



2016
KENTUCKY RIVER
MINE RESCUE CONTEST
DAY 1

MH

**Judges Instructions
BEFORE CLOCK STARTS**

Show the pump to the team and explain that the pump is controlled by the command center. The rope attached is the power cable and discharge line and as they move the pump the rope will feed off to show the location and routing of the power cable and discharge line.

CHECKLIST AFTER CLOCK STOPPED

1. GET TEAM MAP AND BO MAP MAKE SURE BOTH ARE MARKED AND NUMBERED.
2. GET VISIO SD CARD IF TEAM IS USING IT, MAKE SURE THEY HAVE SAVED INFORMATION AND PUT IT IN TEAM NUMBERED ENVELOPE.
3. TELL TEAM TO LEAVE ALL CONTEST MATERIAL IN FAB.
4. FILL OUT FINAL MAP HAVE TEAM INITIAL.
5. GET TIME FROM TEAM TIME CLOCK AND HAVE CAPTAIN CONFIRM TIME.
6. BE SURE TO PICK UP TEAM PACKET.

**KENTUCKY RIVER MINE RESCUE CONTEST
SUPERINTENDENT STATEMENT DAY 1 AND DAY 2
JUNE 15 AND 16, 2016**

Thank you for coming to help us. You are located at the fresh air base of the Hazco #1 mine. This is a very large mine with multiple working sections and interconnected fans and air courses.

This morning 83 miners entered the mine. Around 9:00 am this morning the incident occurred. There was a loud rush of air out the portals and the CO system alarmed. The Responsible Person tried to contact the miners underground but was not able to contact anyone. We reported this to MSHA and contacted mine rescue teams. At 10:30 am fifty miners were able to escape. The other 33 miners are unaccounted for. There are multiple mine rescue teams working different areas of the mine at the same time you will be working.

A mine rescue team was able to explore to the area inby the area you will be exploring. They were stopped by unsafe roof in the number 1 entry, water roofed in number 2 entry and caved in number 3 entry. The team was able to setup a safe return and intake inby that you can use to ventilate through number 1 and 2 entries. The fan ventilating this area is exhausting and will pull air through the area you will be exploring if you do not maintain an airlock or you can stall both fans if they are pulling or pushing against each other. The area is currently air-locked inby the fresh air base.

The air is currently going across the fresh air base and the return has been established so you can send smoke, and any

gases out and they will not travel over any ignition source or unexplored area. The fan is currently blowing.

The mine has a history of bad roof, water and methane. The mine maps are up to date. We have a competent life line person to give and take life line signals if necessary.

Please find the 5 missing miners that were in this area of the mine that you will be exploring. Thank you and good luck.

PROBLEM DAY 1

BOTH FANS CAN BE TURNED OFF, AND REVERSED BUT CAN NOT BE STALLED DUE TO CAUSING DAMAGE TO THE FAN.

TO PREVENT STALLING ONE FAN HAS TO BE BLOWING AND THE OTHER EXHAUSTING WHEN USING BOTH FANS.

THE RETURN AND INTAKE OUTBY THE FAB AND INBY AREAS HAVE BEEN EXPLORED AND IS SAFE TO VENTILATE THROUGH.

ACCOUNT FOR ALL 5 MISSING MINERS THAT ARE IN THE AREA YOU ARE EXPLORING AND BRING SURVIVORS TO THE FAB

EXPLORE ALL AREAS OF THE MINE THAT CAN BE DONE SAFELY

PATIENT STATEMENT 1

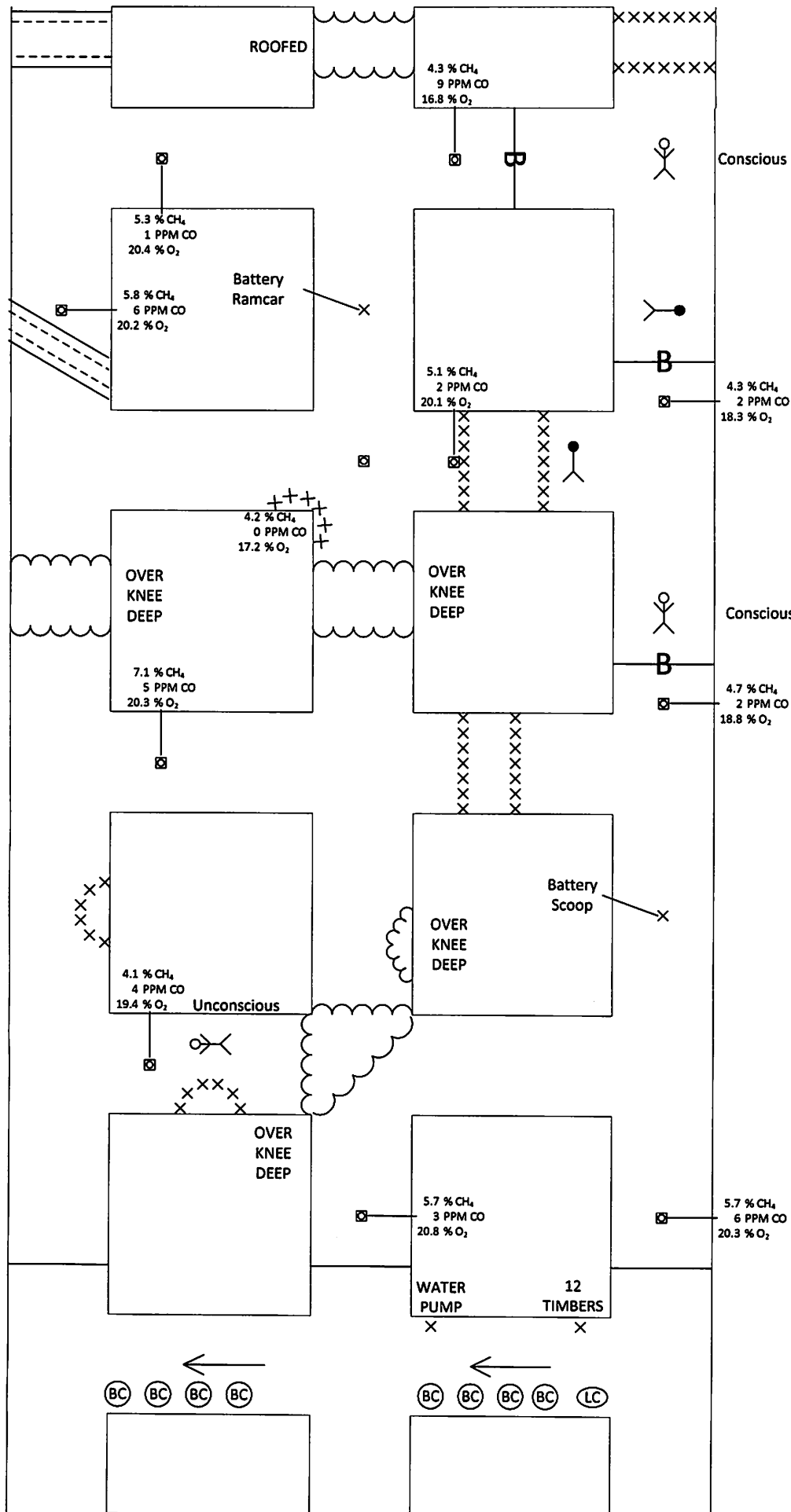
HELP!! GET ME OUT OF HERE.

