

Groundwater Objectives (GWOs) and Preventive Action Limits (PALs)

What are they?

GWOs are legal standards set by states for underground water. PALs are based on GWOs, and trigger action to prevent contamination from exceeding the GWO. GWOs and PALs may have different names in different states.

How are they used?

Groundwater objectives are legally binding. A business found to be contaminating groundwater beyond a GWO can be shut down. If contamination exceeds a PAL, a business must take action to prevent further contamination, like reducing emissions or slowing production. PALs don't trigger a shutdown, but they can serve as a serious warning that something needs to change.

GP-26 Monitoring Well 16' BGS	RIDEM GA Groundwater Objectives	RIDEM Groundwater Quality PALs
Vinyl Chloride	2	1
1,1-Dichloroethene	7	3.5
trans-1,2-Dichloroethene	100	50
cis-1,2-Dichloroethene	70	35
Trichloroethene	5	2.5
Tetrachloroethene	5	2.5

How are they determined?

GWOs are set to be protective of people and ecologies for a variety of uses. For example, in Massachusetts there are 3 GWO categories, each with its own objectives:

GW-1: Strongest standards, for groundwater that could be used for drinking water.

GW-2: Meant to limit contamination from evaporating out of shallow groundwater and going into the air in a nearby building.

GW-3: Minimum standards that apply to all groundwater in the state.

Preventive Action Limits are based on the groundwater objectives – often set at one half or one tenth of the GWOs.

How are they related to human health?

GWOs are set to be protective of human and ecological health. The set levels are based on assumptions about typical behavior. People with much more (or much less) contact with groundwater should keep exposure in mind when assessing a particular situation.