

## Factoid

Dry air is primarily made up of nitrogen and oxygen. The remaining 1% is made up of argon, carbon dioxide and other trace gases. Water vapor (water in its gaseous state) is also present in the atmosphere in varying amounts, by up to 2%.



## TESTING & SENSOR CALIBRATION

HSE offers equipment to help you perform regular testing and calibration on your system. Our range of products includes portable PT testers, watt meters, battery charger/discharger unit, and antenna analyzers to support field visits. Call us or visit our website for more information.

www.highsierraelectronic.com  
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ADDRESS CORRECTION REQUESTED



## NUGGET LAKE, WI

In 2010 HSE installed a flood warning system along Nugget Lake in Pierce County, Wisconsin. During a recent phone conversation, Jim Kleinhans offered the following comments:

"The equipment is amazing, we're very impressed. The little (100mA) solar panel keeps the battery charged, so we haven't had to change batteries. We make sure there're no trees or vegetation, but otherwise, the system just works. I take my canoe and paddle past one of the sites when I'm out fishing and it looks great. We're really happy we found you guys."



Nugget Lake, WI

## SIERRA SUMMIT CHALLENGE

Test your knowledge of these facts about glaciers:

- Glaciers form when the snow accumulating on land from one winter doesn't melt before the next winter's snow arrives.
  - True
  - False
- What controls the downhill flow of a glacier?
  - The amount of snow through a winter season.
  - The slope of the land.
  - The kind of rock that the glacier flows over.
  - All of the above.
- Is it possible to have a glacier on the Equator?
  - True
  - False
- Name at least one of the two largest ice sheets.
  - Greenland
  - Nunavut, Canada
  - Antarctic

## INSIDE THIS ISSUE

- Compare & Consider HSE's ALERT2
- Advice from the Field: Preventing Birds from Roosting
- Welcoming New Technical Sales

## Product "ALERT" Surface Temperature Sensor



## Innovative Site Design Mohave County, AZ



## Dam Significant



## Did You Know?

The 1941 Atlantic hurricane season was relatively inactive, with only six known storms.



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## INFORMED DECISIONS

High Sierra Electronics, Inc. (HSE) contributes to your success by helping you make informed decisions. We constantly search for and provide information and news that is pertinent to your needs. Our data sheets, news articles and publications are downloadable in PDF format on our web site. We encourage you to visit often at [www.highsierraelectronics.com](http://www.highsierraelectronics.com).

"...go in the direction your head is pointed in."  
-Jung Chang

## EXCELLENCE AWARD

The City of Belton, TX was presented the 2013 Municipal Excellence Award in Public Safety (cities less than 25,000 population) by the Texas Municipal League. The award recognizes the Nolan Creek Early Flood Warning System, a network of five monitoring stations that measure stream depth and rainfall totals along the waterway.

HSE helped the City develop the system in response to a September 2010 rain event that caused the water level in Nolan Creek to dramatically rise, flooding downtown businesses along Central Avenue. It also led to swift-water rescues in neighborhoods adjacent to the creek.

In 2012, the City of Belton made the first investment in an early warning system when it placed a HSE monitoring station on Nolan Creek about six miles upstream from the City. Within a year, Killeen and Harker Heights became partners in the system and each agreed to install additional stations. Since then, stations have also been placed near Wheat Road and on Penelope Street Bridge. The result is a robust creek monitoring system that provides real-time data on rainfall and stream elevation.

## THINKING OUTSIDE OF THE BOX

HSE recently introduced a new product, a telemetry cabinet for use at remote monitoring sites. The Model 5950 design is based on our years of field experience and the feedback of our ALERT technicians and customers.



The cabinet is weatherproof and offers users the ability to house most any style of transmitter, whether it's a canister or NEMA enclosure. There's also room for extra, external batteries and a desiccant box for PT's or weather sensors. It comes complete with a welded antenna mast bracket and an adaptor for adding a tipping bucket rain gauge top section (new or previously owned). The cabinet is powder-coated and available in traditional bronze, white or silver. All of the necessary brackets and hardware are included for mounting on a 4" pole. Other mounting options include Unistrut and an adapter for mounting on a cut-off standpipe. The door has a 3-point latch with key lock for added security.

## HAPPY TRAILS

Retirement is bittersweet. Exciting and gratifying for the retiree and melancholy for those left behind. This is the case at HSE as we said goodbye in 2014 to two key individuals: Jerry Bloom, Electronic Technician and Jack Peterson, Inside Sales. Each made significant contributions to the company's success and reputation - both offering outstanding customer service in their respective roles. Join us in wishing them well!

## PRODUCT ANNOUNCEMENT

### Surface Sentinel Surface Temperature Sensor

The Model 5439 Surface Sentinel is a non-intrusive surface temperature sensor for fixed locations. The sensor provides the user with surface temperature, air temperature, relative humidity and dew point. The sensor is typically mounted on a pole or tower next to a road surface. It can be used for remote monitoring or in an autonomous system.



