

The landfill of the future

Developing new methods for landfill monitoring

Project in partnership with SORPA



ReSource International

Environmental Engineering and services

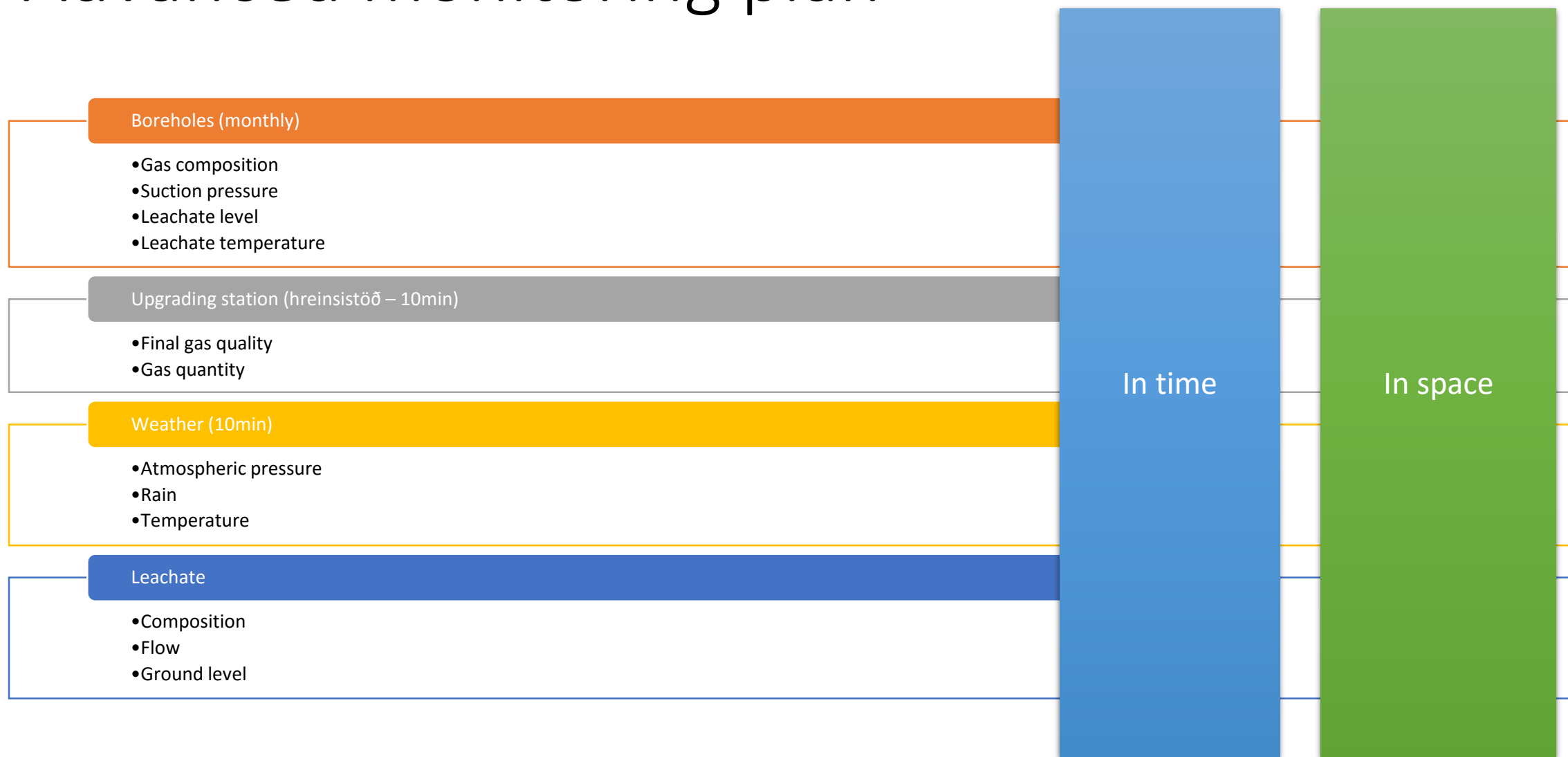


The landfill of the future

- Applying new methods
- Applying new technologies
- Optimize operation
- Cost/benefit
- Research and development



Advanced monitoring plan



Drone survey



- **Aerial picture**

- 3D model
- All georeferenced



- **Thermal pictures**

- Thermal mapping
- 3D model
- All georeferenced



- **Growth map (NDVI)**

- Mapping of vegetation cover
- Measure vegetation health

Georeferenced work

- 5 to 10 GPS measured points !
- You can then draw all height lines, roads, volumes, surfaces on the computer
 - > Reduce needs for field labor
 - > Increase data output (i.e. you have data you never had before)



