


PFOS MOBILITY AND REMEDIATION IN THE



GROUNDWATER ZONE OF GLACIOFLUVIAL SEDIMENTS, GARDERMOEN, NORWAY

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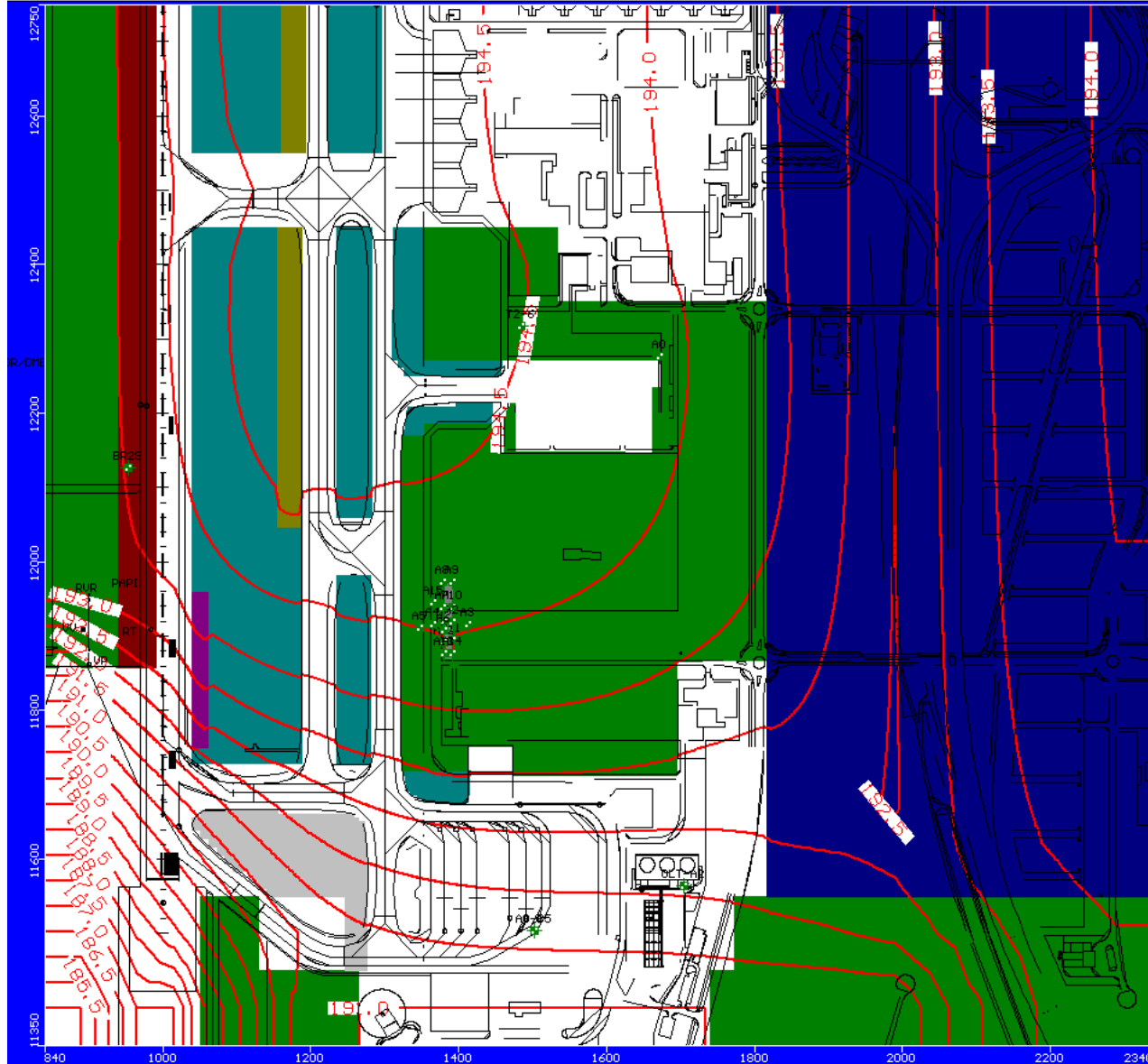