PATIENT STATEMENT 2

HELP!! GET ME OUT OF HERE.

I AM GETTING DIZZY.

KENTUCKY RIVER 2016 DAY 1 PROBLEM MAP



KENTUCKY RIVER MINE RESCUE CONTEST DAY 1

JUDGES BRIEFING

Number 1 entry GT DI Airlock GT inby stopping DI

Number 2 entry GT DI Airlock GT inby stopping DI

Number 3 entry GT DI Airlock GT inby stopping DI

The teams can enter any entry they want to. We are setting this up as if they are entering number 3 entry first and you use extent of gases map. If they go up number 2 before number 3 you use extent of gases #2.

Team Stop before breaching stopping.

Team Check

Team Stop 1

Crosscut between 2 & 3 GT

Inby GT

Team Stop 2

Diagonal water GT DI

Outby GT DI at stopping

Team Stop 3

Crosscut between 2 & 3 GT DI RR

Inby GT DI at barricade

Patient 1 reads statement

Team Stop 4

Inby GT RR ZIG-ZAG at caved

Crosscut between 1 & 2 RR ZIG-ZAG at caved, touch patient, assess, DI finish RR

GT DI at water take patient to FAB under oxygen

Team Stop 5
Inby GT DI
Crosscut between 1 & 2 GT

Team Stop 6
Inby GT DI
Outby GT DI
Crosscut between 2 & 3 GT DI RR

Pump water 1
Ventilation 1
Pump water 2
Ventilation 2
Ventilation 3

Enter barricade GT
Touch patient assess most teams will take to FAB.

Team Stop 7
Crosscut between 2 & 3 body touch DI
GT DI RR at caved
Inby GT DI at barricade
Patient 2 reads statement.

Pump water 3

Team Stop 8
RR at caved ZIG-ZAG
GT Inby
Crosscut between 2 & 3 GT DI RR at caved
Crosscut between 1 & 2 GT

