at 11:46 AM Smith, Kellie <[Kellie.Smith@idwr.idaho.gov](mailto:Kellie.Smith@idwr.idaho.gov)> wrote:

Mr. Skeen,

Thank you for talking with me on Monday. I have some follow up questions.

Regarding your ponds for the permit 65-23447.

1. How are you conveying water from the well to the ponds?
2. When did you first use the well to fill the ponds?
3. When did you construct or enhance the ponds? Can you provide an approximate date and description of the work you did?

Regarding the permit 65-23446 for irrigation.

You described on the phone that you have a 2" black pipe that you move around the pasture for irrigation

1. How long is the 2" pipe that you unhook and move around to irrigate the pasture and how many sprinklers (what size) are connected to the pipe?
2. When did you first begin irrigating the pasture?
3. Can you describe a very general irrigation schedule you use? How often do you water the pasture?

Thank you so much for taking the time to answer these questions. If I can get your responses to these questions, I may not need to come to your place for an in-person exam.

**Kellie Smith**

Staff Hydrologist

Water Distribution

Idaho Department of Water Resources

Phone: (208) 287-4842

Email: [kellie.smith@idwr.idaho.gov](mailto:kellie.smith@idwr.idaho.gov)

# AQUA BURST

1-208-438-9223  
Fax: 1-208-438-4468

E-mail: [xcad@pmt.org](mailto:xcad@pmt.org)  
Toll Free: 1-866-438-9223

1/2/14

## 3/4" BRASS IMPACT SPRINKLER

### 3/4" Full-Circle Brass Impact Torque Driven™ Spoon Technology



**FIVE-YEAR  
LIMITED BEARING  
WARRANTY**

HF30

#### Features

- Full-circle impact - 26° trajectory
- 3/4" male NPT base
- Single (HF30) or dual nozzle (HF30D)
- Fits 3/4" size nozzle (NOZ75 series)

#### Advantages

- Cast brass drive arm with I-Beam construction and Torque-Driven™ spoon technology with improved balance, rotation speed and durability
- Cast brass body with triple bridge construction and cored water passage
- Seal-Lock bearing creates a captive seal
- Spindle with debris journal to slow bearing wear
- Stainless steel fulcrum pin, arm spring, and bearing spring for long wearing reliability
- Ideal for hand line, wheel line, solid set, and a wide-range of other applications
- Made with domestic and foreign parts
- **Preassembled with XC-33 thread sealant**

*Sprinkler Head Does Not Include Nozzle*

HF30 (single)  
HF30-C (single w/chrome bearing)  
HF30D (dual)  
HF30D-C (dual w/chrome bearing)  
60/case

### AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Single Nozzle  
Radius - GPM

Dual Nozzle  
Radius - GPM

| PSI  | 1/8" nozzle | 9/64" nozzle | 5/32" nozzle | 11/64" nozzle | 3/16" nozzle |
|------|-------------|--------------|--------------|---------------|--------------|
| 30   | 39 - 2.2    | 41 - 3.0     | 42 - 3.8     | 44 - 4.6      | 45 - 5.5     |
| 35   | 40 - 2.4    | 41 - 3.3     | 43 - 4.1     | 45 - 5.1      | 46 - 5.9     |
| 40   | 40 - 2.6    | 42 - 3.5     | 44 - 4.5     | 46 - 5.3      | 47 - 6.4     |
| 45   | 41 - 2.9    | 42 - 3.7     | 44 - 4.7     | 46 - 5.7      | 48 - 6.7     |
| ★ 50 | 42 - 3.1    | 43 - 4.0     | 45 - 4.9     | 47 - 6.1      | 48 - 7.2     |
| 55   | 42 - 3.3    | 43 - 4.3     | 45 - 5.1     | 48 - 6.4      | 49 - 7.5     |
| 60   | 43 - 3.5    | 44 - 4.5     | 46 - 5.4     | 49 - 6.7      | 49 - 7.8     |
| 65   | 43 - 3.7    | 44 - 4.7     | 46 - 5.7     | 49 - 7.0      | 50 - 8.1     |
| 70   | 44 - 3.9    | 45 - 4.8     | 47 - 5.9     | 50 - 7.2      | 51 - 8.4     |

| PSI | 1/8"x3/32" nozzles | 9/64"x3/32" nozzles | 5/32"x3/32" nozzles | 11/64"x3/32" nozzles | 3/16"x3/32" nozzles |
|-----|--------------------|---------------------|---------------------|----------------------|---------------------|
| 30  | 39 - 3.8           | 41 - 4.4            | 43 - 5.3            | 44 - 6.0             | 44 - 7.0            |
| 35  | 40 - 4.1           | 41 - 4.8            | 44 - 4.7            | 45 - 6.4             | 46 - 7.4            |
| 40  | 41 - 4.4           | 42 - 5.2            | 44 - 6.1            | 45 - 7.0             | 47 - 8.0            |
| 45  | 41 - 4.6           | 42 - 5.5            | 45 - 6.5            | 46 - 7.5             | 48 - 8.6            |
| 50  | 42 - 4.9           | 43 - 5.8            | 45 - 6.8            | 47 - 7.9             | 49 - 9.1            |
| 55  | 42 - 5.2           | 43 - 6.1            | 46 - 7.1            | 48 - 8.3             | 50 - 9.5            |
| 60  | 43 - 5.4           | 44 - 6.3            | 46 - 7.4            | 48 - 8.7             | 51 - 9.8            |
| 65  | 43 - 5.7           | 44 - 6.6            | 47 - 7.8            | 48 - 9.0             | 51 - 10.3           |
| 70  | 43 - 5.9           | 45 - 6.9            | 47 - 8.1            | 49 - 9.4             | 52 - 10.6           |

Aqua Burst™ impact sprinklers are only guaranteed to function optimally with nozzle type and sizes from each individual model's performance chart.  
All Prices Subject To Change Without Notice