TECHNOLOGY SAFETY DATA SHEET
BMC™

SECTION 1: TECHNOLOGY IDENTITY	
Manufacturer's Name and Address: EnviroWall, Inc. 9433 Highway 23, Belle Chasse, LA 70037	Emergency Contact: (803)-641-6203
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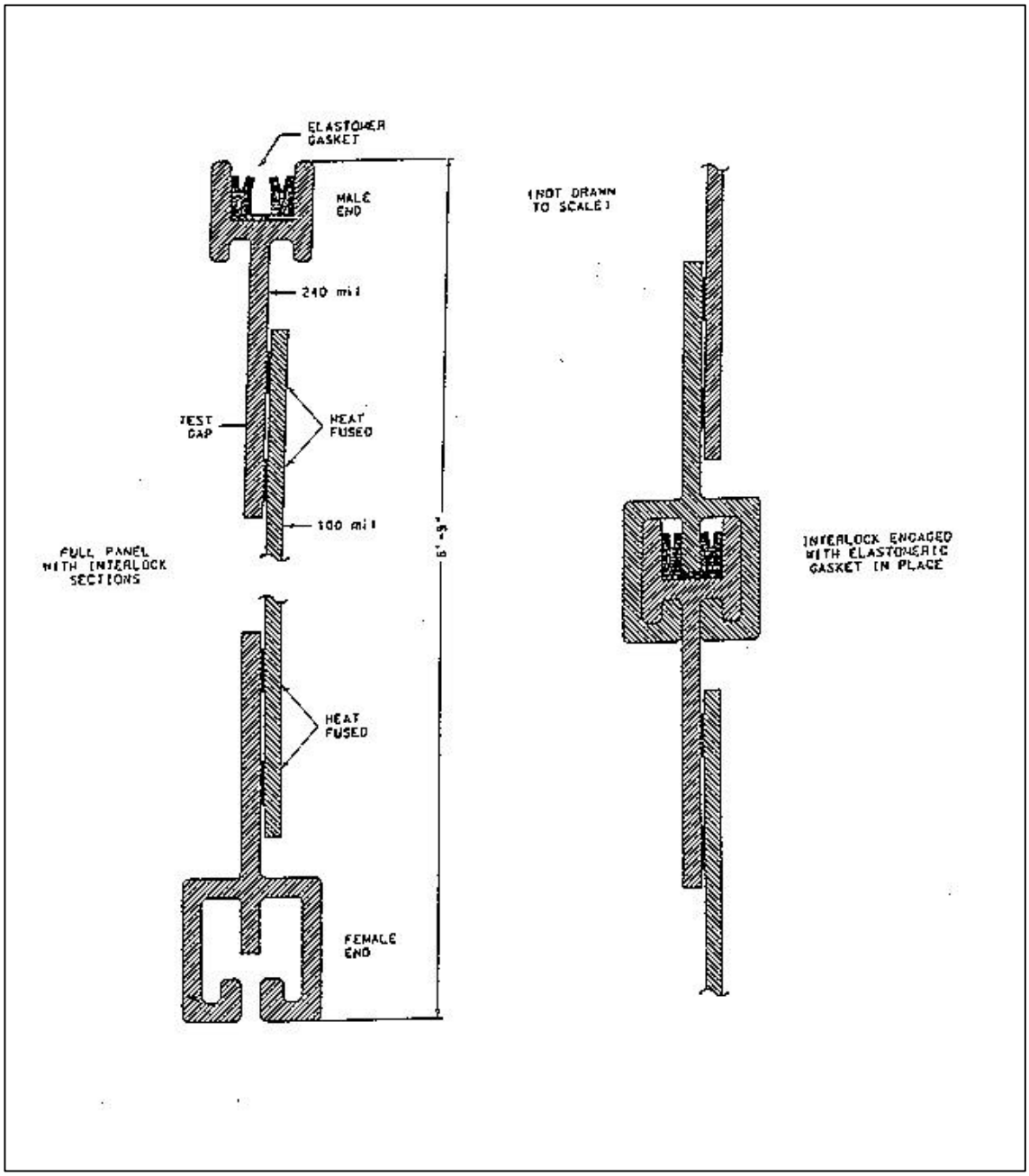
	Date Prepared:
Other Names: EnviroWall System	Signature of Preparer:

