

Health & Safety Alert

Gas Explosion in Pumping Station

What happened?

On 21st August whilst Barhale operatives were in the process of cutting hand-railing as part of a decommissioning activity in a pumping station, an explosion occurred, injuring two operatives. Both injured parties were taken to hospital and treated for fractures to the ankle and foot.

The decommissioning phase required placement of foam concrete infill into an existing dry well (inside building) and wet well (outside building) The dry well infill had extended beneath an existing solid metal floor which both injured parties were standing on at the time of the incident.

The investigation into the root cause is still ongoing but it is suspected that the likely cause was as a direct result of hydrogen gas produced from the foam concrete. The gas appears to have built up beneath the metal flooring overnight. The gas is thought to have been ignited by spark created by a grinder.

The foam concrete mixture contained IBA (Incinerator Bottom Ash) which after investigation and research is likely to produce hydrogen gas. Aluminium metal particles present in the IBA react with the water and cement contents of the concrete to generate hydrogen, the volume of hydrogen produced being proportional to the quantity of aluminium metal being present in the IBA.



Picture showing scene inside the pumping station after the explosion

Early learning points:

- **The use of foam concrete containing IBA is no longer permitted within Barhale. Only foam concrete using inert materials will be permitted.**
- **You must contact your Supplier for clarification and assurance of its safety, if you are unsure of the ingredients used in specified mixes.**
- **Examples of inert materials used in foam mix designs include sand, gravel or crushed stone. Always seek confirmation from the supplier that the materials used are inert and will not produce gas emissions when mixed.**

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Please display until 31/12/09

For further information please contact Andy Dodman (Health & Safety Dept) on 07903 882329