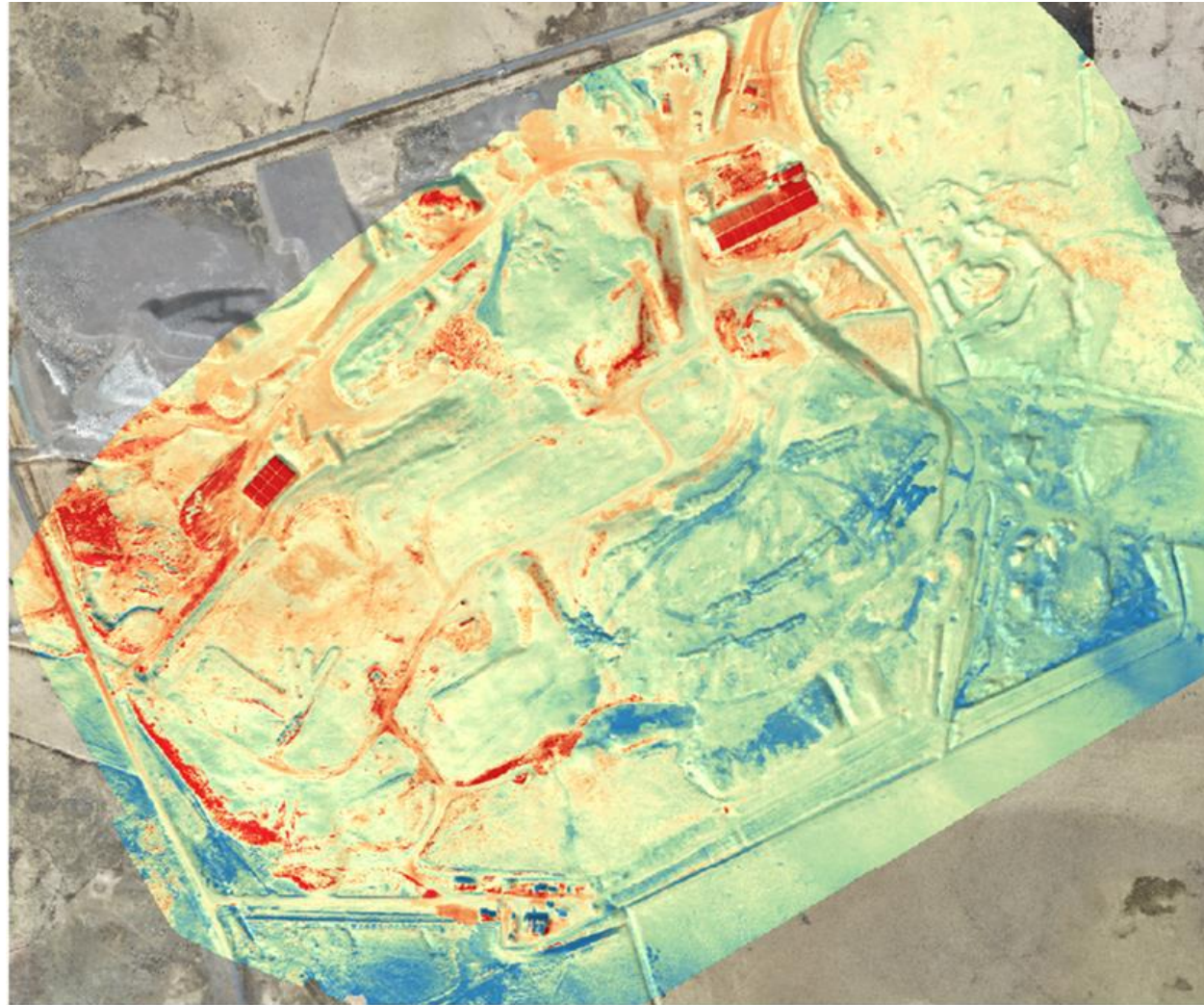
Terrain model



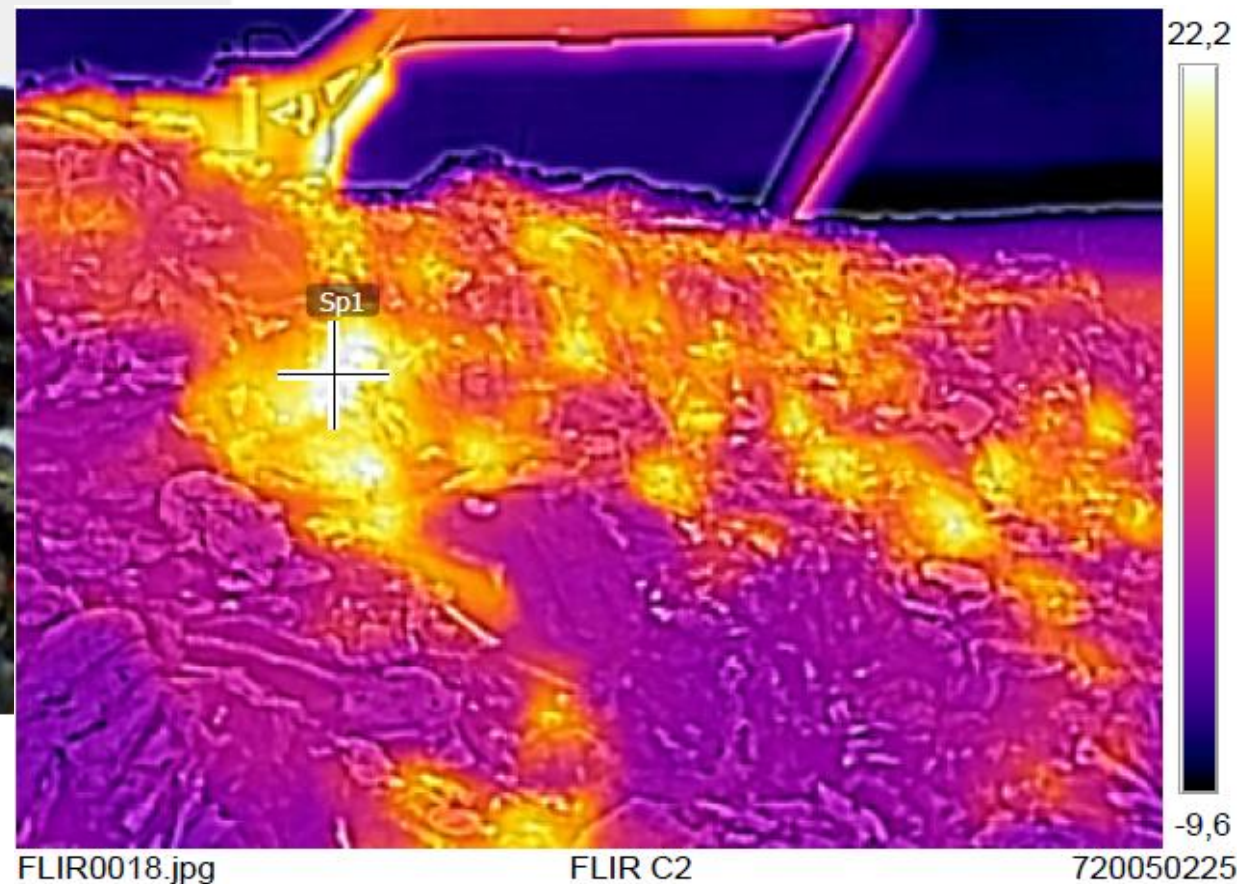