SECTION 2: PROCESS DESCRIPTION

Barrier Membrane Containment (BMC™) is a high-density polyethylene membrane (HDPE) groundwater barrier and pass-though system, with applications ranging from plume control and containment, to groundwater manipulation, coupled with in-site treatment. BMC™ system can function as a permeable or impermeable reaction wall, a cut-off wall, interceptor trenches, a barrier with collection and/or monitoring system, and a pass-though in a funnel and gate configuration. BMC™ can be inspected with a down-hole video camera, producing a permanent VHS format tape, insuring the integrity of the wall and the interlocking joints. The joints are sealed with a "U"-packing elastomeric gasket to prevent the flow of fluids or gases.

SECTION 3: PROCESS DIAGRAM



SECTION 3: PROCESS DIAGRAM

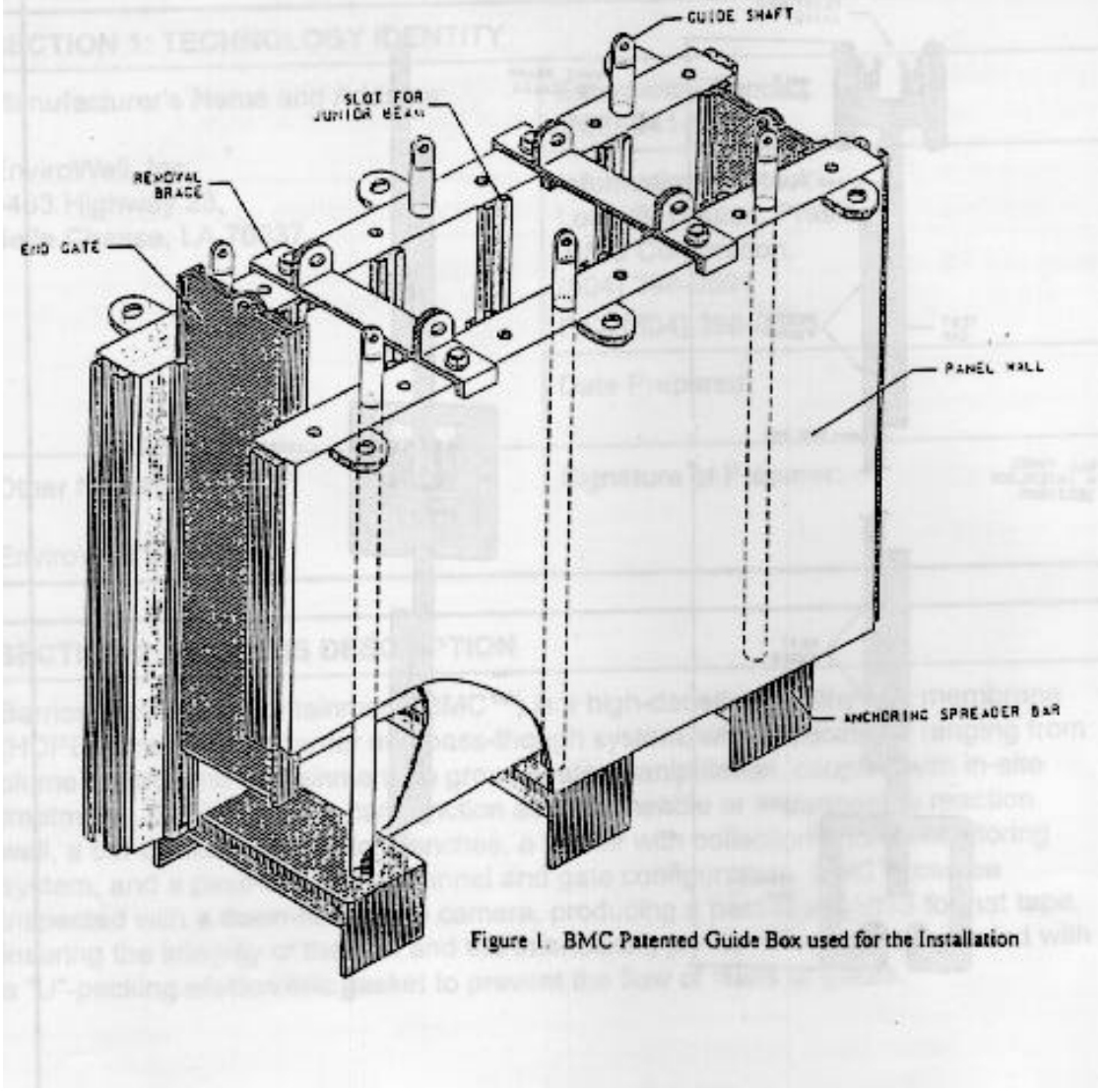


Figure 1. BMC Patented Guide Box used for the Installation

SECTION 4: CONTAMINANTS AND MEDIA

The technology does not pose any threat of contamination in and of itself. However, the excavation process may possibly expose to operators and ground workers to contaminants in the soil.

SECTION 5: ASSOCIATED SAFETY HAZARDS

Risk Rating of Hazard:

1 Hazard may be present but not expected over background level
2 Some level of hazard above background level known to be present – may cause injury and/or illness
3 High hazard potential – potential for severe injury and/or illness
4 Potential for imminent danger to life and health

A. ELECTRICAL (LOCKOUT/TAGOUT)	RISK RATING: 2
Technology does not pose this threat in and of itself. Some risk could be present with the use of electrical tools. In such case, proper grounding of tools and other lockout/tagout protocols should be followed to ensure safety of personnel.	
B. FIRE AND EXPLOSION	RISK RATING: 2
Technology does not pose this threat in and of itself. Care should be taken when refueling equipment. Site characterization should expose any need for air monitoring and instrumentation of lower explosive limits of airborne contaminants.	