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- Oslo airport, Gardermoen - geological conditions
- PFOS - spill
- Hydrogeological conceptual model and monitoring network
- Numerical modelling of remediation
- Conclusions

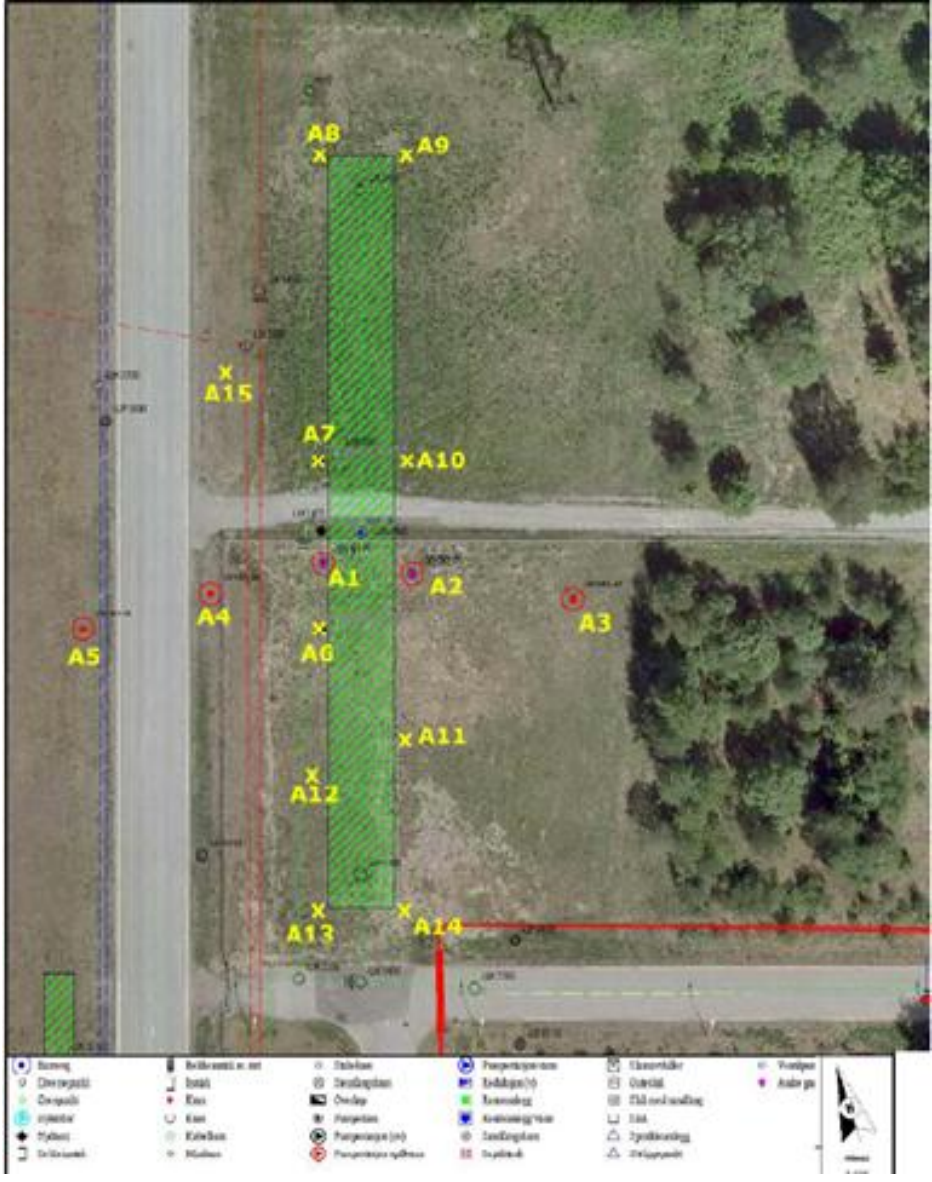
Oslo lufthavn - Gardermoen



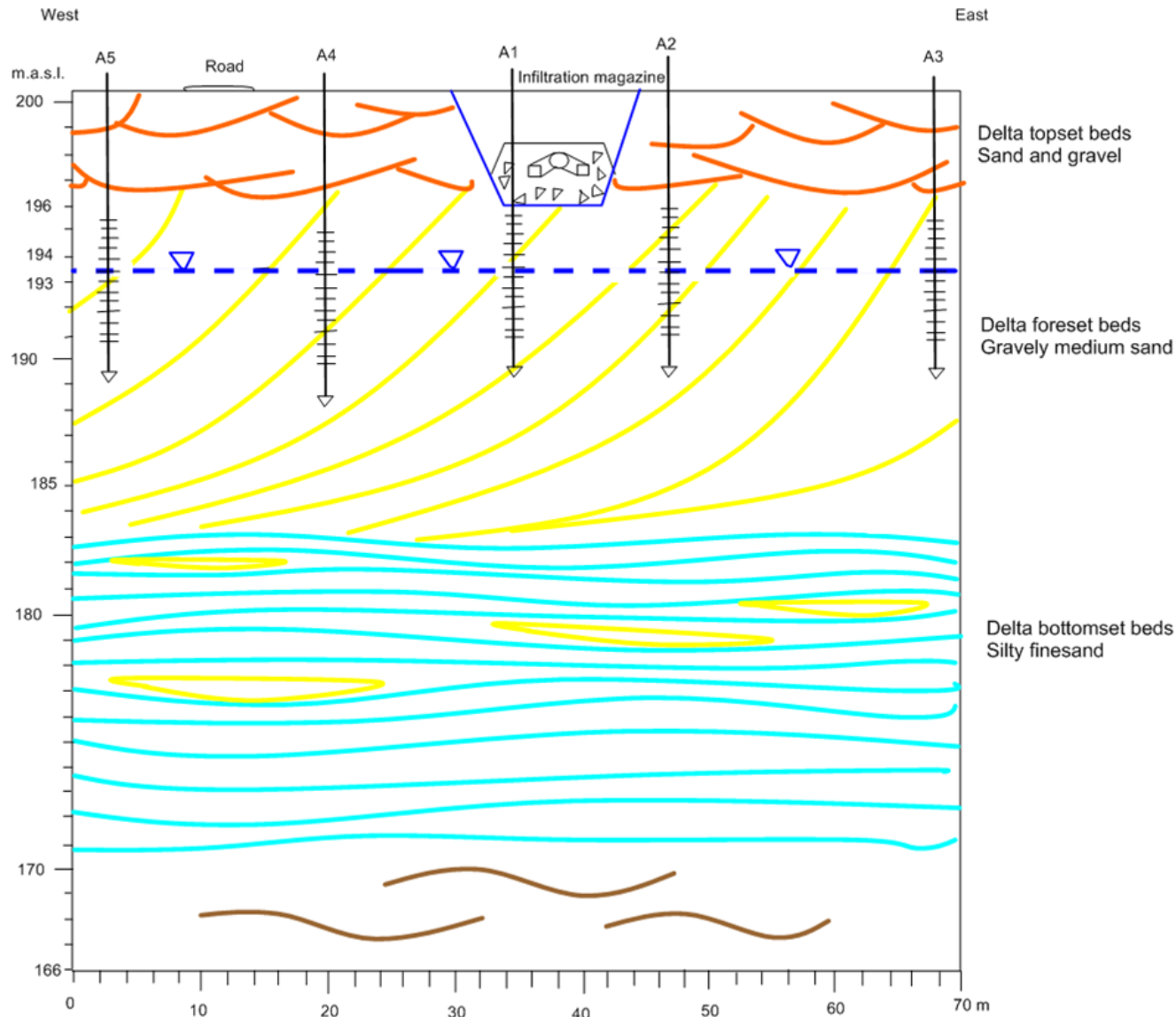
Groundwater table and recharge



