



Name of pilot area / aquifers / type: Langeoog Island, North Germany		Country: Germany Region: North-western Europe		
Approximate location of pilot:				
Name of Shape- / Geopackage file defining the area:	Langeoog.shp		Projection to be used: WGS84 (Epsg4326)	
Hydrological parameters	Mean annual precipitation (mm) / range	Mean annual groundwater recharge (mm) / range	Mean annual groundwater recharge temperature (Celsius)	Thickness of unsaturated zone (range in m)
	777 (445 to 1208)	250 - 500	11	1 - 10
List of aquifers and aquitards in pilot area		No. of confined aquifers in pilot area: 1 (single aquifer where aquitard absent)		No. of unconfined aquifers: 1
Aquifer no. (aqf)/aquitard no. (aqt)	Aquifer/aquitard name	Lithology (Resource WP6 terminology)	Depth range (m)	GW age range (yr)
Aqf-1:	Holocene sands	Fine to coarse sand	0 – 15	5 – 100 (in freshwater lens)
Porosity type	Porous	Fissured	Fissured and porous / dual porosity	
	X			
Aqt-1:		Meltwater deposits	15 – 35 (discontinuous,	



			thickness varies)		
Aqf-2:	Pleistocene sands	Fine sand to gravel	> 100	< 100 yr (in freshwater lens)	
Porosity type	Porous	Fissured	Fissured and porous / dual porosity		
	X				
Applied tracer age indicators $^3\text{H}/^3\text{He}$ + recharge temperature indicators: ^{18}O , D		Applied model (SEAWAT) for simulation of groundwater age			
Objective of age dating studies: Understand behaviour of Tritium and tritiogenic Helium in the freshwater lens and underlying transition zone. Estimate groundwater recharge, investigate worth of freshwater lens as climate archive.					
General groundwater management	Assessment of pollutant history	Assessment of the efficiency of remediation and mitigation measures	Indication of vulnerability of aquifers and water supply wells		
Water Usage	Water supply	Irrigation	Industry	Other	
	x	x		Tourism	
Geoenergy related activities	Shallow Geo-T	Deep Geo-T	Hydrocarbons	Nuclear waste disp.	CO ₂ storage
Mining activities	Construction materials	Minerals /metals	Coal	Other	
REFERENCES					
OPEN Access reports and papers (PDF versions made available in EGDI repository making them downloadable via maps and keyword / free text searches) Vincent E. A. Post, Georg J. Houben, Leonard Stoeckl, and Jürgen Sültenfuß, "Behaviour of Tritium and Tritiogenic Helium in Freshwater Lens Groundwater Systems: Insights from Langeoog Island, Germany," Geofluids, vol. 2019, Article ID 1494326, 16 pages, 2019. https://doi.org/10.1155/2019/1494326.		Reports and papers with restricted access Houben, G. J., Koeniger, P., and Sültenfuß, J. (2014), Freshwater lenses as archive of climate, groundwater recharge, and hydrochemical evolution: Insights from depth-specific water isotope analysis and age determination on the island of Langeoog, Germany, Water Resour. Res., 50, 8227–8239, doi:10.1002/2014WR015584.			



Remarks / other relevant information: