

Monitored Natural Attenuation (MNA)



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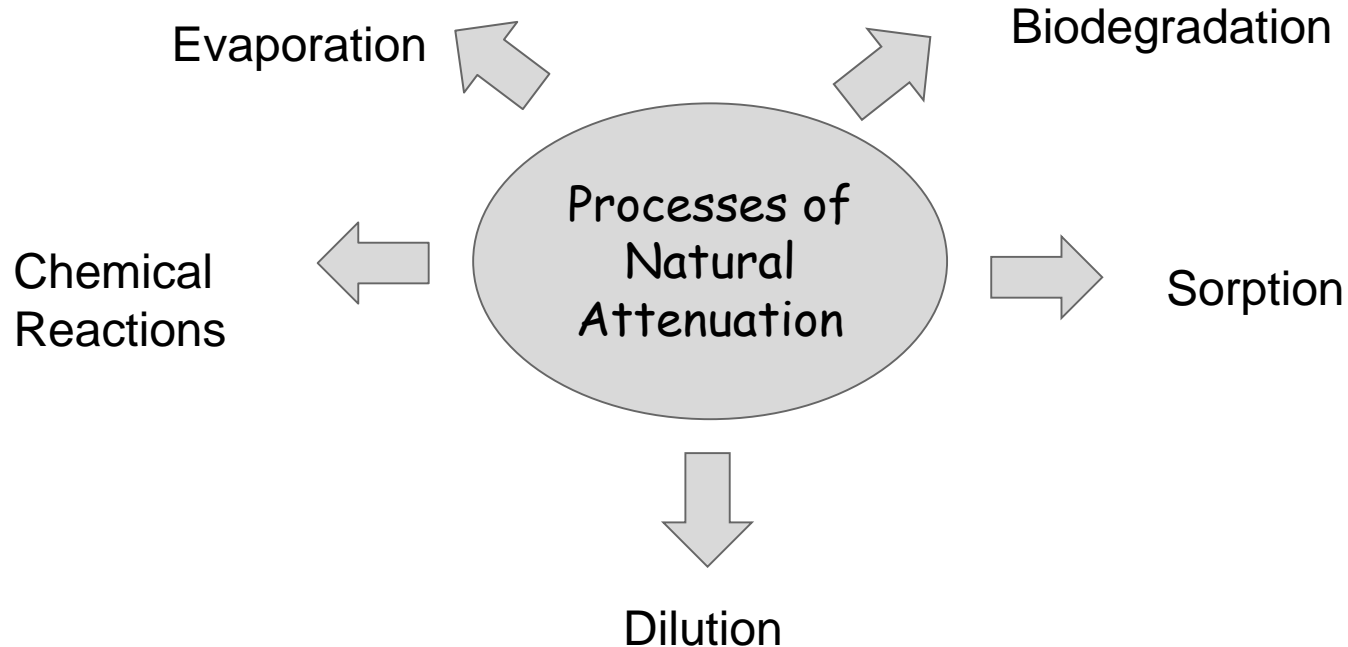
What is this technology?

- MNA uses natural processes to lower contamination concentrations
 - Biodegradation, dilution, and sorption
- Monitoring wells are used to collect data on spills
 - Requires frequent monitoring
- Not a technology
- Not labor intensive

How does it work?

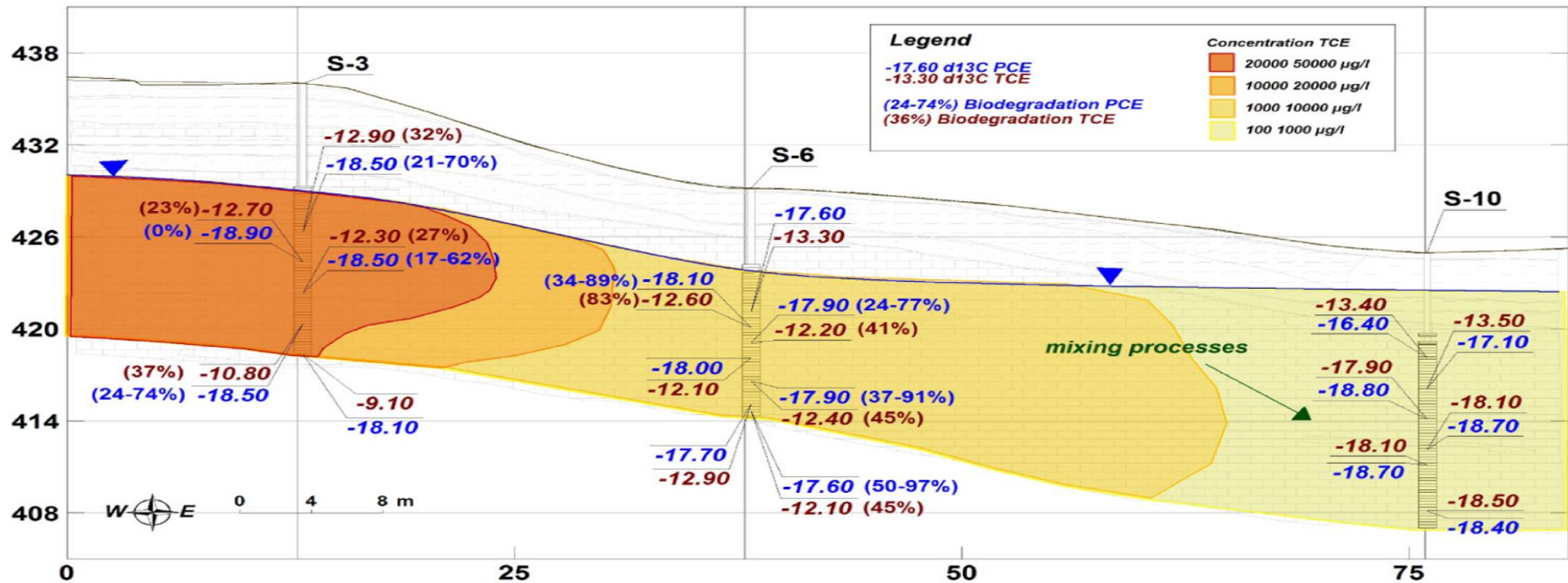
<https://clu->

[in.org/download/Citizens/a_citizens_guide_to_monitored_natural_attenuation.pdf](https://clu-in.org/download/Citizens/a_citizens_guide_to_monitored_natural_attenuation.pdf)



When is this technology useful?

- On spill over soil and groundwater
- When a spill is caught relatively early. Before it has spread too much
- After the source of pollution has been stopped
- With contaminants that could evaporate, biodegrade naturally, or adsorb to soil particles. Such as gasoline.
- When funds are low
- Can be used alongside other remediation technologies



http://www.enviroinsite.com/img/case_studies/catalonia/contour-groundwater-tce-x-section.jpg

What are the limitations to this technology?

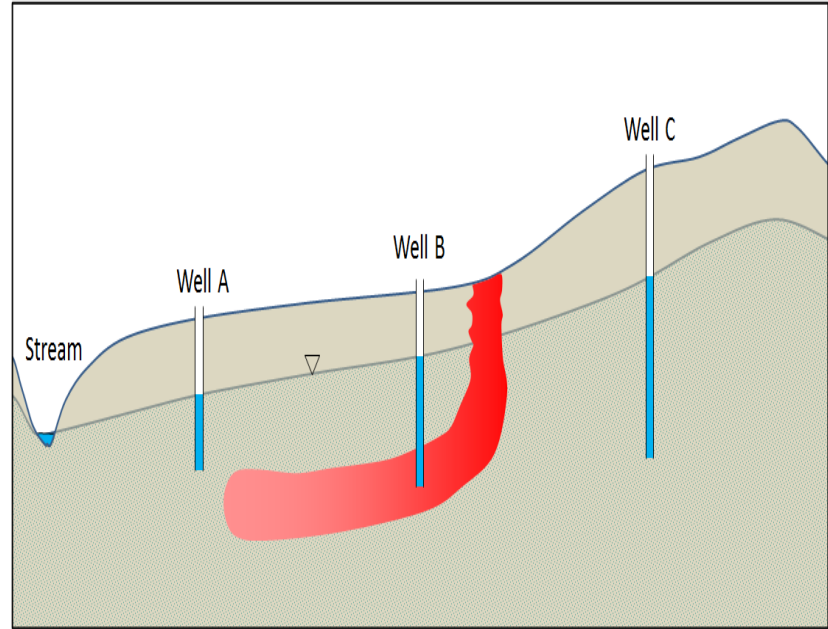
- The natural process can take several years
- Contaminants may migrate
- Long term monitoring
- The land may not be utilized until contamination is gone.

Play dough model vs. College Creek



Picture

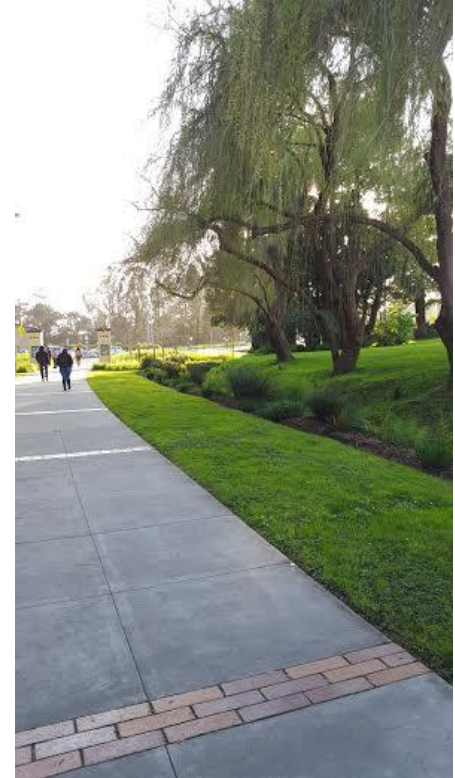
V.S.



Contaminant Plume

Is the technology an appropriate solution? Why or why not?

- Yes
 - Spill needs to be monitored
 - No spreading
- Not appropriate for big spills
 - Need to be used with other technologies
- Useful for small spills



Is the technology reasonably priced in comparison?

- Yes
 - Monitoring systems are only cost
 - The amount of workers needed is low
 - Use of natural processes cut the price of equipment needed

Should HSU Invest in MNA?

- Yes/already are
 - Nature cleans
 - We monitor
- Continue to invest
 - Cost more if it got into the creek
- No investment required (for natural part)
- Must check monitoring



Works Cited

- "Monitored Natural Attenuation." *Cpeo.org*. N.p., n.d. Web. 15 Mar. 2016.
- "Monitored Natural Attenuation." *Monitored Natural Attenuation*. N.p., n.d. Web. 23 Mar. 2016. <<https://www.deq.state.ok.us/lpdnew/FactSheets/MonitoredNaturalAttenuation.htm>>.
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- N.p., n.d. Web. <<https://opentextbc.ca/geology/chapter/14-4-groundwater-quality/>>.
- Photograph found online: "Make your own water filter for kid" Web. 23 Mar. 2016. <<https://s-media-cache-ak0.pinimg.com/736x/b0/30/ea/b030ea10fbe198960cc748d603816804.jpg>>.