



**Mountain View Technologies, Inc.**

*Snowmaking System Design \* Research & Development \* Investigations \* Web Based Mountain Information*

## Aquatrols *Drift* Snowmaking Additive

### Snowmaking Test Program Report

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Yaroslav I. Stanchak

P.O. Box 439, Bethel, Vermont 05032  
Phone/Fax: 802.234.5558  
Email: [ystanchak@the-snowman.com](mailto:ystanchak@the-snowman.com)  
[www.the-snowman.com](http://www.the-snowman.com)

## 1. Scope

Conduct a short-term snowmaking test program on the Killington test stand to provide additional data on the impact of the Aquatrols snow additive **DRIFT** on snow gun performance at various temperatures and with several types of snow guns. This data will provide Aquatrols with additional baseline information for evaluating the potential of the additive product for further business development in the snowmaking market.

## 2. Results

The results of the five snowmaking tests at Killington (February and March 2002) using the Aquatrols **DRIFT** additive indicate that this product does produce a positive gain in snow gun water throughput and does improve snow quality for a given wet bulb (F) operating temperature. This year's testing supports the results obtained in the 2001 test program.

The actual water flow improvement with **DRIFT** appears to be an increase of about 3%-5% for standard air-water snowmaking equipment using the testing methodology outlined in this report. This increase can also be translated into a 1 or 2 degree (F) gain in wet bulb temperature for a given snow quality. Another way of describing the improvement is a one step gain on the snow quality chart.

The fixed water orifice low airflow tower snow guns will show an improvement in snow quality when **DRIFT** is used if the quality of the existing snow product is less than **P\***. The fixed orifice towers are generally perceived to produce a better snow quality as the water pressure is increased. The results of this test program suggest that this is not a totally accurate description of actual performance. The "sweet spot" of this equipment appears to be at water pressures above 300 psig for consistent snow quality and minimal surface glazing (icing) close to the snow gun. At pressures below this threshold the water particles were larger and tended to be deposited closer to the snow gun thereby increasing surface glazing. Major step increases in water pressure above this threshold will produce marked increases in water flow and may produce an area of crusty snow for a given temperature condition, however the injection of **DRIFT** will reduce the size of this crusty area, decrease the size of larger water particles and improve the overall snow quality. With this pressure based characteristic in mind it is difficult to state how much difference the **DRIFT** additive will have on a full-length trail using low air tower guns with a major elevation differential, but the test data suggests a 5% to 7% improvement in water flow or one step in snow quality can be gained under a given condition.

From a qualitative standpoint the testing demonstrated that the addition of Aquatrols **DRIFT** to the snowmaking water in the specified concentration yielded a positive gain in snow product quality in the majority of instances. This improvement was noted with all the snowmaking equipment used in the test program. The addition of **DRIFT** to the snowmaking water reduced the number of coarse snow particles while minimizing the snow crusting and snow glazing area for a given test condition. In general this equated to an observable and repeatable difference (improvement) in snow surface quality.

Snow Density samples were not taken due to lack of good snow deposition.