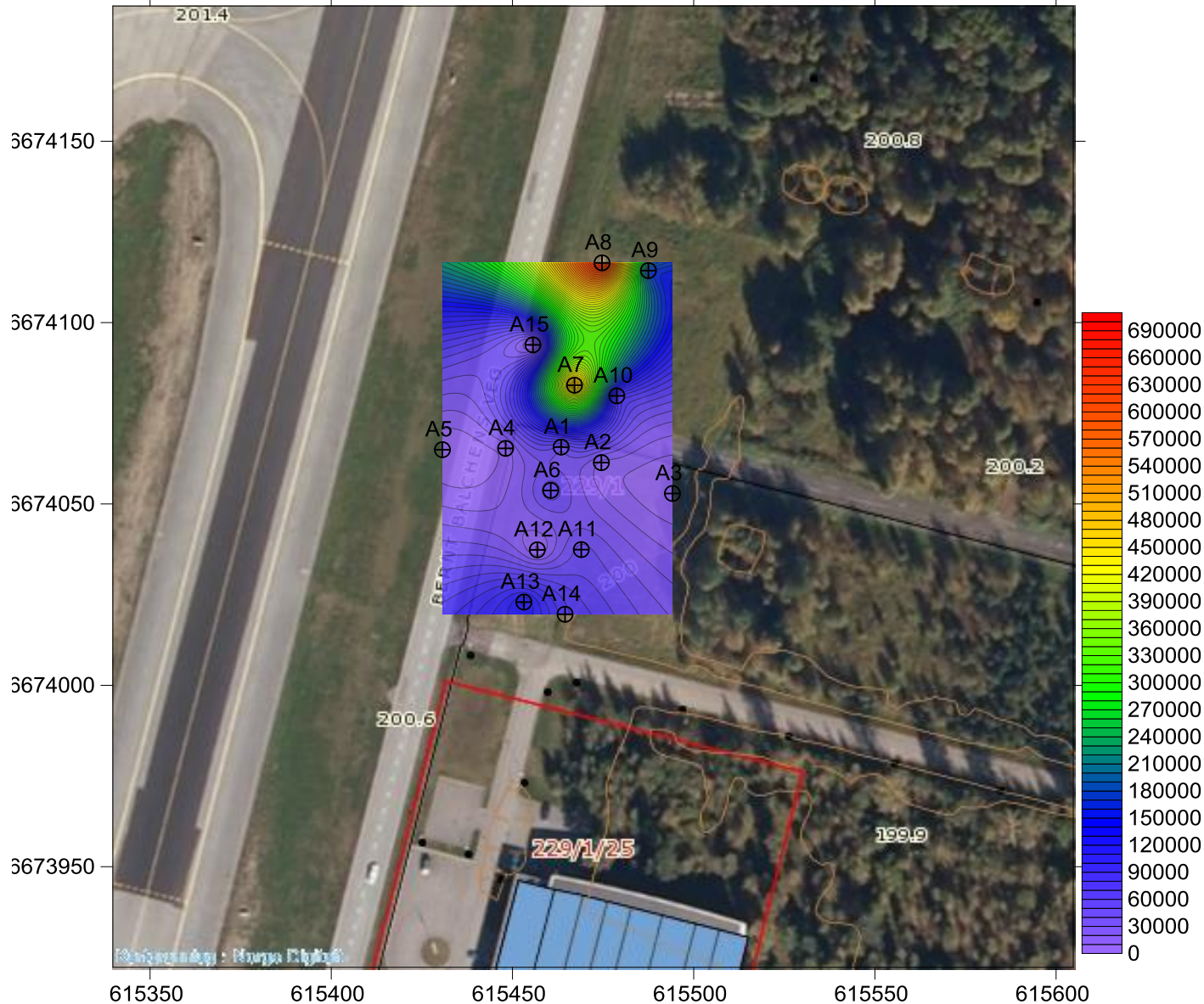
Infiltration magazine and monitoring wells



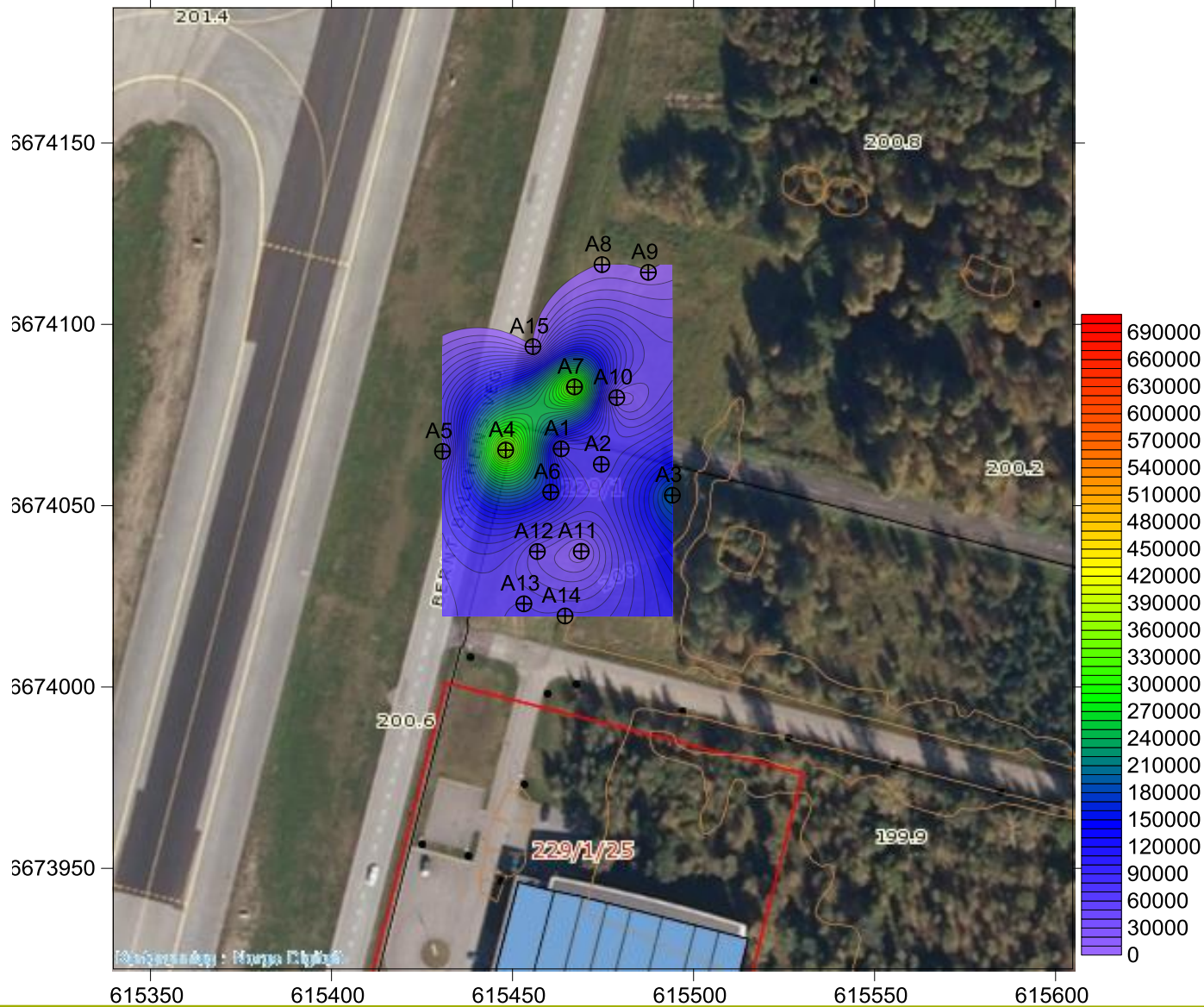
Hydrogeological conceptual model



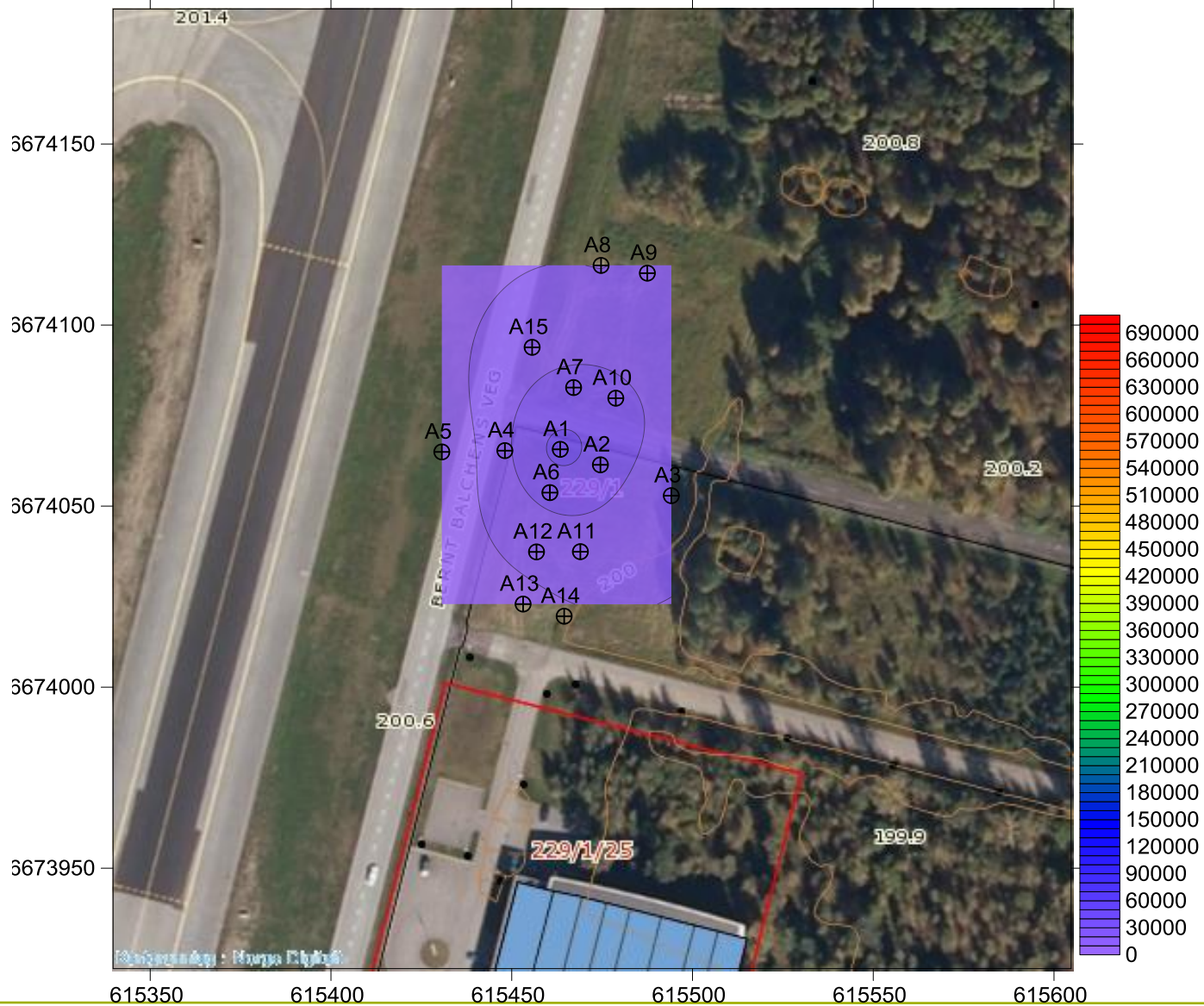
