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FIRST LINE OF DEFENCE: THE AIR MONITORING UNIT

THE ERCB IS COMMITTED to protecting Albertans, and an important first line of defence used every day is the mobile air monitoring unit (AMU).

The AMU is a multifunction air monitoring/incident command vehicle that employs state-of-the-art equipment to detect gas leaks. An AMU is generally deployed

- when a complaint is received regarding off-lease emissions of hydrogen sulphide and sulphur dioxide associated with oil and gas development,
- in response to an incident such as a blowout, a leak, or another type of critical event,
- during routine inspections of oil and gas facilities, and
- as part of nonroutine inspections, usually for something out of the ordinary.

The ERCB commissioned its first mobile monitor—a modified station wagon—in the late 1970s. In 1990, the AMU was fitted with ultraviolet analyzer technology and housed in a Suburban truck. A decade later, the multistakeholder Public Safety and Sour Gas committee, established to improve sour gas regulation in Alberta, recommended that the ERCB enhance its capability to conduct air monitoring, and in 2003 a second AMU was added. Two new AMUs built in 2006 use innovative technology and are contained in Ford E250 Econoline vans. In early 2009, a fully updated AMU replaced one of these units.

One AMU is based at the ERCB's Midnapore Field Centre in south Calgary and the other at the Drayton Valley Field Centre.

The AMUs bristle with high-tech gear, such as air monitoring equipment, a variety of communications devices, wind speed and direction monitoring equipment, and 3-D topographic mapping software.

The current units have many advantages over their predecessors. The 3-D topographic mapping system lets the user call up a 3-D map of any area of Alberta, analyze it, determine how emitted gases will move, and thereby choose the best spot to place the vehicle to pick up air readings.

The AMUs can also carry with them the forward-looking infrared camera (FLIR), an infrared video camera that uses the same technology as military aircraft. This device is a proven method of detecting gas leaks, able to pinpoint the tiniest emission from an energy facility.

Recent updates also allow operators to send back data to the field centre in real time and to transmit images quicker than ever before. In the past, the AMUs had to return to the nearest ERCB field centre to send photographs and information electronically.

Ergonomic improvements allow the operators to stay on the job for longer periods of time without suffering ill effects.

One of the main features that distinguish the ERCB AMUs from other similar air monitors is that they run the instrumentation off of a clean power inverter.

Wind speed and direction monitoring equipment

Air monitoring equipment powered by its own system

3-D topographical mapping software

A vast array of communications equipment

Notebook computers that contain all relevant data on all Alberta's energy facilities, and full high-speed Internet access

This means that the onboard equipment is cheaper to run and produces fewer emissions and pollutants and less noise.

The AMUs use of highly advanced automated technology makes it easier for operators to use, which means that more ERCB staff can be trained to use them across the province. That's good news for all Albertans. ✦