

MAPS SYSTEM TEMPORARY WELLHEAD MARKER BUOY

Automatic Power is offering a solar-powered heavy-duty BL620 steel buoy with a GPS position reporting system as a marker over temporarily abandoned well heads. The MAPS buoy is a cost-effective method in complying with **30CFR250.703(b)**--Minerals Management Service requirements for protection of temporarily abandoned wells. Recently, an operator chose, with the permission of the Minerals Management Service, a temporary buoy marking system rather than a conventional "net guard". Due to the immediate requirement for the system, Automatic Power was contracted to design a specialized mooring, power, lighting, and position reporting system. The buoy system with position and status reporting system was several times more cost-effective solution than a special "net guard" for the large "template" placed on the seafloor. After approximately nine months on location the buoy was removed and the well placed on production.

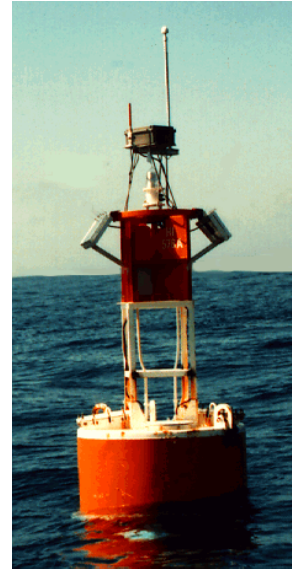
Designated the MAPS (**M**onitoring **A**nd **P**osition reporting **S**ystem), the solar powered, integrated buoy monitoring and position reporting system incorporates advanced, state-of-the-art microprocessor-based light control, a Global Positioning System receiver with a Marine GPS antenna, RS-232 communications interface, and satellite system radio.

The MAPS buoy reports its position twice daily via satellite communications link to an earth station where the data is placed on the Internet. The customer accesses a website to obtain the data. In addition to the position, the buoy also reports status of the lighting and power system.

The equipment is mounted on a duplex lantern stand with the FA-249 lantern mounted below the radio and GPS antennas. The radio, system controller card, GPS receiver and RS-232 interfaces are mounted in a NEMA-4X enclosure attached to the radar reflector of the buoy.

Light control is performed by the APCL-5 FLASHCHANGER[®] which includes a six-place lampchanger, selectable flash rhythms, solar charge control and blocking diode, RS-232 serial communications port for monitoring and control, and photocell control.

The highly efficient reporting system consumes approximately 100 ma at 12 volts making solar power the preferred powering option.



The BL-620 buoy is a standard U. S. Coast Guard design which features a ¼ " steel plate body and a steel tower section incorporating a radar reflector. This 6000 lb buoy has a 20 foot overall length and a hull diameter of six feet. A tailtube buoy with a focal height exceeding 10 feet, the BL620 is designed to translate wave forces into vertical movements which maintains the system electronics a safe distance above the ocean surface.

The mooring is a modular design that is easily adaptable to mooring of buoys from 50 ft to 300 ft. Under 50 ft a conventional chain mooring system is recommended. The buoy and mooring system are a proven design capable of extended periods of operation in open ocean conditions offshore Gulf of Mexico.

As these marker buoys may need to be deployed during less than optimum sea conditions, the steel construction of the buoy coupled with specialized solar array system design and packaging of the radio/GPS system minimize the risks of damage during deployment.

Buoys are available for lease or purchase and are kept in stock ready for rapid deployment (one week advance notice of need is requested).