PFOS concentration, 7 October 2011



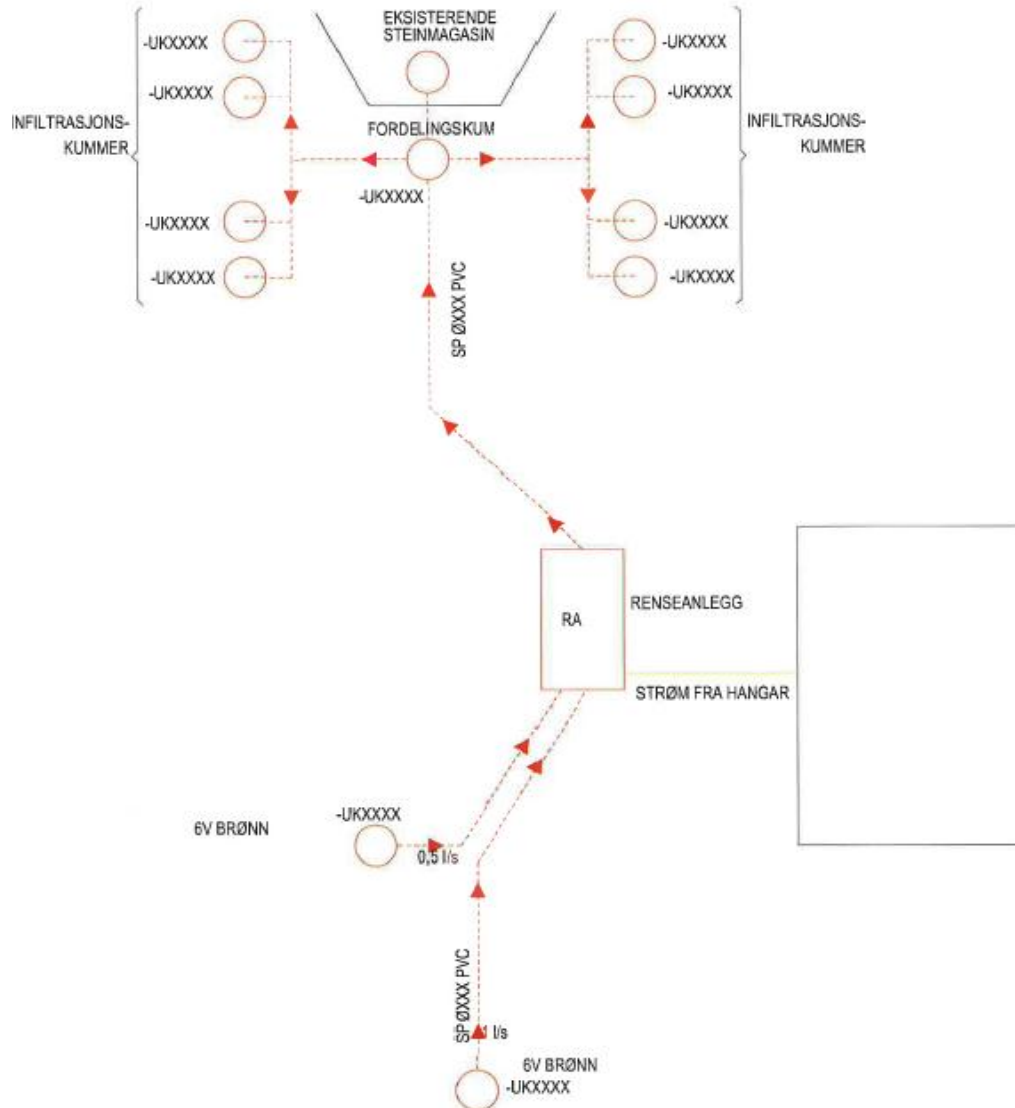
PFOS concentration, 26 January 2012



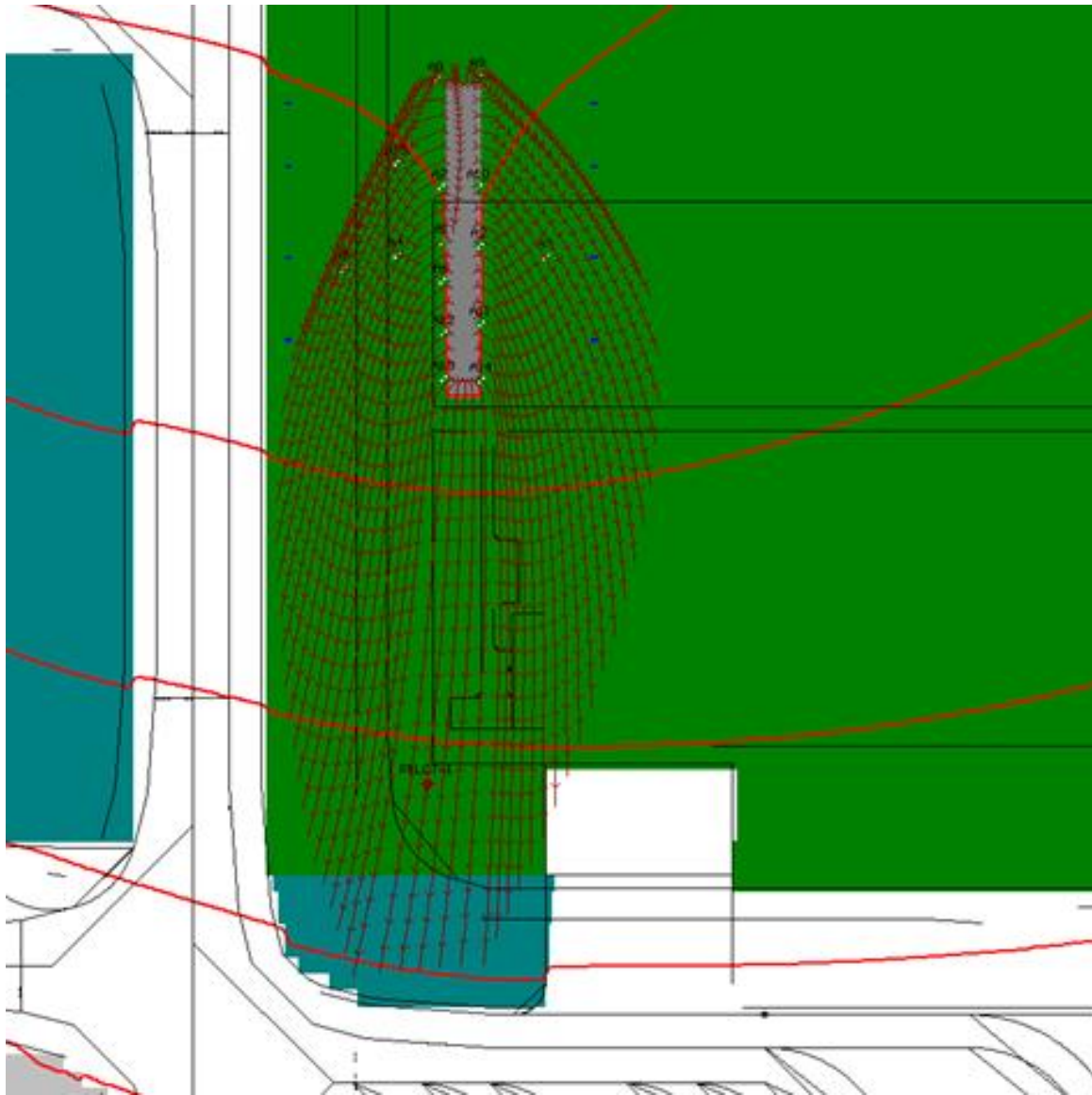
PFOS concentration, 2 July 2012



