Purpose

This wellsite open hole guideline has been created to assist licensees/operators and contractors in better understanding and therefore minimizing hazards associated with open holes on wellsites. These hazards include, but are not limited to; mouseholes, ratholes and sumps.

Open holes left on wellsites have caused worker injury and temporary worker entrapment. If unaddressed this poses an ongoing hazard to the public and the environment (see *Enform Safety Alert #52-2005*).

Responsibilities

The wellsite licensee (typically the oil and gas producer company) is responsible for ensuring that hazards created by open holes are minimized as described below.

Elimination

1. **During wellsite operations** open holes must be properly marked and protected with barriers before and during wellsite operations. There are a number of ways to suitably fence and flag an open hole. Consideration must be given to the durability and visibility of these barriers.
2. **Post wellsite operations** open holes must be filled in a manner that prevents future slumping, which would result in a continuation of the hazard if not done properly. If it is not reasonably practicable to properly fill an open hole following wellsite operations, the licensee must erect barriers and flags to protect against potential injury. A physical barrier must be erected to control the risk. Flags and stakes alone are not acceptable.

Other Considerations

Minimizing the hazards from wellsite open holes by planning for proper filling is best dealt with during the pre-planning stages of well construction.

Licensees are also responsible to control existing open hole hazards that may exist at older wellsite locations. (Again, see *Enform Safety Alert #52-2005*).

Wellsite Open Hole Filling Process

There is no single “best” method for filling open holes on wellsites. Licensees should consider the condition and stability of the hole and the presence of any fluids or debris which may have accumulated in the hole.

Wellsite Open Hole Filling Recommended Practices

Cement: Cement can be very effective as a fill, and is specifically required in federal jurisdictions. Cementing can be used in addition to the primary cementing service, but it must be planned ahead with the service provider to ensure adequate cement volumes are available. Any cementing operation to fill wellsite open holes must be treated as a separate operation; not as part of the primary cementing service. Proper cementing practices must be followed to protect against potential worker injury while filling is taking place and future slumping or environmental issues (i.e. displacing fluids from within the hole).

If using cement as a fill, the following precautions are required:

1. Hole is to be clean and empty of debris
2. Treating pipe supplied by the client must be ‘run-in’ to the bottom of the hole and secured from uncontrolled movement
3. For drilling operations, the drilling contractor will supply a dedicated pipe for filling rat holes (flushed and free of obstructions). A suitable connection from the treating pipe to the cement lines is to be provided.
4. Cement will be pumped at appropriate rate and density as per program
5. The cement top must be sufficiently below the surface so that it does not provide a hazard to subsequent operations on the lease/land

Gravel / Dirt: Gravel and dirt must be applied using effective and generally accepted backfill practices. It is necessary to consider compaction and settling forces which could lead to a partial or temporary control of the hazard.

Conclusion: Open holes on wellsites pose a hazard during operations and after the conclusion of operations. If Site Supervisors are unclear regarding proper identification or control of the hazard this must be formally communicated to the licensee.