

Reduced environmental impact and promote safety during blasting – RENIS

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Partners
Forcit AB, Kimit AB, Boliden AB, Swebrec



Program Day 2023

Goals of the project

Testing various recipes of commercial explosives to investigate the production of carbon monoxide, carbon dioxide, nitrogen monoxide and nitrogen dioxide (CO, CO₂, NO and NO₂) during the detonation.

Increasing the knowledge about the influence of different additives in the explosives, for example, porous and less porous prills in emulsion. Prills are solid ammonium nitrate particles added in the emulsion.

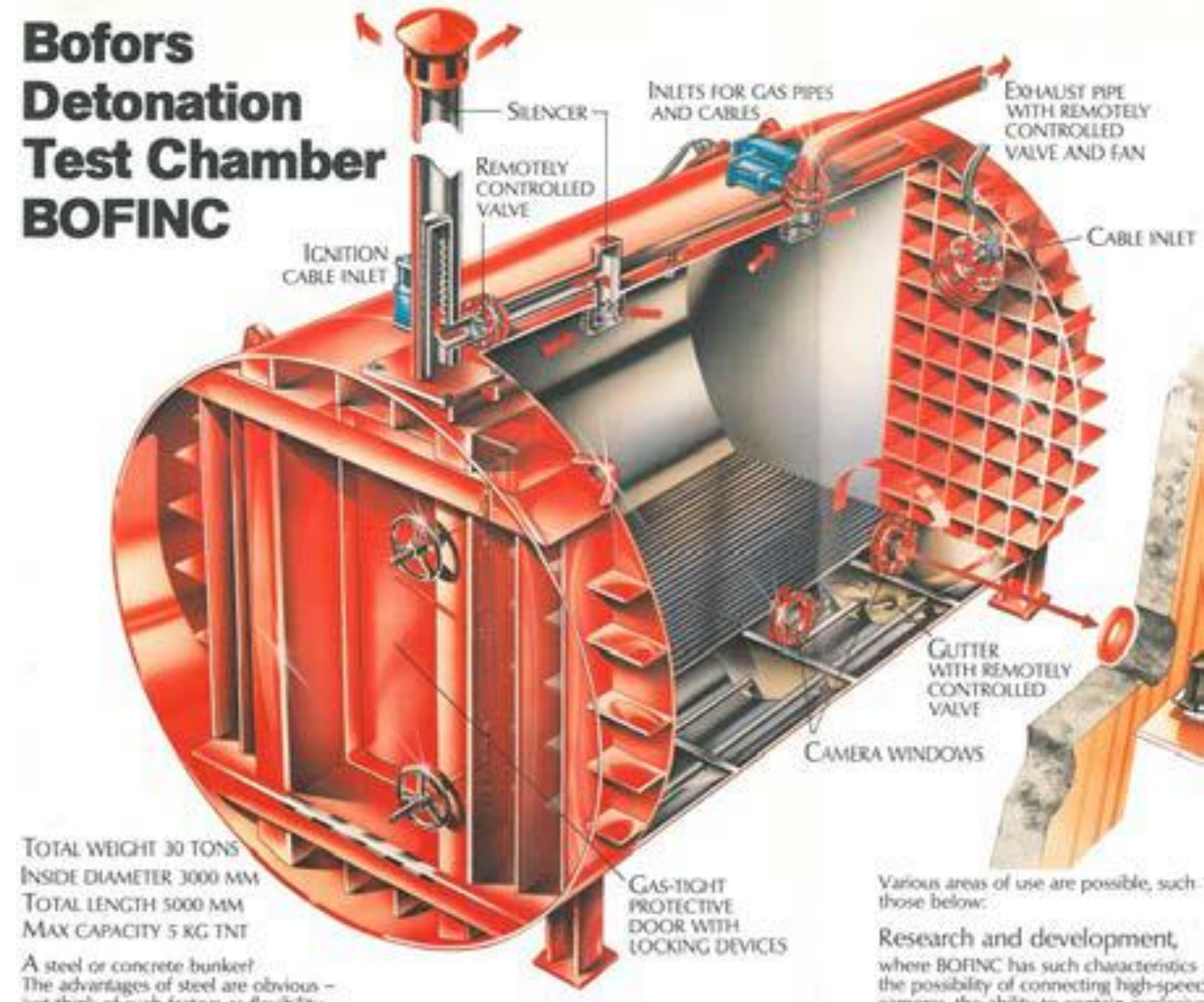
Optimizing the recipes to reduce the production of nitrogen-based gases during the detonation of the explosives.