Team Stop 9

Inby GT DI RR at unsafe roof

Outby GT DI

Team Stop 10

GT DI at barricade

Patient 2 reads statement

Crosscut between 1 & 2 GT

Inby GT DI

Team Stop 11

Outby GT DI RR

Inby GT DI RR

Pump water 4

Ventilation 4

Enter barricade GT

Team Stop 12

Patient touch asses DI

Inby GT DI RR

Outby body touch DI GT DI at barricade

Take patient to FAB

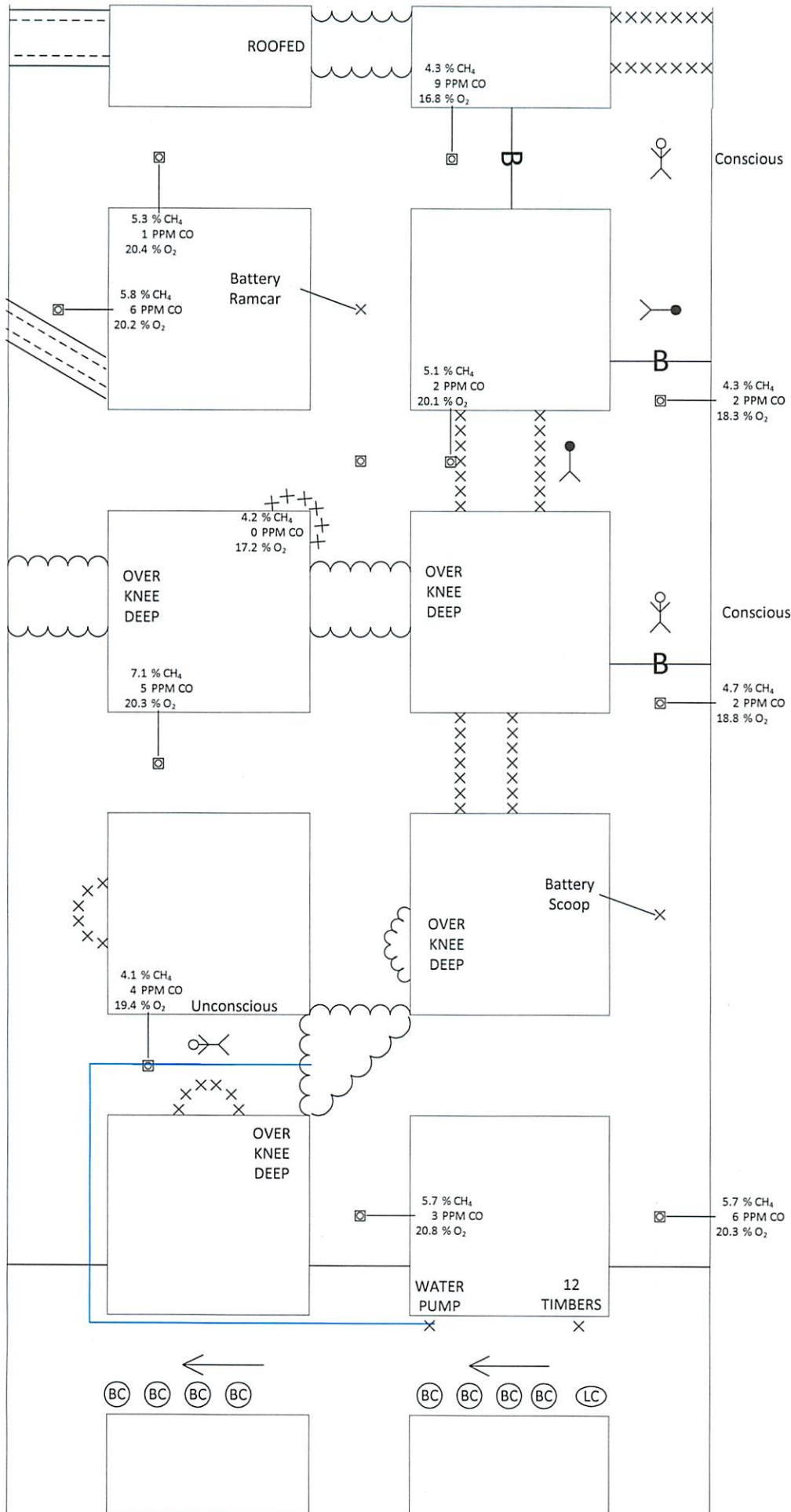
STOP CLOCK

The diagram illustrates a mine layout with various rooms and air flow paths. The rooms and their associated gas concentrations are as follows:

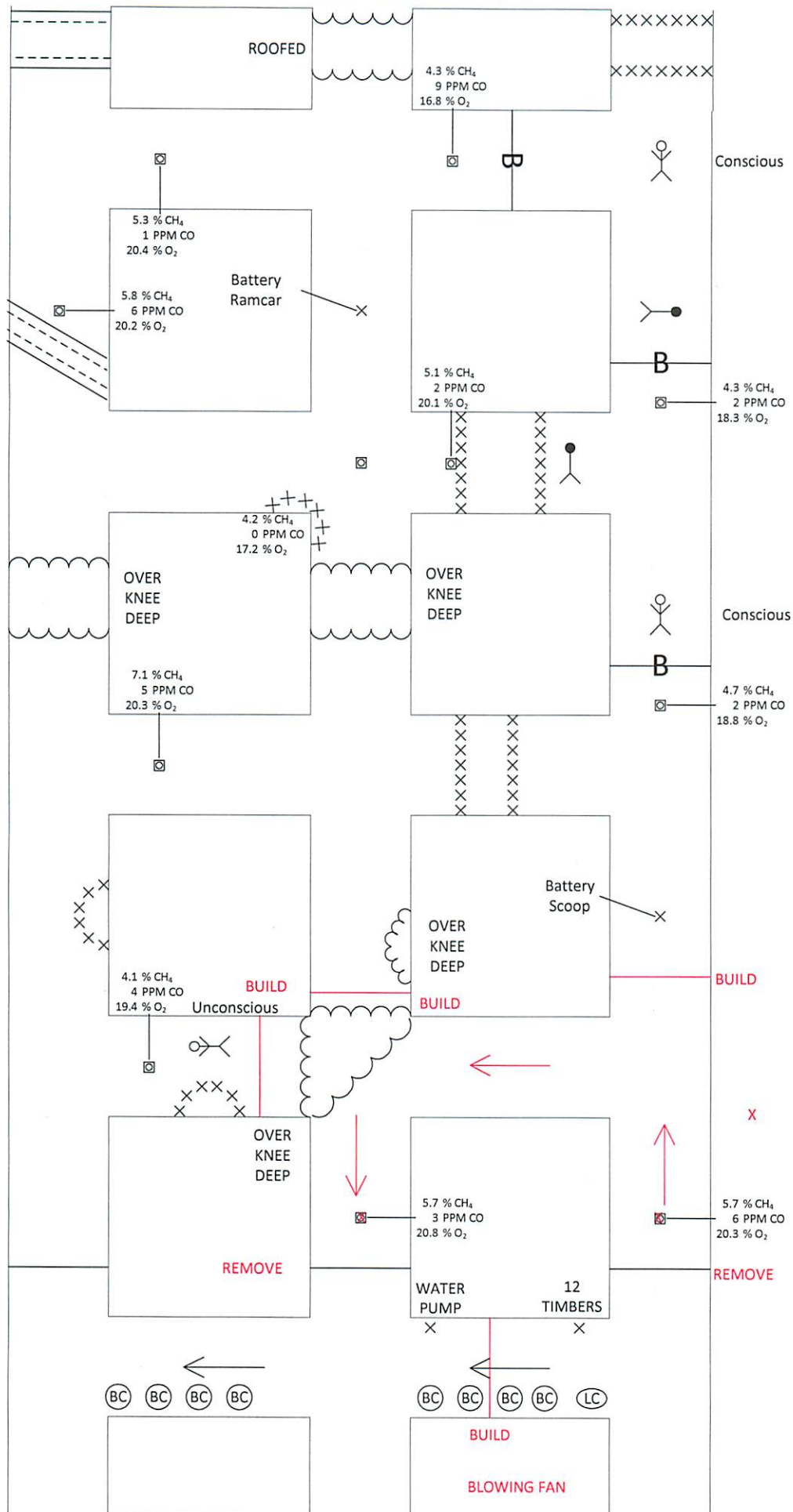
- ROOFED**: 4.3 % CH₄, 9 PPM CO, 16.8 % O₂
- Battery Ramcar**: 5.3 % CH₄, 1 PPM CO, 20.4 % O₂; 5.8 % CH₄, 6 PPM CO, 20.2 % O₂
- OVER KNEE DEEP** (Left): 7.1 % CH₄, 5 PPM CO, 20.3 % O₂
- OVER KNEE DEEP** (Center): 4.2 % CH₄, 0 PPM CO, 17.2 % O₂
- OVER KNEE DEEP** (Right): 5.1 % CH₄, 2 PPM CO, 20.1 % O₂
- Battery Scoop**: 4.1 % CH₄, 4 PPM CO, 19.4 % O₂
- WATER PUMP**: 5.7 % CH₄, 3 PPM CO, 20.8 % O₂
- 12 TIMBERS**: 5.7 % CH₄, 6 PPM CO, 20.3 % O₂

The diagram also shows air flow paths with arrows and symbols for gas concentrations (CH₄, CO, O₂) and personnel status (Conscious, Unconscious). The layout includes various rooms and areas, with some labeled as 'OVER KNEE DEEP' and others as 'Battery Ramcar', 'Battery Scoop', 'WATER PUMP', and '12 TIMBERS'. The diagram is divided into sections by dashed lines, and the overall layout is enclosed in a rectangular frame.