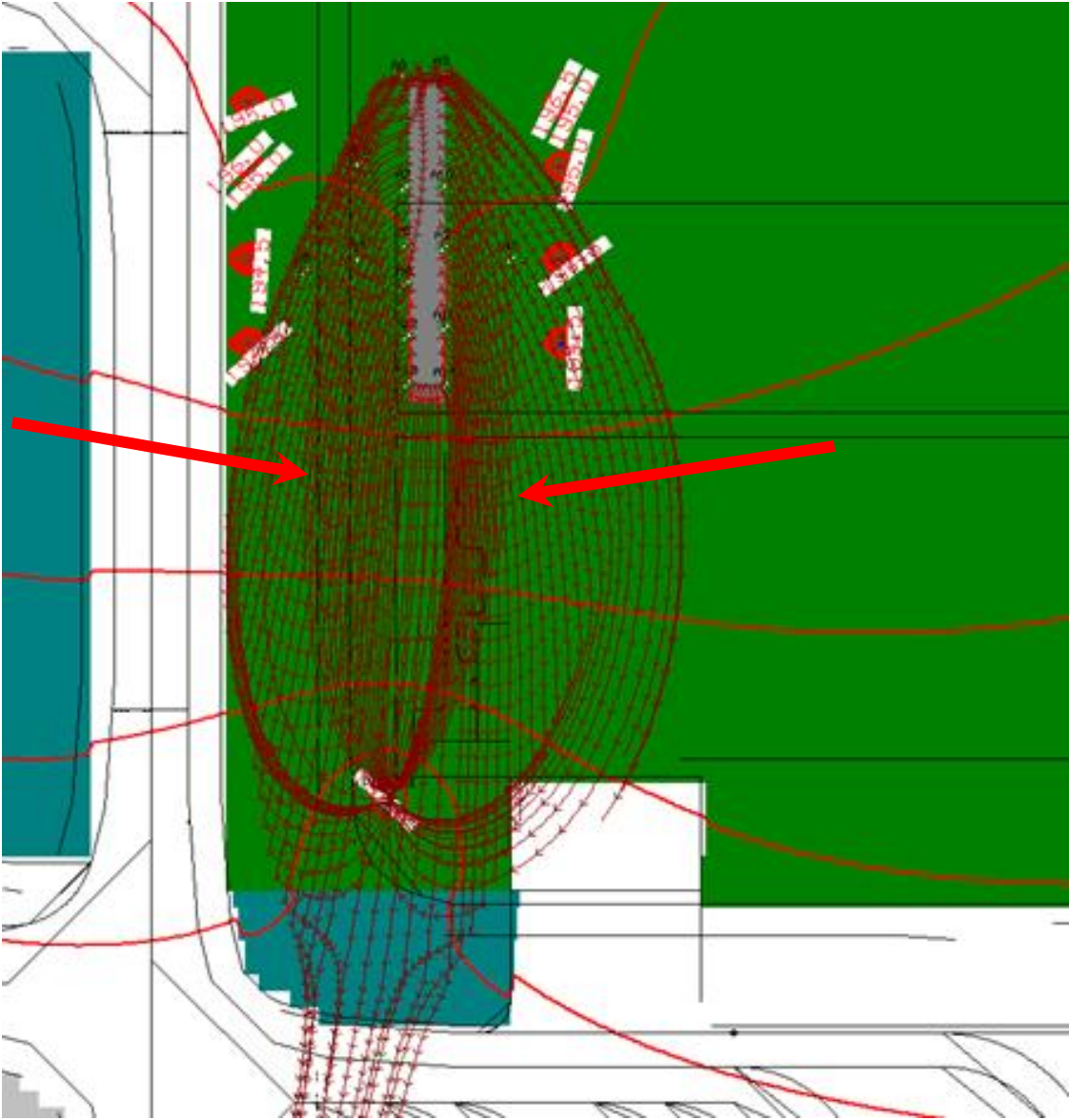
Principle sketch of remediation scheme



Groundwater advection transport 620 days



After 16 months of pumping and re-infiltration



- Modelled lateral transport coorelates with monitoring samples.
- Groundwater samples indicate a PFOS-retardation of plume front $R=1.77$.
- Estimated front arrival to remediation borehole February 2013.
- Remediation period is estimated to approximately 5-6 years (groundwater limits: 500 ng/l PFOS).
- Low pumping rates to limit remediation coats and limit clogging av system by iron, manganese and calsium.