Evaluating the impact of shockwave on the detonators in the neighboring blastholes.



Project Plan

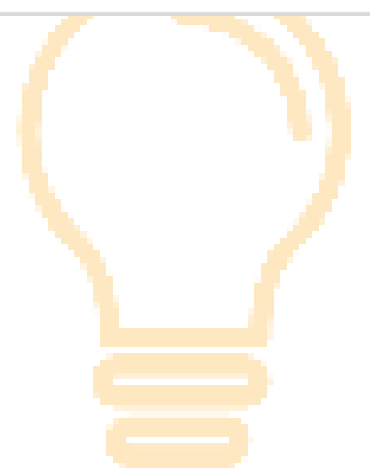
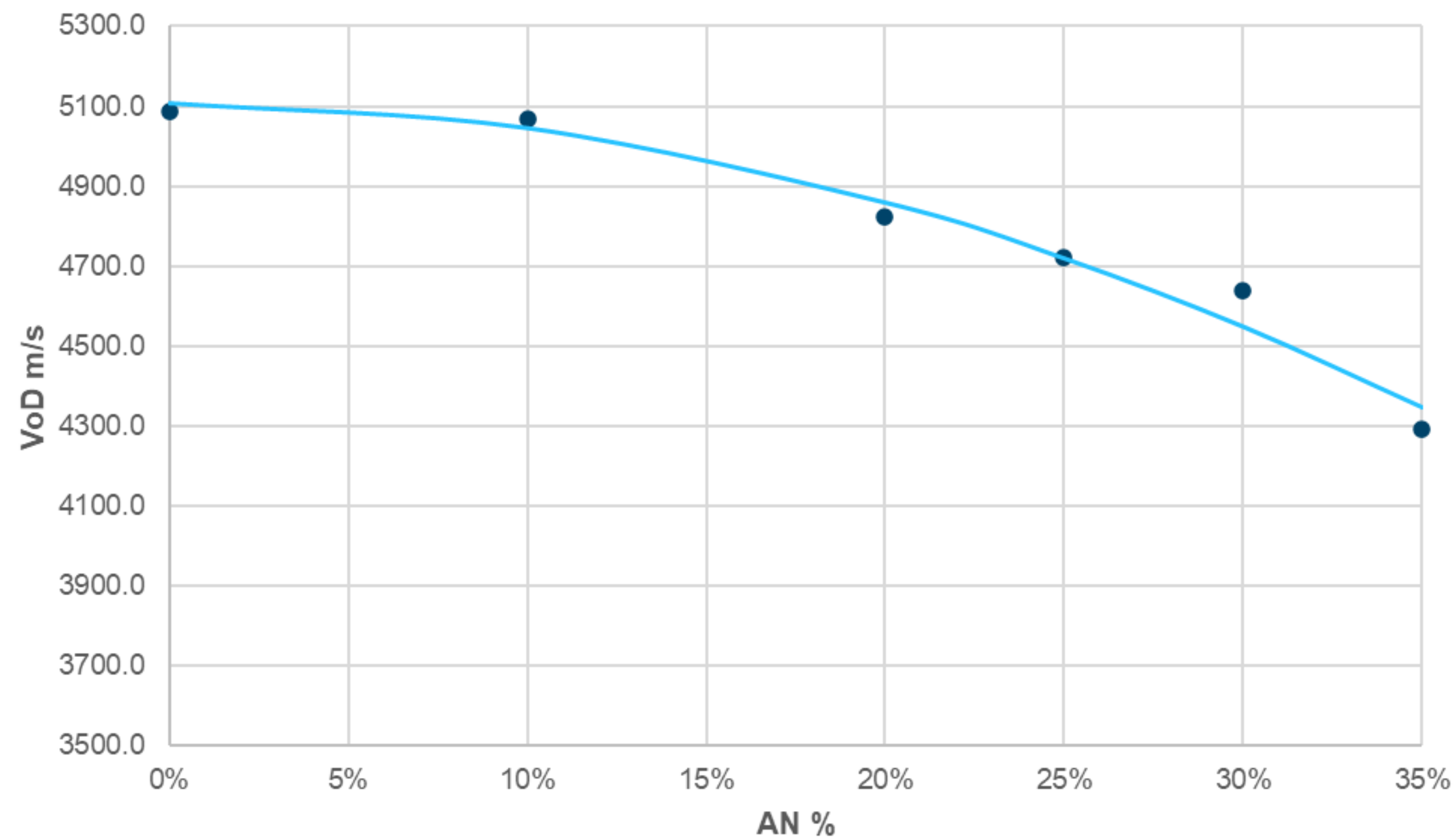
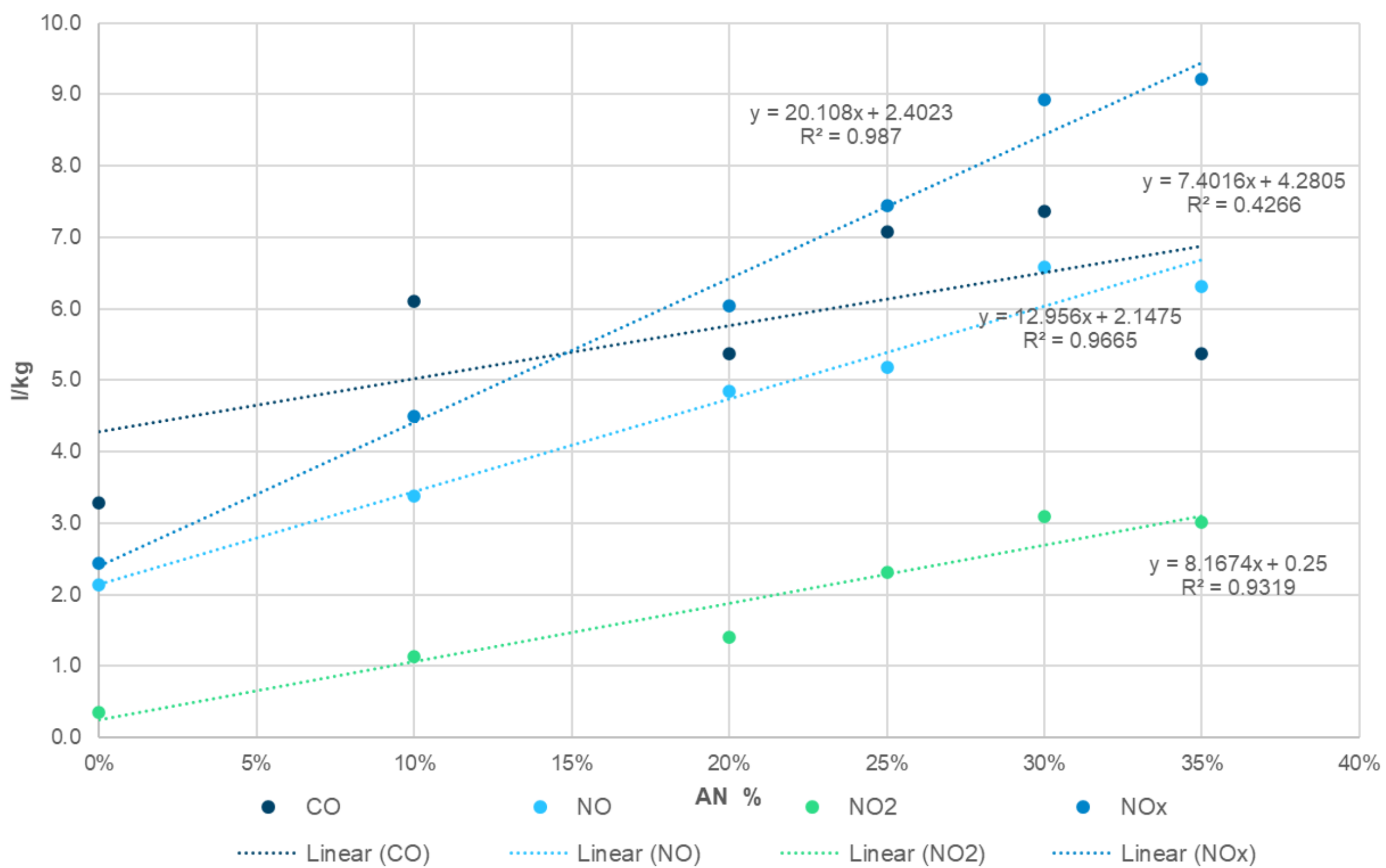
Bofors Detonation Test Chamber BOFINC