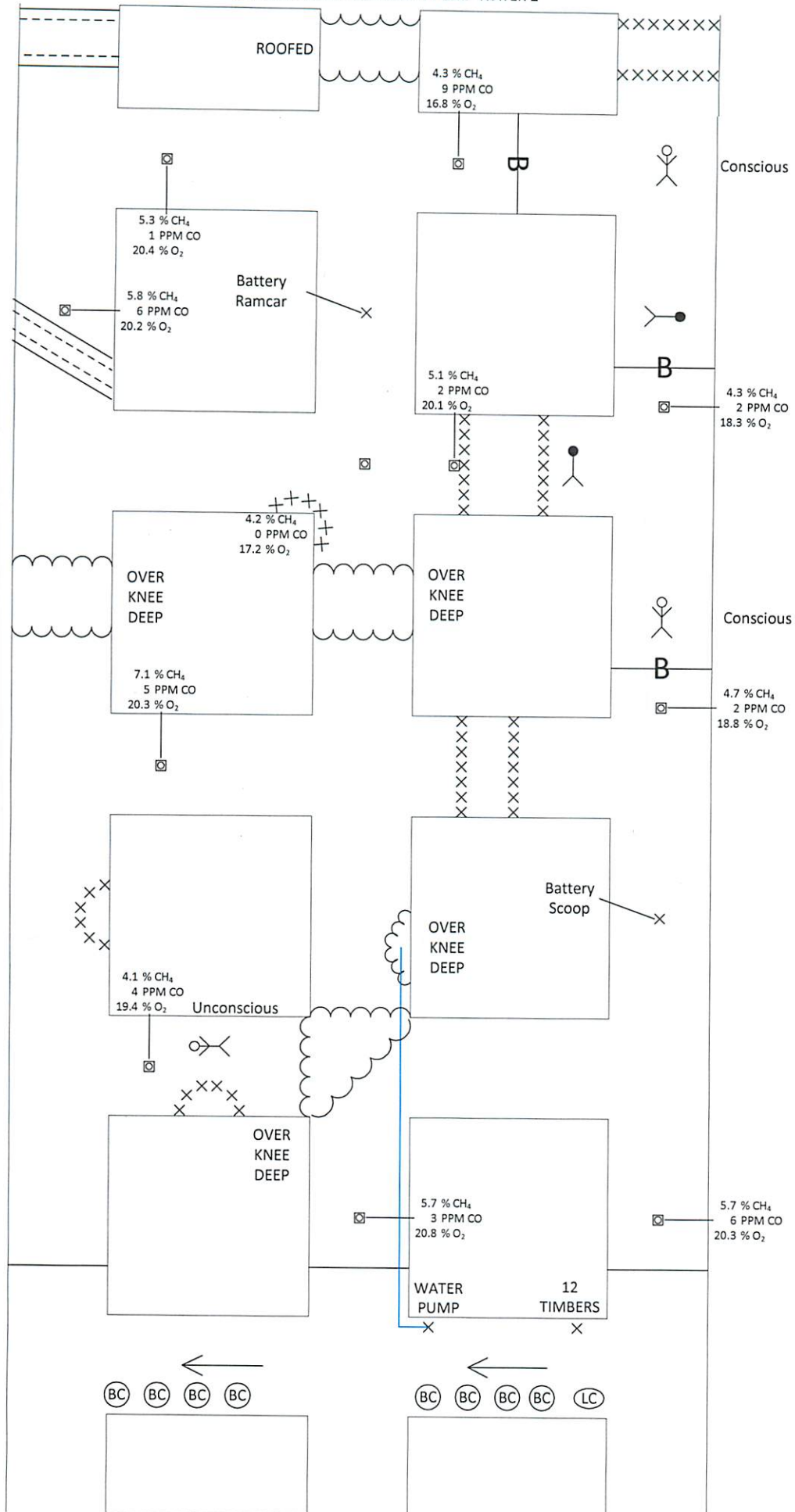
KENTUCKY RIVER 2016 DAY 1 PUMP WATER 1



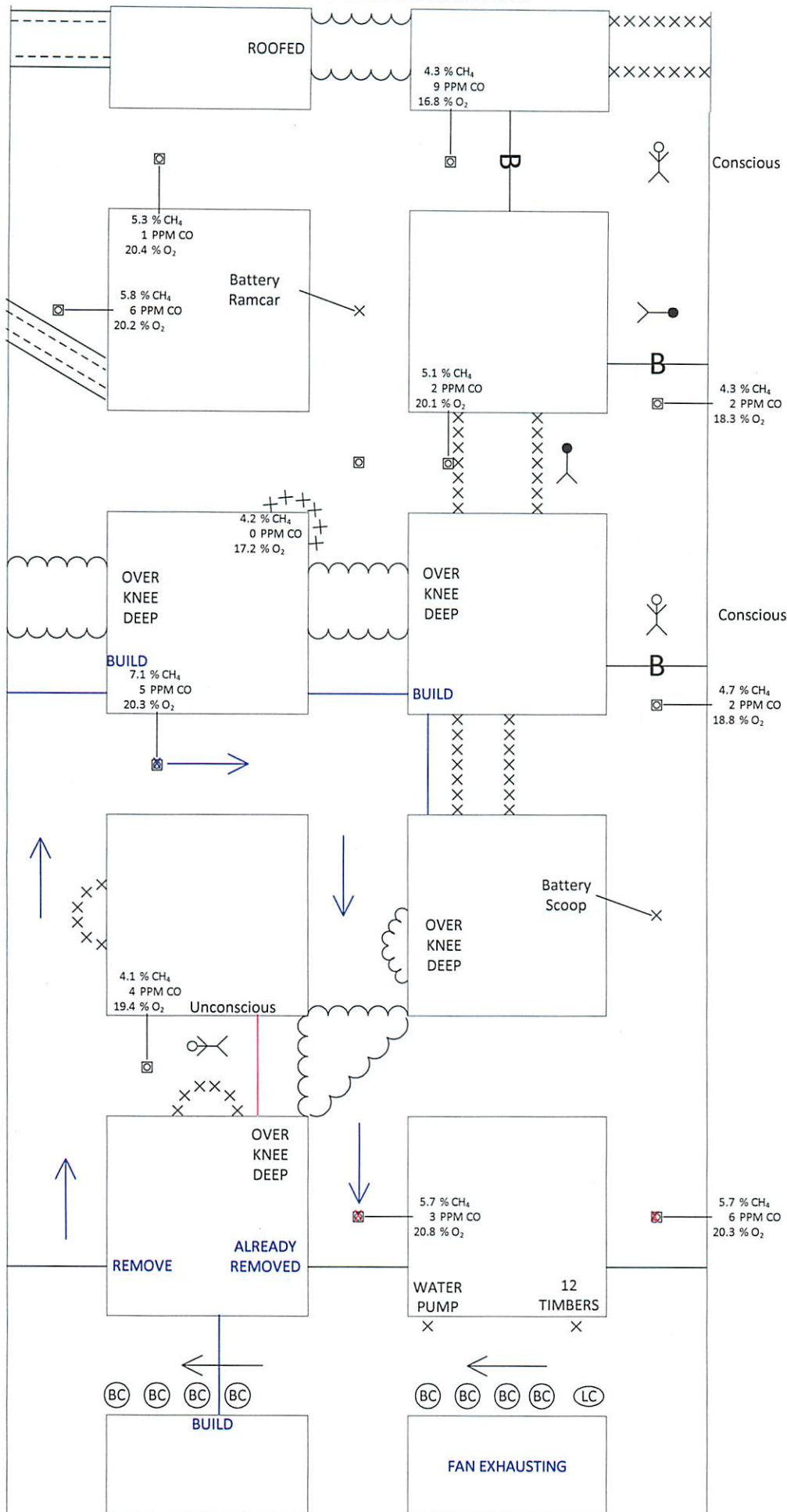
KENTUCKY RIVER 2016 DAY 1 VENTILATION 1



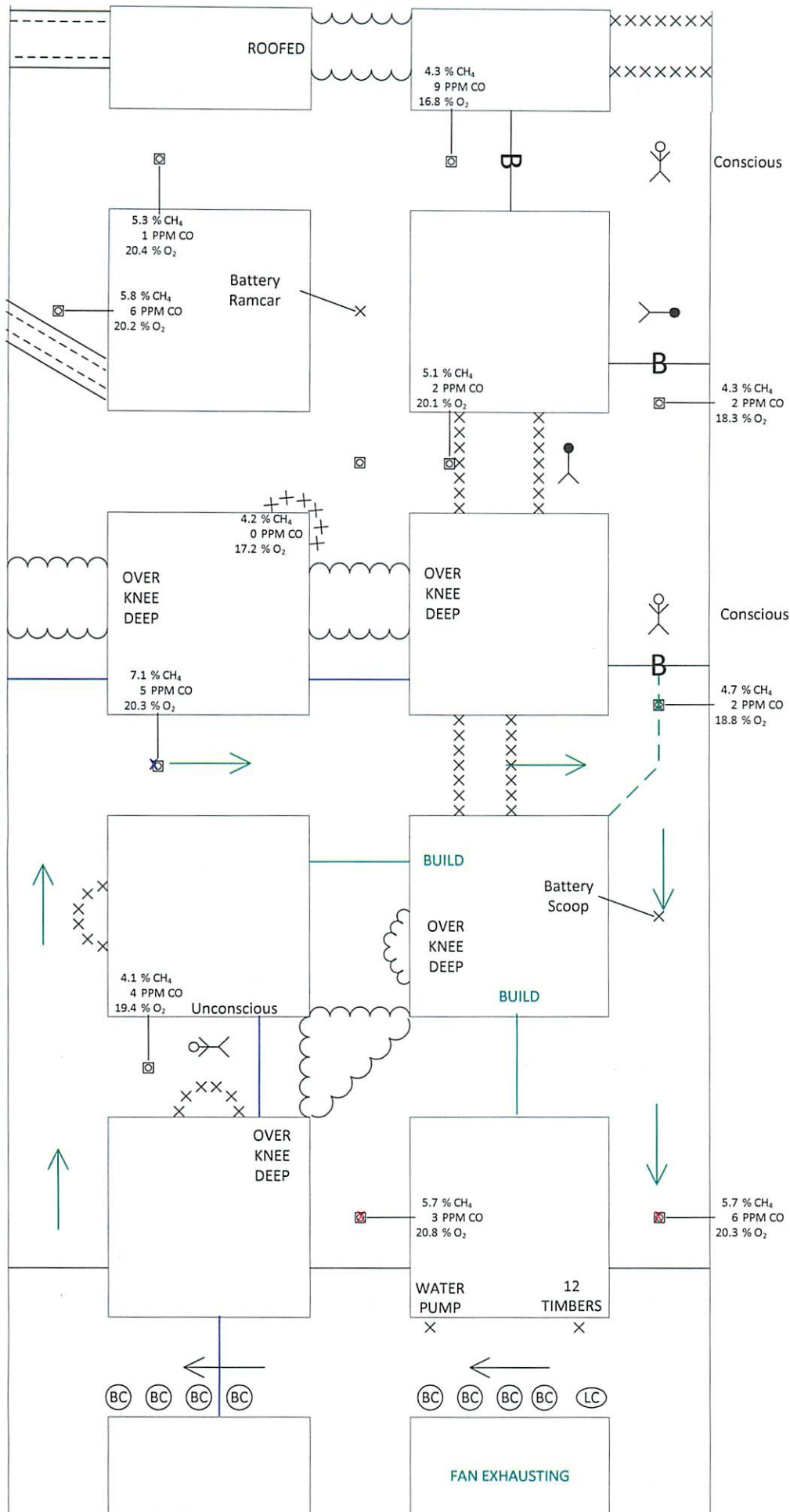
KENTUCKY RIVER 2016 DAY 1 PUMP WATER 2



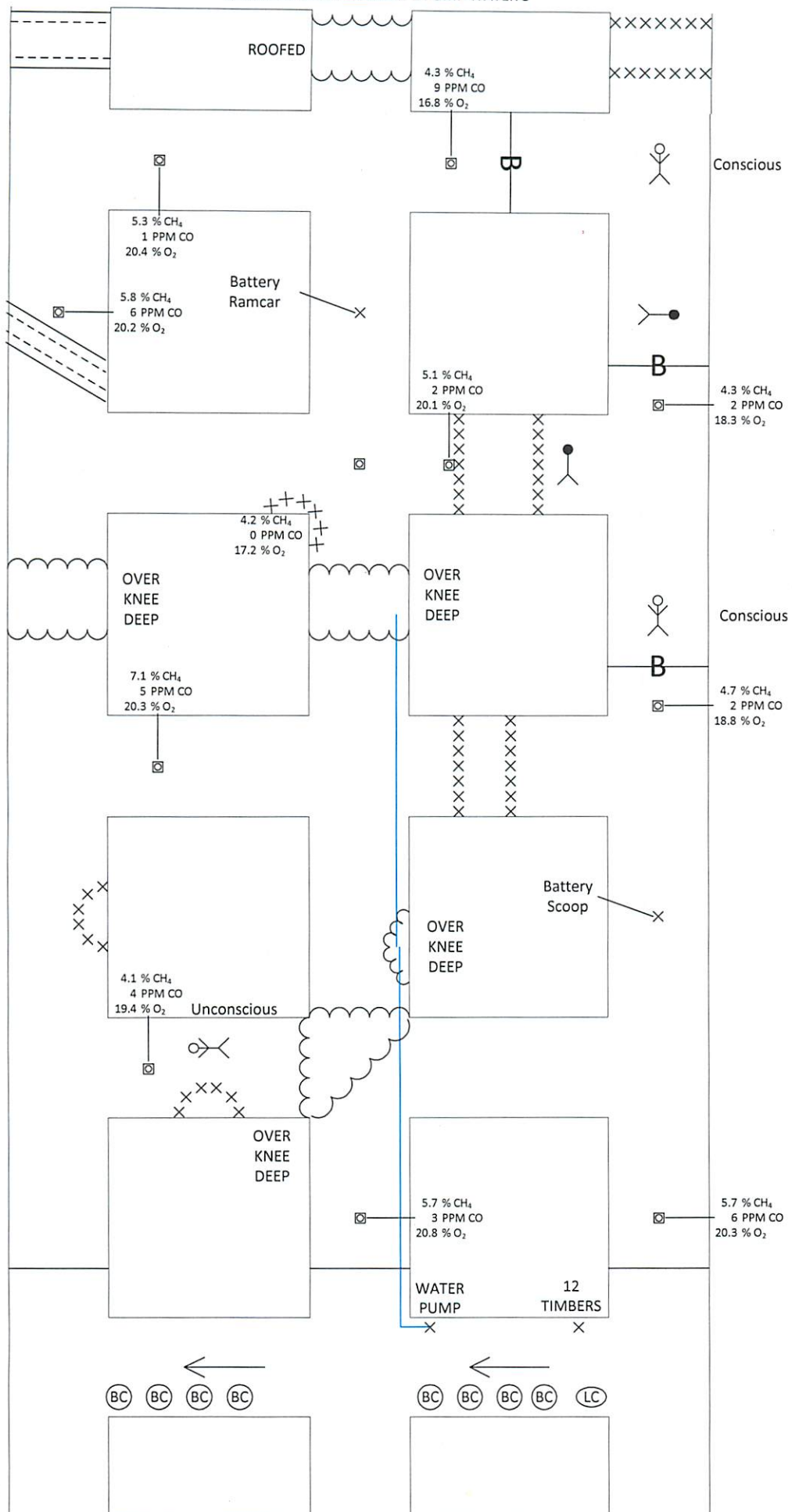
KENTUCKY RIVER 2016 DAY 1 VENTILATION 2