C. CONFINED SPACE ENTRY	RISK RATING: 1
Should not be undertaken in this installation process.	
D. MECHANICAL HAZARDS	RISK RATING: 4
Use of hand tools as well as placement of technology components may pose the following pinch points, struck by, and caught between hazards and fall from above.	
E. PRESSURE HAZARDS	RISK RATING: 1
Technology does not pose this threat in and of itself.	
F. TRIPPING AND FALLING	RISK RATING: 4
Excavation poses particular danger as well as the presence of technology components on or about the worksite. Additional tripping and falling hazards exist in association with the use of heavy equipment for installation.	

SECTION 5: ASSOCIATED SAFETY HAZARDS	
G. LADDERS AND PLATFORMS	RISK RATING: N/A
Platforms and ladders are not a direct part of this technology, but platforms may be required for use during installation. Platforms and their use must be in compliance with 29 CFR 1926.550.	
H. MOVING VEHICLES	RISK RATING: 4
The presence of multiple pieces of mobile equipment in relationship to a small area of operation may pose a significant danger. Sufficient warning devices such as horn, bells, lights and back up alarms should be utilized.	
I. BURIED UTILITIES, DRUMS, AND TANKS	RISK RATING: N/A
Not part of this technology.	
J. PROTRUDING OBJECTS	RISK RATING: 3
Technology protrudes from the trench, may pose tripping hazard.	
K. GAS CYLINDERS	RISK RATING: 2
Secondary hazard; may be used. Proper precautions indicated.	
L. TRENCHING AND EXCAVATIONS	RISK RATING: 4
Pose extensive hazard. The installation of the technology revolves around extensive excavation.	
M. OVERHEAD LIFTS	RISK RATING: 4
Placement of technology components require numerous overhead lifts. Proper precautions indicated.	
N. OVERHEAD HAZARDS	RISK RATING: 4
Presence of crane and other equipment utilized to hoist components may pose significant hazard.	

