

# Community Environmental Monitoring Program (CEMP)



CEMP at DRI is a multi-decade citizen science program consisting of a network of radiation and weather monitoring stations located in communities surrounding and downwind of the Nevada National Security Site (NNSS). As a joint effort of DRI and the Department of Energy's National Nuclear Security Administration Nevada Field Office (NNSA/NFO), the CEMP monitors airborne and downgradient groundwater environments in Nevada, Utah, and California for radioactivity that is a result of past or ongoing activities at the NNSS.

The CEMP employs local citizens as community environmental monitors (CEMs) to manage the stations. The CEMs, many of whom are local science teachers, are responsible for monitoring the equipment, collecting regular air samples, and serving as points of contact for residents in their communities. In addition to making sure the stations are operating properly, the CEMs attend training courses conducted by DRI and the NNSA/NFO so they can educate their communities about the monitoring program and provide the data results from their station and other stations within the CEMP network. CEMs are effective liaisons between local and federal entities because they are trained to understand the results of the environmental monitoring and are knowledgeable about subjects ranging from radiation detection to local environmental conditions.

To keep the public informed of the monitoring results, the stations are publicly accessible and quarterly and annual reports of the results are published and distributed throughout the network communities. The reports provide summaries of average values for each station and the entire network.

The data are also updated in near real-time on the CEMP website: [cemp.dri.edu](http://cemp.dri.edu)

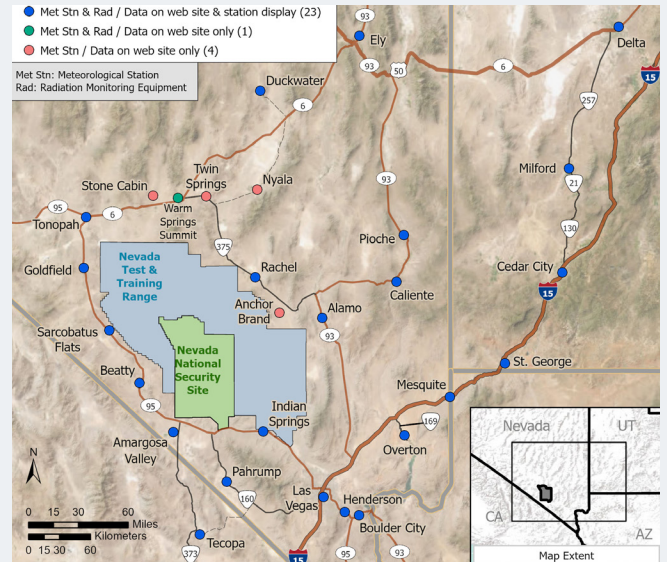
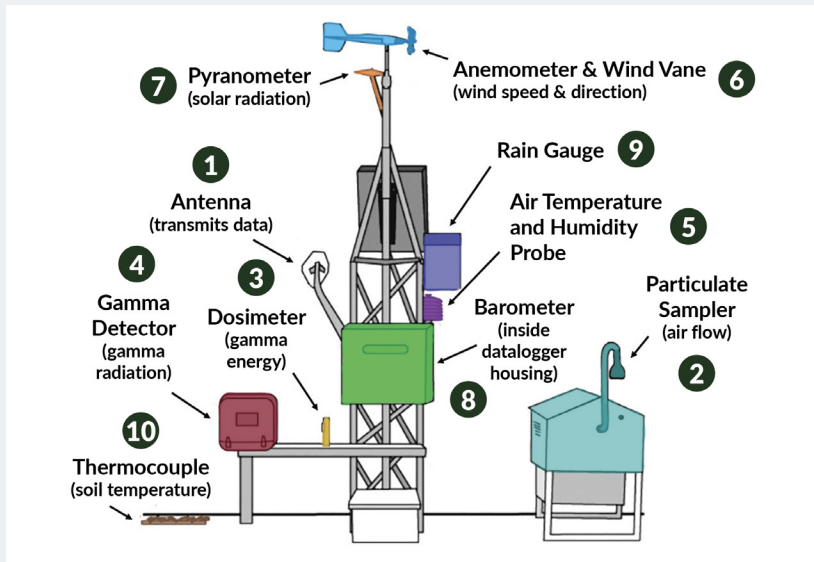
## RESEARCH GOALS

- Monitor airborne and groundwater environments for radioactivity
- Involve community members in the monitoring process
- Conduct public outreach activities
- Improve data availability



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CLOCKWISE:  
CEMP Station Instrumentation Diagram; CEMP Network Map.

## STATION EQUIPMENT & CAPABILITIES

**PARTICULATE SAMPLER** – This air sampler pulls approximately two cubic feet of air per minute through a paper filter to capture airborne particles. The filter is collected regularly and analyzed by an independent laboratory for alpha, beta, and gamma radioactivity (Equipment #2).

**DOSIMETER** – This small device measures ionizing radiation from all sources, including natural radioactivity from cosmic and terrestrial sources and from man-made radioactive sources (Equipment #3).

**EXPOSURE RATE RECORDER** – This piece of equipment measures background gamma radiation exposure rates. This exposure rate can be observed in real-time at the station and near real-time online. Natural sources of background gamma rays include local geologic formations and cosmic radiation from outer space (Equipment #4).

**WEATHER INSTRUMENTS** – Since changes in certain meteorological conditions are known to affect ambient radiation readings, weather instruments are included at each station to aid with interpretation of the readings. These instruments measure precipitation and barometric pressure (both known to cause changes in ambient radiation readings), air temperature and humidity, soil temperature, wind speed and direction, and solar radiation (Equipment #5–#10).

## STATION LOCATIONS

### NEVADA

- Alamo
- Amargosa Valley
- Anchor Brand Ranch
- Beatty
- Boulder City
- Caliente
- Duckwater
- Ely
- Goldfield
- Henderson
- Indian Springs
- Las Vegas
- Mesquite
- Nyala Ranch
- Overton
- Pahrump
- Pioche
- Rachel
- Sarcobatus Flats

### UTAH

- Stone Cabin Ranch
- Tonopah
- Twin Springs Ranch
- Warm Springs Summit
- Cedar City
- Delta
- Milford
- St. George – Bloomington Hills

### CALIFORNIA

- Tecopa



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We are Nevada's non-profit research institute, founded in 1959 to empower experts to focus on science that matters. We work with communities across the state – and the world – to address their most pressing scientific questions. We're proud that our scientists continuously produce solutions that better human and environmental health. At DRI, science isn't merely academic – it's the key to future-proofing our communities and building a better world. For more information, please visit [www.dri.edu](http://www.dri.edu).