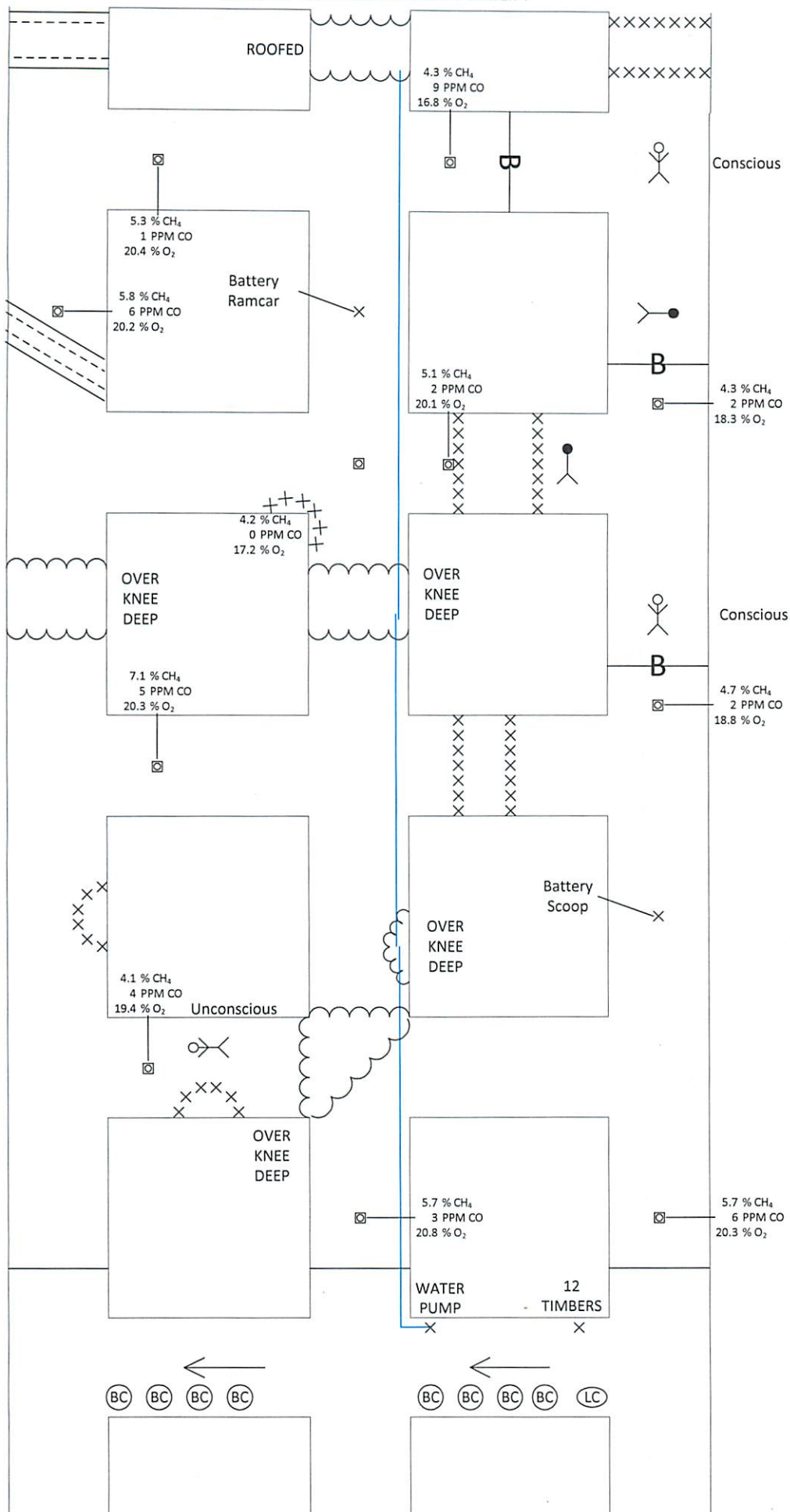
KENTUCKY RIVER 2016 DAY 1 VENTILATION 3



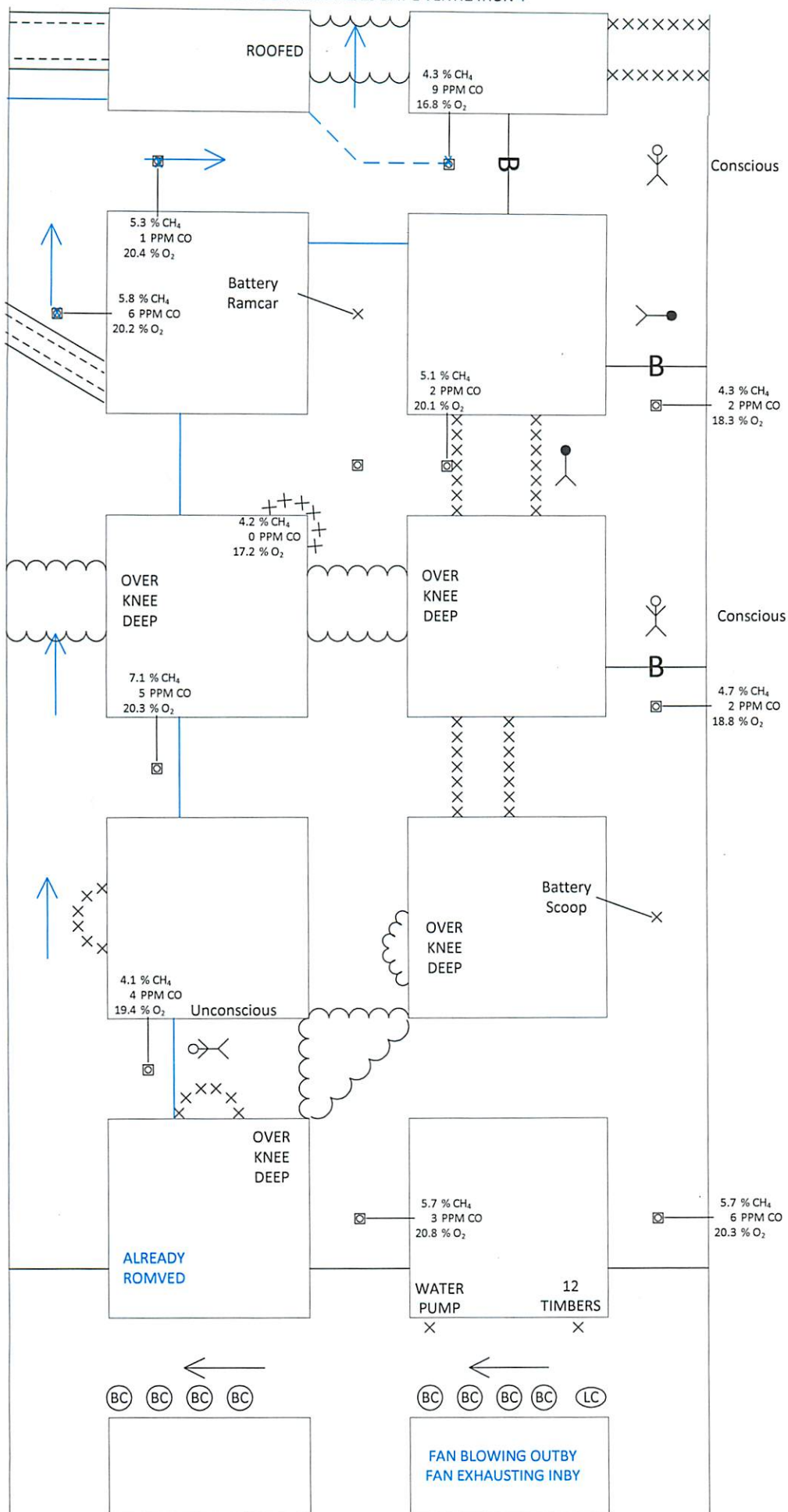
KENTUCKY RIVER 2016 DAY 1 PUMP WATER 3



KENTUCKY RIVER 2016 DAY 1 PUMP WATER 4



KENTUCKY RIVER 2016 DAY 1 VENTILATION 4



KENTUCKY RIVER 2016 DAY 1 FINAL MAP

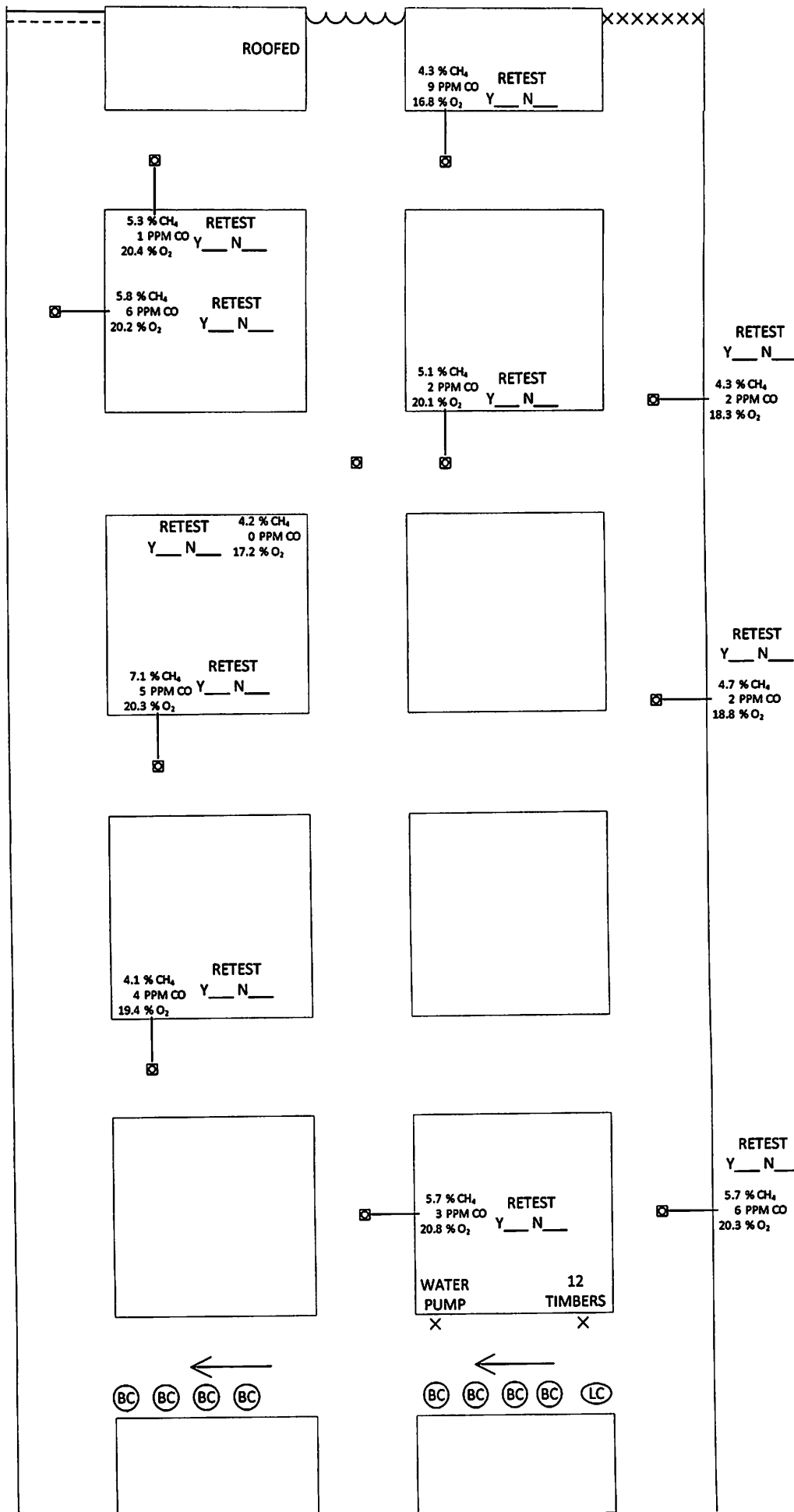