Gas flue analyzer



Project results so far



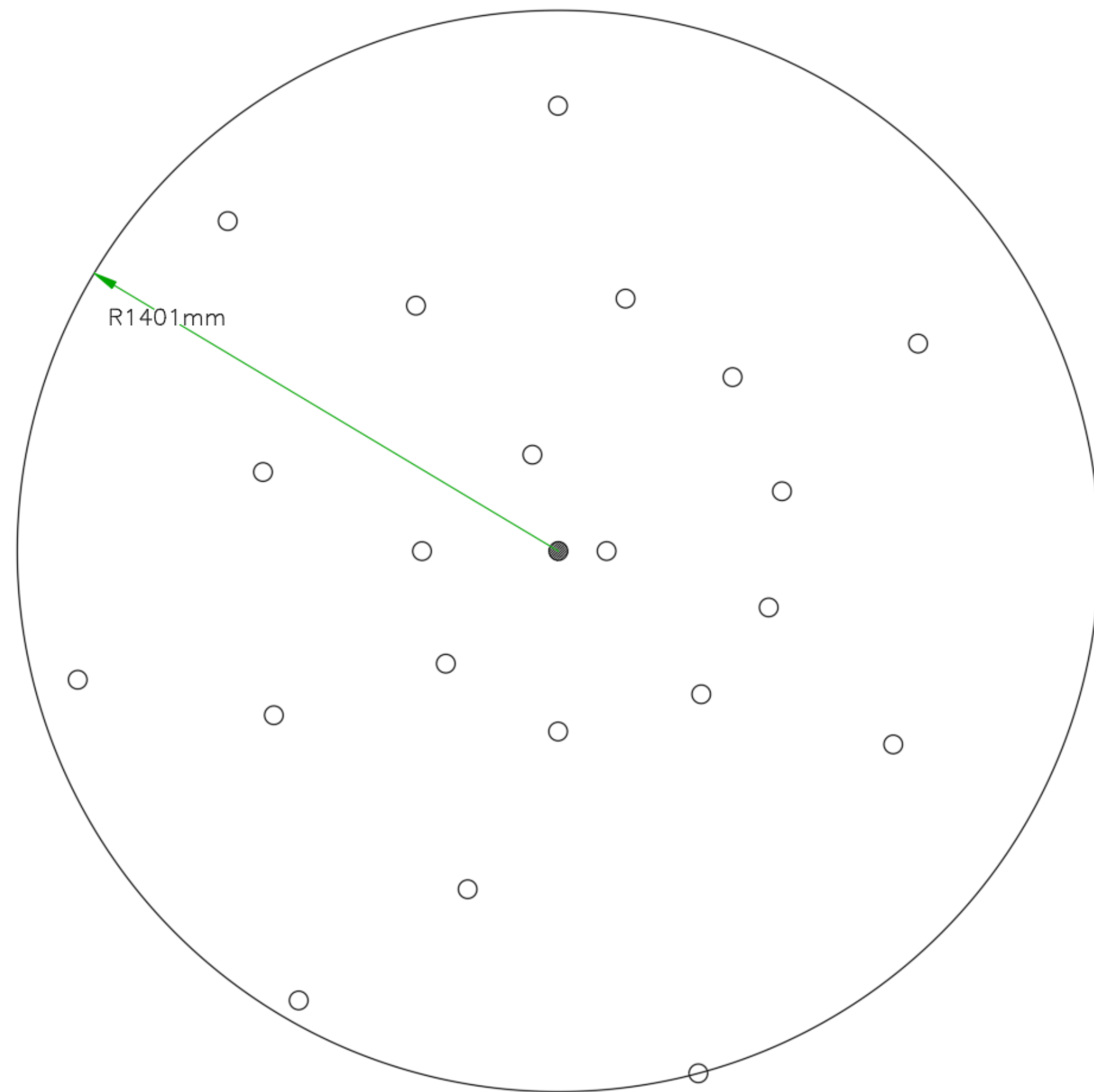
Dissemination

Report distributed to partners

Presentation at ISEE 2024 conference



Next Steps



Water hammer effect – parametric experimental design

- The black hole will be charged, and pressure sensors will be placed in some of the boreholes around
- A set of detonators will be placed in the boreholes to evaluate the effect of shock wave on them



Mining innovation for a sustainable future