Terrain model



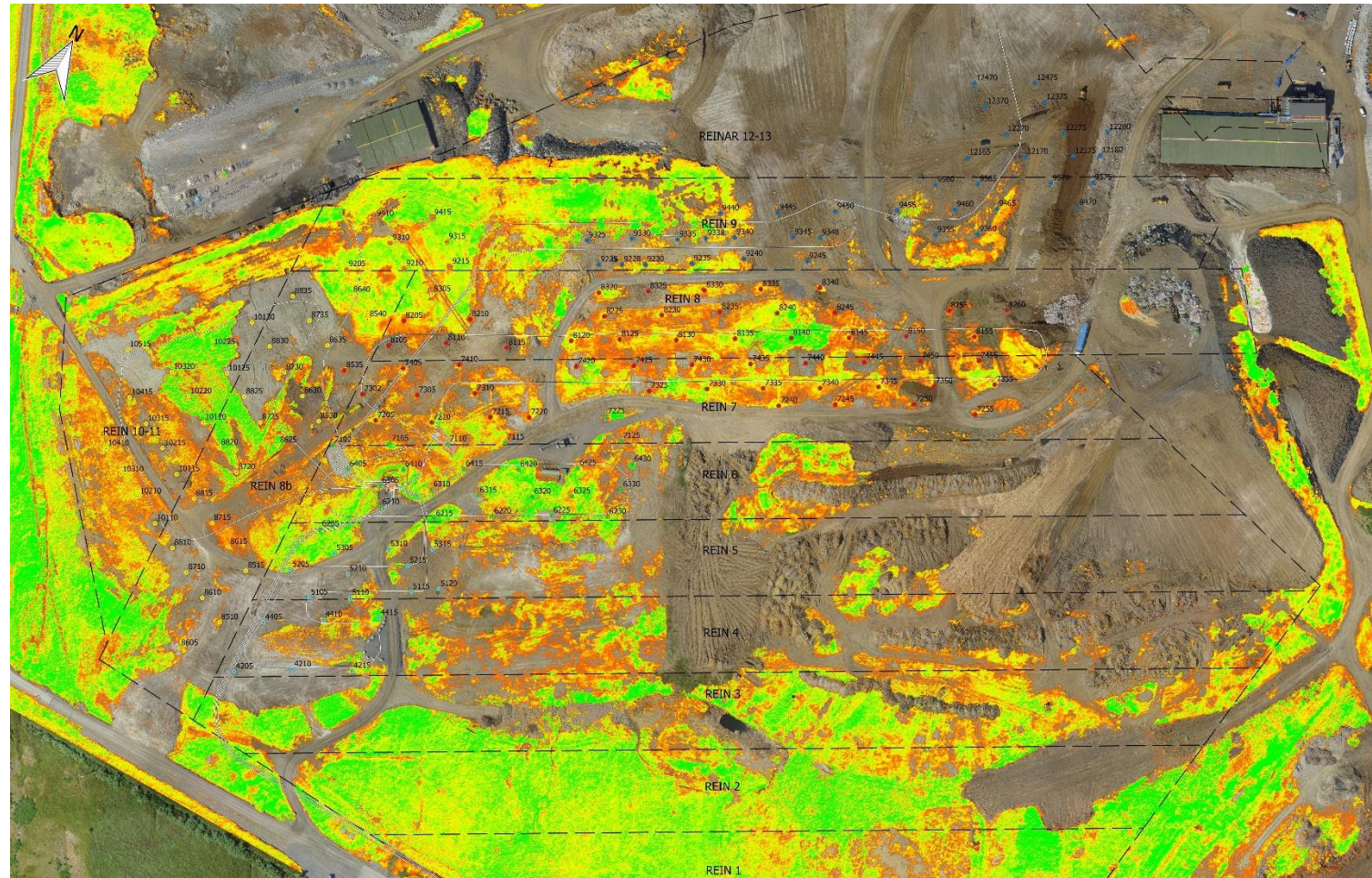
Thermal mapping



Thermal