Diagram illustrating the layout of a mine and the extent of gas concentrations. The diagram shows various rooms and corridors, with gas concentrations (CH₄, CO, O₂) measured in different areas.

Rooms and Gas Concentrations:

- ROOFED:** 4.3 % CH₄, 9 PPM CO, 16.8 % O₂
- Battery Ramcar:** 5.3 % CH₄, 1 PPM CO, 20.4 % O₂; 5.8 % CH₄, 6 PPM CO, 20.2 % O₂
- OVER KNEE DEEP (Left):** 7.1 % CH₄, 5 PPM CO, 20.3 % O₂; 4.2 % CH₄, 0 PPM CO, 17.2 % O₂
- OVER KNEE DEEP (Right):** 5.1 % CH₄, 2 PPM CO, 20.1 % O₂; 4.3 % CH₄, 2 PPM CO, 18.3 % O₂
- Battery Scoop:** 4.7 % CH₄, 2 PPM CO, 18.8 % O₂
- Unconscious:** 4.1 % CH₄, 4 PPM CO, 19.4 % O₂
- OVER KNEE DEEP (Bottom Left):** 5.7 % CH₄, 3 PPM CO, 20.8 % O₂
- WATER PUMP:** 5.7 % CH₄, 6 PPM CO, 20.3 % O₂
- 12 TIMBERS:** 5.7 % CH₄, 6 PPM CO, 20.3 % O₂

Other Labels: Conscious, Unconscious, ROOFED, Battery Ramcar, Battery Scoop, WATER PUMP, 12 TIMBERS, OVER KNEE DEEP.

Legend: BC (Blue Circle), LC (Light Blue Circle).

KENTUCKY RIVER 2016 DAY 1 EXTENT OF GASES #2

