

Real Time Data for Remediation

Summary

Health physicists from the CH2M HILL Plateau Remediation Company (CHPRC) Soil & Groundwater Remediation Project (SGRP) collaborated with Berkeley Nucleonics Corporation (BNC), San Rafael, California, to modify the SAM 940 isotope identifier instrument to be used for nuclear waste remediation. The SAM 940 was initially capable of isotope identification with GPS, but required system modification to enable the following additional capabilities:

- **Alarm and automatically start an acquisition at a preset value for individual isotopes**
- **Map gross counts and counts for individual isotopes with GPS coordinates, time and date (this is referred to as data logging with a one-second time resolution)**
- **Data logging can include isotopic or spectral data which corrects for background changes during surveys**
- **Instantaneously display isotopes as they are detected in the environment**
- **Perform GPS data logging and spectral acquisition simultaneously for detail mapping**

These modifications coupled with existing capabilities of the SAM 940 have proven to be invaluable during remediation activities, reducing disposal costs by allowing swift remediation of targeted areas that have been identified as having isotopes of concern (IOC), and eliminating multiple visits to sites by declaring an excavation site clear of IOCs before demobilizing from the site. These advantages are enabled by accumulating spectral data for specific isotopes that is nearly 100 percent free of false positives, which are filtered out in real time. The data is also contained on a CF memory card in a format lending itself to mapping remediated areas.

The SAM 940 system is used to support remedial activities by pairing its ability to identify IOCs with its sensitive detection capability. Its built-in alarm informs the user of the presence of activity above the set threshold. Then the activity is identified as an IOC needing remediation or potentially naturally occurring radioactive material (NORM) not requiring cleanup. This ability has reduced disposal costs of the project by better targeting remediation areas.

Set up your demonstration of the latest technology in nuclear remediation. Isotope specific data logging in hand-carts or small vehicles with Eagle-L. Features include:

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Contact us for details or to arrange a technology demonstration at the Waste Management Symposium, February 27 – March 3 at the Phoenix Convention Center.

SAM 940 Defender with GPS and Data-Logging mounted in Cab



Large Volume NaI Detector in Shock Absorption Package