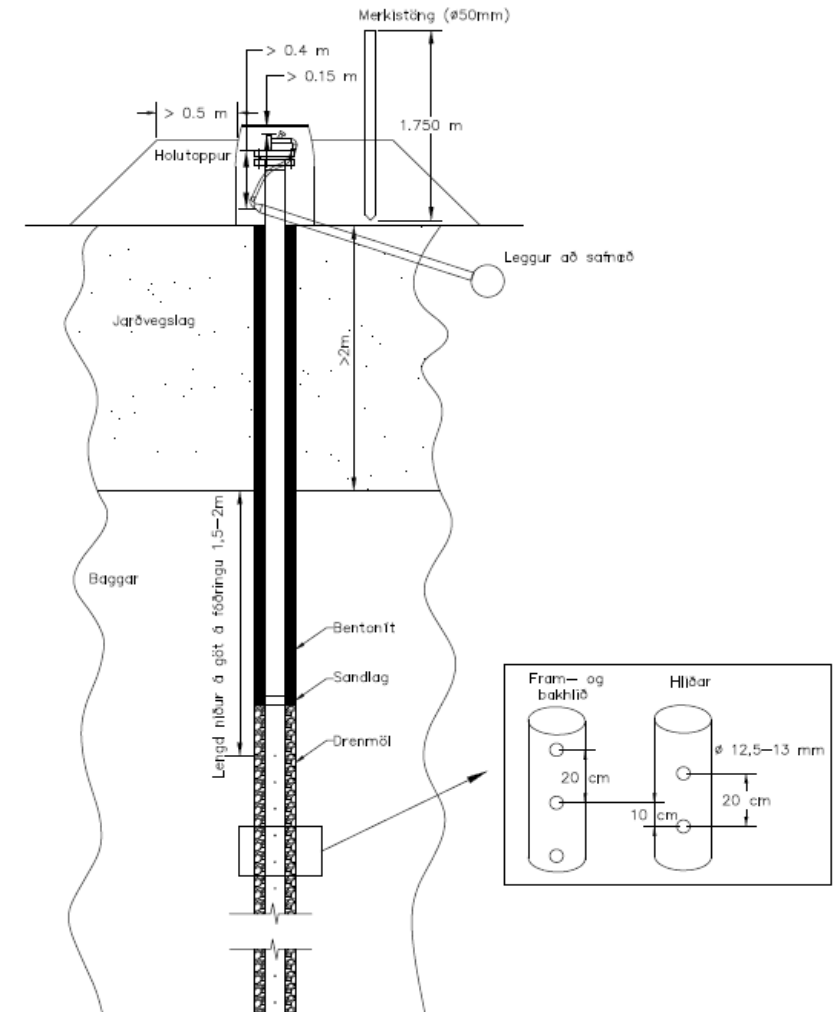
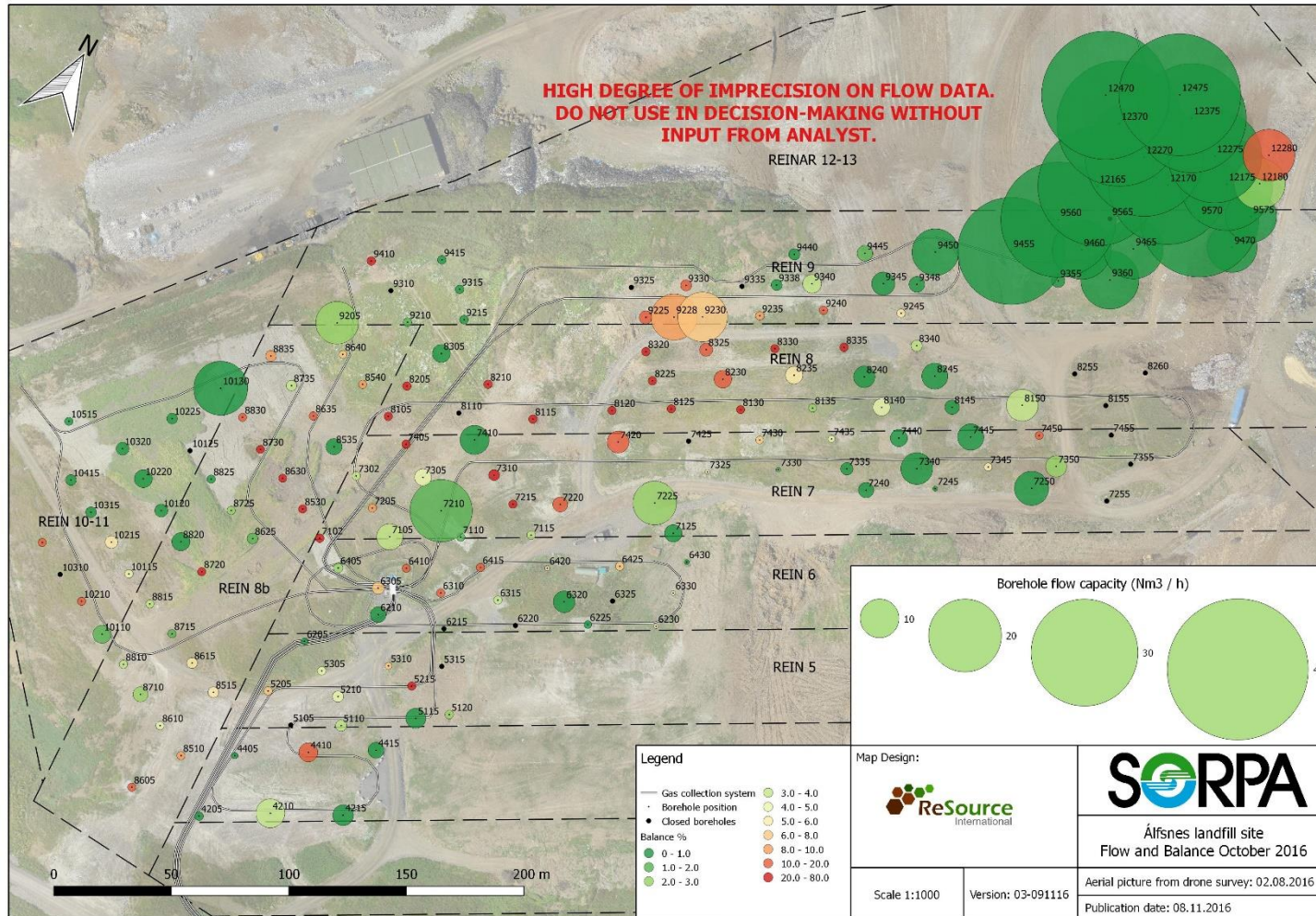
NDVI



A thick green vertical bar on the left side of the slide, with a small brown square at the bottom.

Why ?

