PROJECT: WEATHER STATION AND WATER LEVEL MONITORING
CLIENT: BLODGETT FOREST RESEARCH STATION
LOCATION: CALIFORNIA
YEAR: 1995

Weather Station being installed on 130 ft. Triangular Instrument Tower

Intermountain Environmental was contracted to assist with the design and installation of a water level monitoring system and to replace an old weather station system for the Blodgett Forest Research Station.

Application Notes:

Blodgett Forest Research Station is in the Sierra Nevada Mountains West of Sacramento, California, near a town called Georgetown. The research station had a weather station that needed to be updated and several small streams that needed to be monitored for runoff.

Installation and System Design:

R2 Data logger with attached FP10C Float & Pulley Sensor being

The weather station required the installation of sensors at two levels, 10 ft. and 130 ft. Using climbing gear Intermountain Environmental personnel installed new sensors to monitor wind, solar radiation, air temperature and relative humidity at the two heights. All of the sensors are measured and data is recorded by a Campbell Scientific CR10X data logger with an SM192 Removable Data Storage Module attached to it to allow the operator to collect data by swapping out an empty storage module for a full one, then downloading the data from the full storage module back at the office PC.

The weather station project was completed in the summer of 1995. In the winter of 1995 Intermountain Environmental personal returned to install four more monitoring sites on the Research Station. Two sites were instrumented with water level monitoring systems and two others with precipitation monitoring systems.

The water level monitoring sites consisted of a 24" corrugated pipe that was used to create a stilling well on a small stream.

A flat piece of metal with a half moon hole was welded to the top of the pipe. A steel box was hinged and welded to the plate so that it could be closed over the instrumentation to prevent vandalism. A (R2) data logger attached to a (FP10C) potentiometer float and pulley sensor was used to monitor water level on 15-minute intervals throughout the year. The float and pulley sensor was chosen because it is relatively inexpensive, requires little maintenance, and can operate even when temperatures are below freezing. The R2 data loggers were used because they were simple to use and were able to operate for almost a year on just two 9V alkaline batteries. This eliminated the need for a larger power supply and a solar panel. A (ENC810) fiberglass enclosure housed the data logger. The enclosure and the water level sensor were mounted to the top each stilling well.

The precipitation gauge sites consisted of R2 loggers attached to (RG5256) Rain Gauges with (RG2541) All Season Snowfall Adapters installed on them. This allowed for precipitation to be monitored throughout the winter. The snowfall adapters were removed during the summer to monitor rainfall.

For Information on this project or these products please contact:

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