SECTION 6: ASSOCIATED HEALTH HAZARDS	
A. INHALATION HAZARD	RISK RATING: 2
Excavation may generate considerable amounts of respirable dust that should be monitored. Particular attention should be paid to contaminants in the soil. Diesel exhaust could pose a hazard.	
B. SKIN ABSORPTION	RISK RATING: 2

SECTION 6: ASSOCIATED HEALTH HAZARDS	
None present except for chemicals on site and solvents used in construction which are ancillary to technology process but need to be considered.	
C. HEAT STRESS	RISK RATING: 4
Ambient atmospheric conditions correlated with PPE levels need to be considered.	
D. NOISE	RISK RATING: 2
Technology does not present a noise hazard itself. Equipment used in the installation process may pose a noise hazard. Recommend that noise survey be conducted on equipment and surrounding area.	
E. NON-IONIZING RADIATION	RISK RATING: 1
None produced by technology. Soil conditions unrelated to technology may pose potential hazard.	
F. IONIZING RADIATION	RISK RATING: 1
None produced by technology. Soil conditions unrelated to technology may pose potential hazard.	
G. COLD STRESS	RISK RATING: 2
Technology does not produce a hazard, but ambient conditions need to be considered.	
H. ERGONOMIC HAZARDS	RISK RATING: 3
Lifting, bending, and pulling all present possibility of muscular/back injuries. Arm and whole body vibration represent an ergonomic hazard to the operators.	
I. OTHER	RISK RATING: 3
May produce hazards due to soil contamination and operations. Special consideration should be given to rain, snow, and ice with regard to slip, trip, and fall hazards and soil conditions for excavation.	

SECTION 7: PHASE ANALYSIS
A. CONSTRUCTION/START-UP
The construction phase presents the most potential hazards. Pinch points, slips/trips/falls, struck by/caught between, muscular/back injury, fall to below, excavation collapse, restricted communication, and fall from above hazards all exist.
B. OPERATION
Operation presents no potential hazards in and of itself. However, if a cell is installed,

SECTION 7: PHASE ANALYSIS

potential hazards may exist such as exposure to contaminants for operators and workers. Wearing of proper PPE can be used to safeguard against this hazard.

C. MAINTENANCE

No maintenance is necessary. This presents no potential hazards in and of itself.

D. DECOMMISSIONING

Pulling of the membrane could cause the need for guarding against contamination to the operators and the workers. This can be safeguarded against by wearing the proper PPE. Other potential hazards associated with decommissioning activities include exposure to contaminants for operators and workers, pinch points, slips/trips/falls, struck by/caught between, muscular/back injury, fall to below, excavation collapse, restricted communication, and fall from above hazards.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS

A. AIR MONITORING

Total dust and respirable dust should be monitored. Diesel fumes may also need to be addressed. Other site specific air monitoring may need to be done depending on the site contaminants. In addition, noise monitoring needs to be done.

B. WORKER TRAINING

Operator and worker training should be done in the areas of site specific potential hazards. Training needs to include HAZWOPER and HAZCOM, lifting techniques, ground control, fall protection, equipment inspection, emergency response, hand signals, OSHA 500, operator certification, hearing conservation, and heat stress issues.

C. EMERGENCY RESPONSE

Emergency response personnel should be available during all phases of construction. SOP's should include procedures to follow in case of an emergency. Training operators, workers, and observers in CPR and first aid is also recommended.

D. MEDICAL SURVEILLANCE

Operators' and workers' health should be monitored before and during the construction phase. With higher levels of PPE and hot weather conditions, operators and workers may be exposed to excessive amounts of heat. Frequent breaks and monitoring of vital signs is recommended.

SECTION 8: HEALTH AND SAFETY PLAN REQUIRED ELEMENTS

E. INFORMATIONAL PROGRAM

Workers must be trained as heavy equipment operators before engaging in the heavy construction activities required for the installation of the BMC™.

SECTION 9: COMMENTS AND SPECIAL CONSIDERATIONS

Noise generated by heavy equipment and higher levels of PPE restricted communication. Personnel working in the area should be familiar and/or have training on the use of proper hand signals.

Workers need to be aware of site specific hazards associated with the constant movement of heavy equipment. Proper warning devices on the equipment will also help prevent a collision with workers.

Only certified workers and operators should be permitted on the jobsite.