Data analysis – operation optimization



Cost-benefit

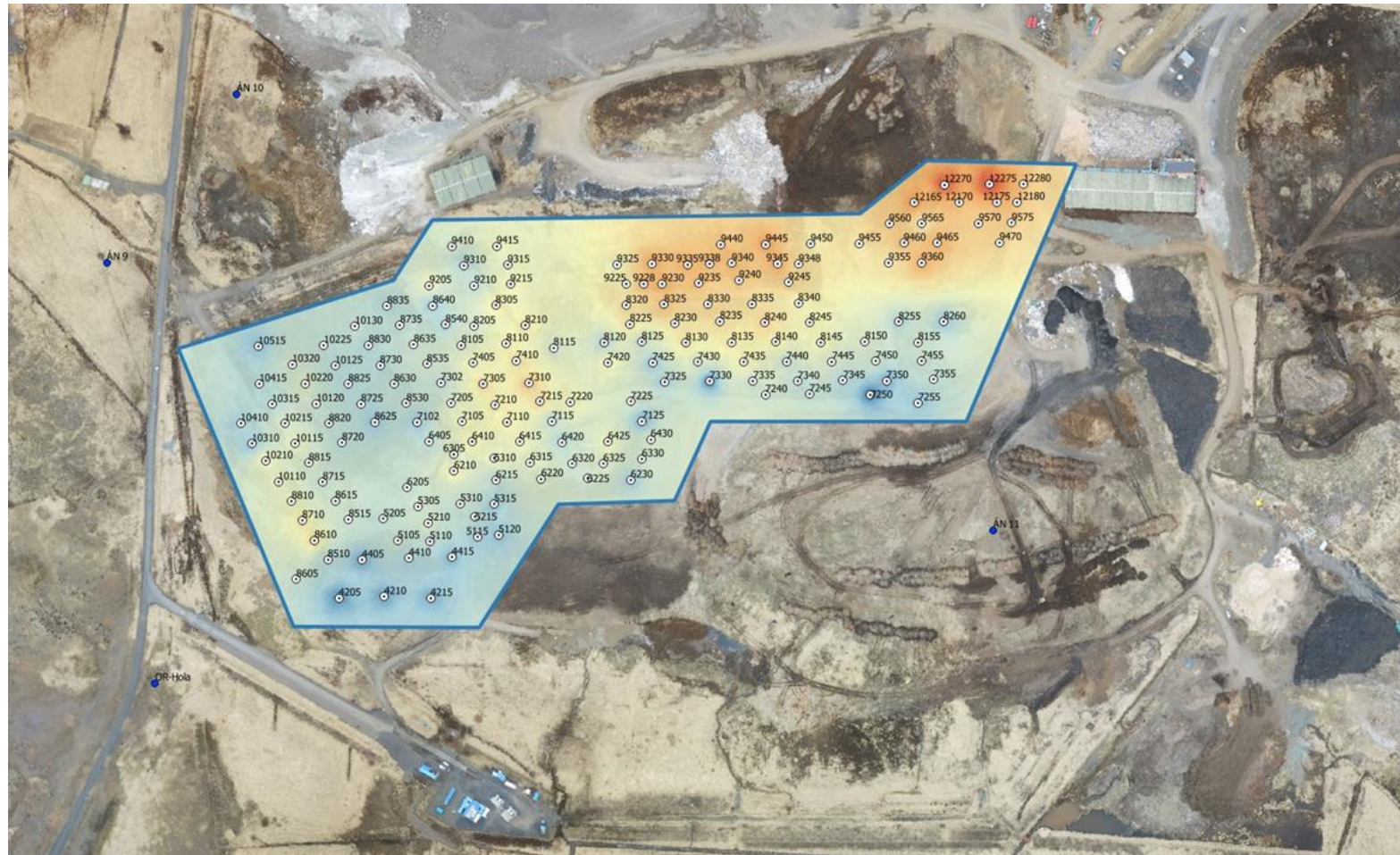
- **FOCUS** on weak points of the system
- Faster and more efficient maintenance
- Include results in new design
- Increase gas recovery quantity with better quality
- Better vegetation planning
- Provide data and visualization to develop more accurate monitoring plan

To be able to predict behavior of a large system (i.e. the landfill)
based on measured parameters