#### Product Application Examples

- ✓ Low cost way to fill in gaps between existing weather stations
- ✓ Remotely triggering ICY Bridge flashing beacon signs
- ✓ Alerting paint stripe crews that the road temperature is ready to start work

In the remote monitoring configuration, the Surface Sentinel can be connected to the HSE 3512/3306 line of dataloggers to send data to a central software system. The standard open-architecture data output is available via SDI-12 to provide a common interface to industry standard datalogger and telemetry options.

In the autonomous system configuration, the contact output can be used to trigger ITS devices based on user-defined sensor thresholds. An example would be to trigger an "Icy Bridge" sign when the bridge surface is near or below freezing.

The surface temperature is measured by a highly accurate non-contact infrared temperature sensor. Air temperature and relative humidity are measured from a highly accurate sensor from which dew point is calculated. The sensor has an integrated fan as an option for applications where higher accuracy air temperature and relative humidity readings are needed. For more information or a price quote, please call 1-800-275-2080 or send an email message to [sales@highsierraelectronics.com](mailto:sales@highsierraelectronics.com).

## COMPARE & CONSIDER

### HSE'S ALERT2 Transmitter/Concentrator

When transitioning to ALERT2, compare and consider these features provided by HSE's line of Transmitters:

- ✓ Concentrator Capability
  - ALERT to ALERT2
- ✓ Datalogging
  - 16 GB on Removable SD Card
  - Downloads in 2 Seconds
- ✓ Inputs
  - Up to 20 SDI-12
  - 2 Quadrature Shaft Encoders
  - 8 Analog (12 Bit Resolution)
  - 2 Sierra Misco Shaft Encoders
  - 2 Precipitation
  - 1 Peak Gust
  - Wind Run/Direction (ALERT Wind)
  - 2 Road Ice/Surface Condition

HSE offers a complete array of ALERT2 and Concentrated ALERT products, including Transmitters, Repeaters, and Demodulators. Included is a user-friendly Graphical User Interface for easy set-up from either a desktop or laptop computer. There's also an ALERT2 Upgrade Program available for your Transmitters. Call or e-mail to learn more at 1-800-275-2080; [sales@highsierraelectronics.com](mailto:sales@highsierraelectronics.com).



## INNOVATION SITE DESIGN

### Mohave County, AZ

Mohave County's Flood Control Division has installed a series of uniquely designed environmental monitoring stations.

The first of these sites, Highland Wash, was installed near the intersection of Hwy 95 and the Bullhead Parkway near Bullhead City. The station measures storm water runoff from the Black Mountains as it flows past the Laughlin /Bullhead International Airport.

The sites are placed in dry washes to measure flash flooding. The concrete pillar ensures the standpipe and sensor can withstand high volume flows, scour, and random debris. The summer monsoon months of July through September pose the greatest threat of flash flooding, but flooding can occur at any time.



Highland Wash Standpipe

For the Sacramento Wash station, the standpipe is 24" in diameter, 20' below the surface, and 10' above ground. HSE's Telemetry Cabinet is used to house the data transmitter and mount the antenna and solar panel. This wash is 1,320 square miles. The 100 year flow would be roughly 120,000 CFS.

#### Sacramento Wash at Needle Mountain w/Telemetry Cabinet



## WELCOME

Patricia Nelson recently joined HSE's Technical Sales team. Pat has over ten years experience fostering long-term business relationships while performing environmental monitoring studies for private utility and industry clients in Northern and Central California. Most recently she was a Senior Management Consultant and Environmental Services Manager for HDR Engineering, Inc. Please join us in welcoming Pat. She can be reached at 1-800-275-2080 x10 or by e-mail, [pnelson@highsierraelectronics.com](mailto:pnelson@highsierraelectronics.com).

## DAM SIGNIFICANT

Shasta Dam, an arch dam across the Sacramento River at the north end of the Sacramento Valley in California is shown here during its construction in June 1942. The dam mainly serves long-term water storage and flood control in its reservoir, Shasta Lake, and also generates hydroelectric power. At 602 feet high, it is the ninth tallest dam in the U.S. and forms the largest reservoir in California.



## ADVICE FROM THE FIELD

### Tip: Preventing birds from roosting

Ron Flockhart, Engineering Assistant II  
County of San Joaquin, CA

In the San Joaquin/Delta area of northern California, birds can have a negative impact on rainfall totals when they roost on a rain gauge top section. We developed a solar panel bracket that sits slightly below the rain gauge funnel to allow birds to land there rather than over the funnel.



Answers to Sierra Summit Challenge on back page

1. True
2. D
3. True. As unlikely as it might seem, in the hot tropical African county of Tanzania, there is a glacier at the top of Mount Kilimanjaro.
4. A or C