

**Attachment C8 – Mine Rescue participants: Post-Simulation Questionnaire**

Form Approved  
OMB No. 0920-xxxx  
Exp. Date xx/xx/20xx

**1. First, on the top row, circle your role during today’s simulation. For each item below, rate (from 1 to 5) how well you and each member of your team did during the simulation you just completed.**

| <b><u>CIRCLE ONE:</u></b>                          | Mine Rescue Captain | Map Man  | Gas Man | Stretche r Man | Tail Captain | Briefing Officer |
|--|---------------------|--|---------|----------------|--------------|------------------|
| a) Performing his or her own responsibilities      |                     |  |         |                |              |                  |
| b) Communicating with the team                     |                     |  |         |                |              |                  |
| c) Being a “team player”                           |                     |  |         |                |              |                  |
| d) Contributing to the team’s success              |                     |  |         |                |              |                  |
| e) Coordinating individual team member’s efforts   |                     | <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">                     1 = Poor<br/>                     2 = Below Average<br/>                     3 = Average<br/>                     4 = Above Average<br/>                     5 = Excellent                 </div> |         |                |              |                  |
| f) Perceptive of the conditions in the environment |                     |  |         |                |              |                  |
| g) Knowing what needed to be done                  |                     |  |         |                |              |                  |
| h) Being decisive yet flexible                     |                     |  |         |                |              |                  |
| i) Being open to input from others                 |                     |  |         |                |              |                  |
| j) Having a calming influence on the group         |                     |  |         |                |              |                  |
| k) Being a logical decision maker                  |                     |  |         |                |              |                  |

**2. Think about the simulation you just completed and place an “X” in the appropriate box.**

a) The mental demands were:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

b) The physical demands of the exercise were:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

c) The level of stress I experienced was:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

d) The time pressure I felt was:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

e) The level of frustration I experienced was:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

f) The amount of effort needed to complete the task was:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

g) The level of eye strain I experienced was:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

h) The level of strain I experienced from standing during the simulation was:

|          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |           |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Very Low | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very High |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|

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**3. Answer the following questions about the simulation by placing an “X” in the appropriate box.**

a) How natural did moving through the virtual mine seem?

|             |                          |                          |                          |                          |                          |                          |                          |                          |                          |              |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|
| Not Natural | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very Natural |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|

b) How much did your experience in the virtual simulation seem consistent with your real-world experiences in an actual mine?

|                |                          |                          |                          |                          |                          |                          |                          |                          |                          |                 |
|----------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------|
| Not Consistent | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very Consistent |
|----------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------|

c) How natural were your interactions with the environment (e.g., opening doors, taking gas readings)?

|             |                          |                          |                          |                          |                          |                          |                          |                          |                          |              |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|
| Not Natural | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very Natural |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|

d) Were you involved in the exercise to the extent that you lost track of time?

|  |                          |                          |                          |                          |                          |                          |                          |                          |                          |                                       |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------|
| No – I did not lose track of time at all | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Yes – I completely lost track of time |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------|

e) How responsive was the simulation to actions that you performed with the air mouse?

|                       |                          |                          |                          |                          |                          |                          |                          |                          |                          |                 |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------|
| Not at all responsive | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very responsive |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------|

f) How engaged were you in the virtual reality experience?

|                    |                          |                          |                          |                          |                          |                          |                          |                          |                          |              |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|
| Not at all engaged | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very engaged |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------|

g) How immersed did you feel in the virtual environment?

|                     |                          |                          |                          |                          |                          |                          |                          |                          |                          |               |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------|
| Not at all immersed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Very immersed |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------|

**4. On a scale from 1 to 10, rate how difficult or easy it was for you, by the end of the simulation, to do the following.**

**Place an “X” in the appropriate box.**

|  | Very Difficult           |                          |                          |                          |                          |                          |                          |                          | Very Easy                |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        | 8                        | 9                        | 10                       |
| a) Find your air mouse cursor on the screen.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Move the air mouse cursor to a specific spot on the screen (such as a door or fire extinguisher). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Move the air mouse cursor rapidly from one side of the room to the other (i.e., 180 degrees).     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Scroll through different tools on the air mouse (e.g., gas monitor, SCSR).                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Select a tool using the center wheel on the air mouse.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Use a tool with the air mouse.  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Switch quickly between two different tools.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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5. Rate how much you agree or disagree that the words and phrases below describe the simulation you just completed.

|   | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|---|-------------------|----------|---------|-------|----------------|
| a) Engaging   |                   |          |         |       |                |
| b) Chilling/eerie   |                   |          |         |       |                |
| c) High replay value (i.e., you'd be interested in trying it again sometime)  |                   |          |         |       |                |
| d) Interesting  |                   |          |         |       |                |
| e) Flexible (i.e., your team could accomplish the goals the way it wanted to) |                   |          |         |       |                |

6. Are you able to see stereoscopic 3D images?  Yes  No

7. Rate how much, if at all, you experienced the symptoms below as a result of the VR simulation.

|                        | None | Slight | Moderate | Severe |
|------------------------|------|--------|----------|--------|
| a) General Discomfort  |      |        |          |        |
| b) Eyestrain           |      |        |          |        |
| c) Difficulty focusing |      |        |          |        |
| d) Nausea              |      |        |          |        |
| e) Dizziness           |      |        |          |        |
| f) Stomach Awareness   |      |        |          |        |

8. How often do you get motion sickness in the following situations?

|   | Never | Once in a while | Sometimes | Frequently | Always |
|---|-------|-----------------|-----------|------------|--------|
| a) Riding in a car on a twisting and turning road |       |                 |           |            |        |
| b) Riding in an airplane experiencing turbulence  |       |                 |           |            |        |
| c) Riding amusement park rides                    |       |                 |           |            |        |
| d) Watching an IMAX movie                         |       |                 |           |            |        |

9. How much, if any, motion sickness did you experience during the following events in the VR simulation?

|  | None | Slight | Moderate | Severe |
|--|------|--------|----------|--------|
| a) Moving down a long entry in the mine    |      |        |          |        |
| b) Periods of stopping and moving suddenly |      |        |          |        |
| c) Turning around quickly                  |      |        |          |        |
| d) Looking around the mine while moving    |      |        |          |        |
| e) Looking into a refuge chamber           |      |        |          |        |

10. Did you enjoy participating in this VR simulation?  Yes  No