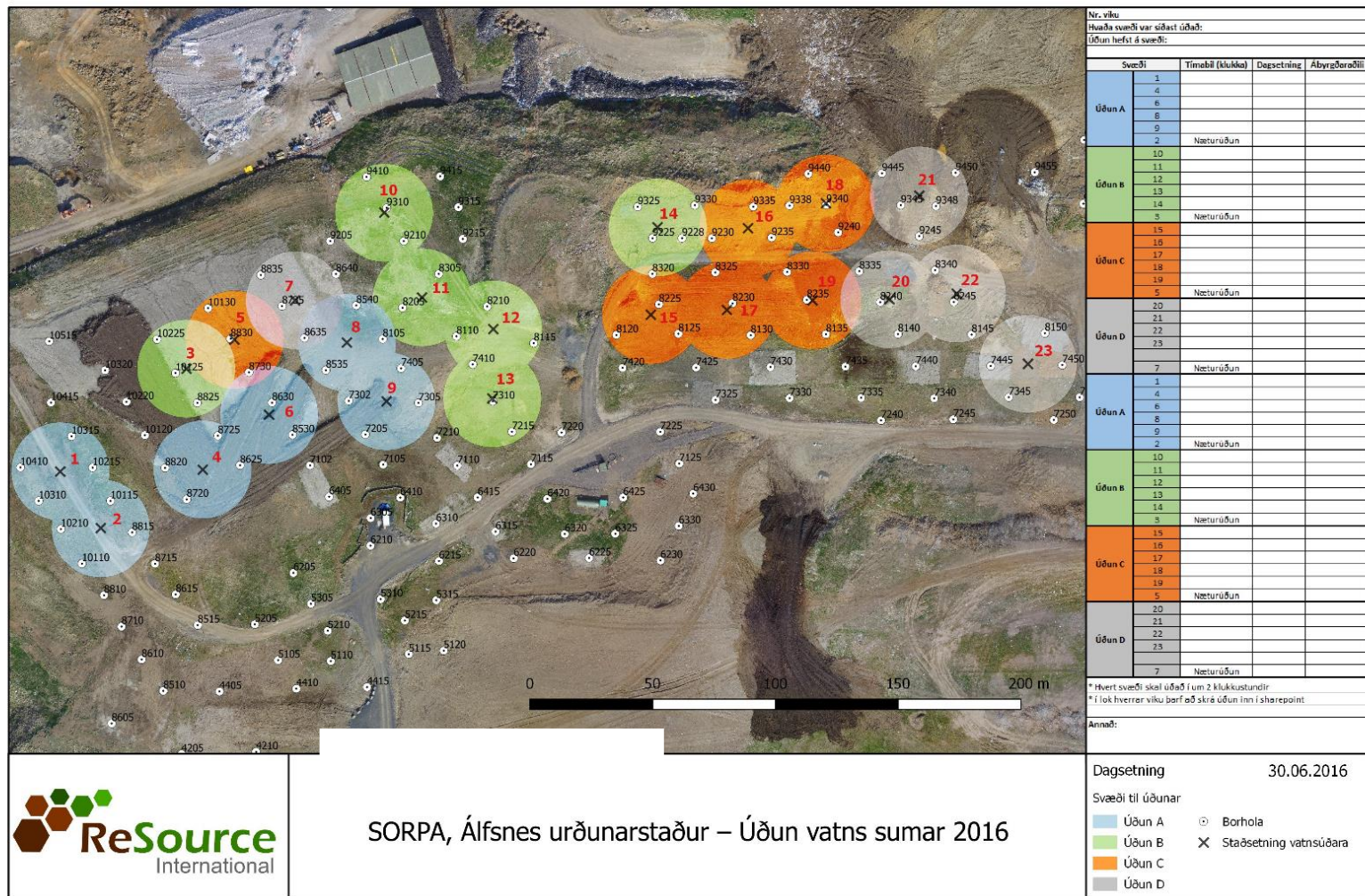
Design and planning



GIS and CAD integration



Project planning

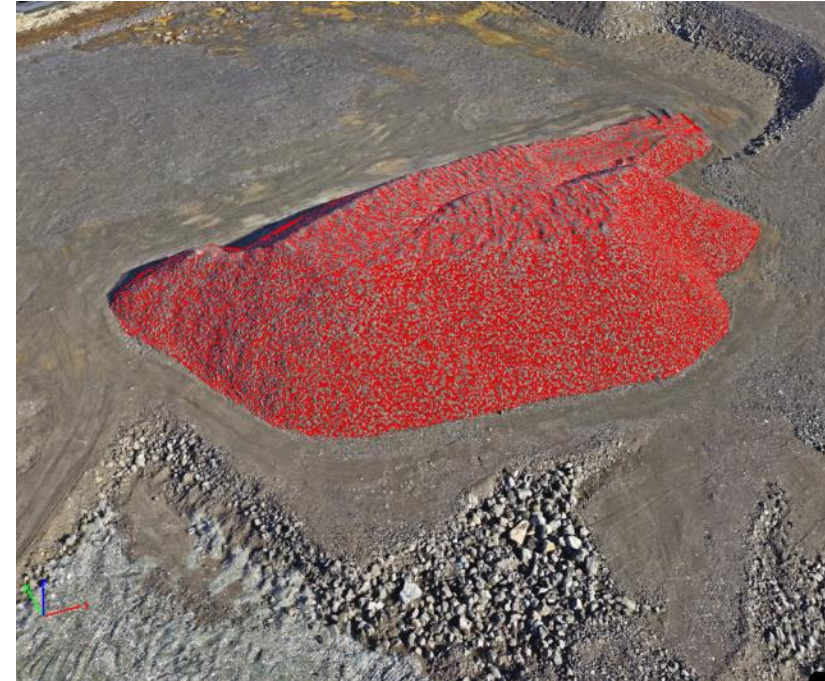
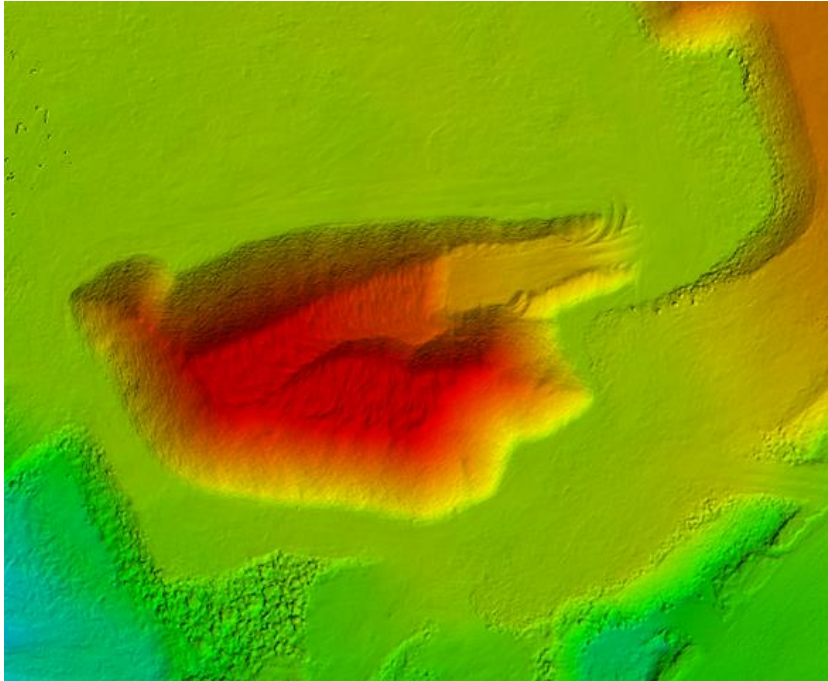


Surface measurement



Volume calculation

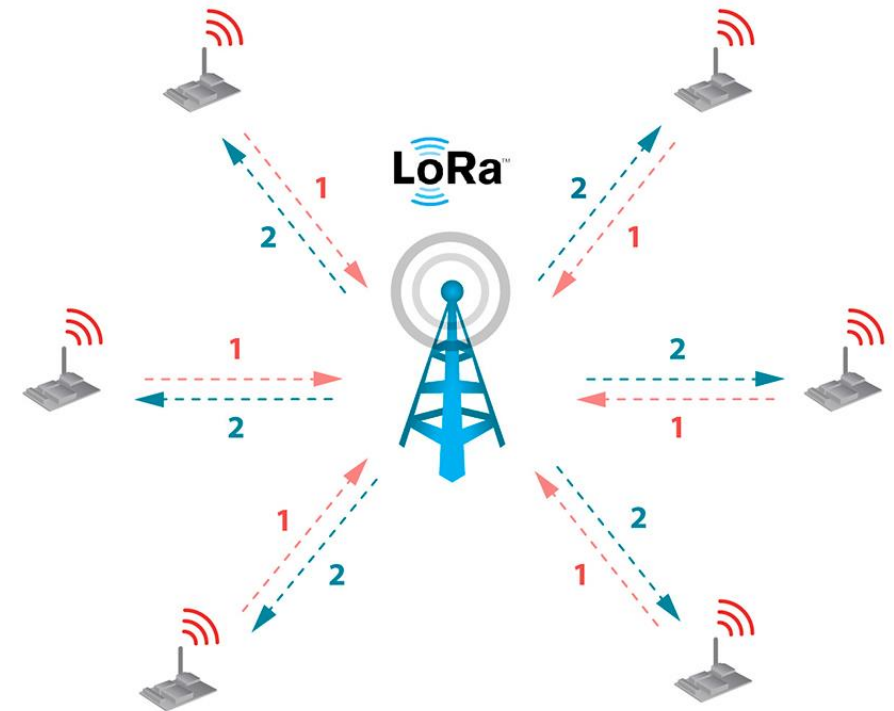
- Effective and accurate pile measurement
- Safe methods !



The future in the near future



Methane emissions



Smart monitoring

Takk fyrir!

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