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Promotion of Renewable Energy and Energy Efficient Applications for Waste Remediation Sites in Massachusetts

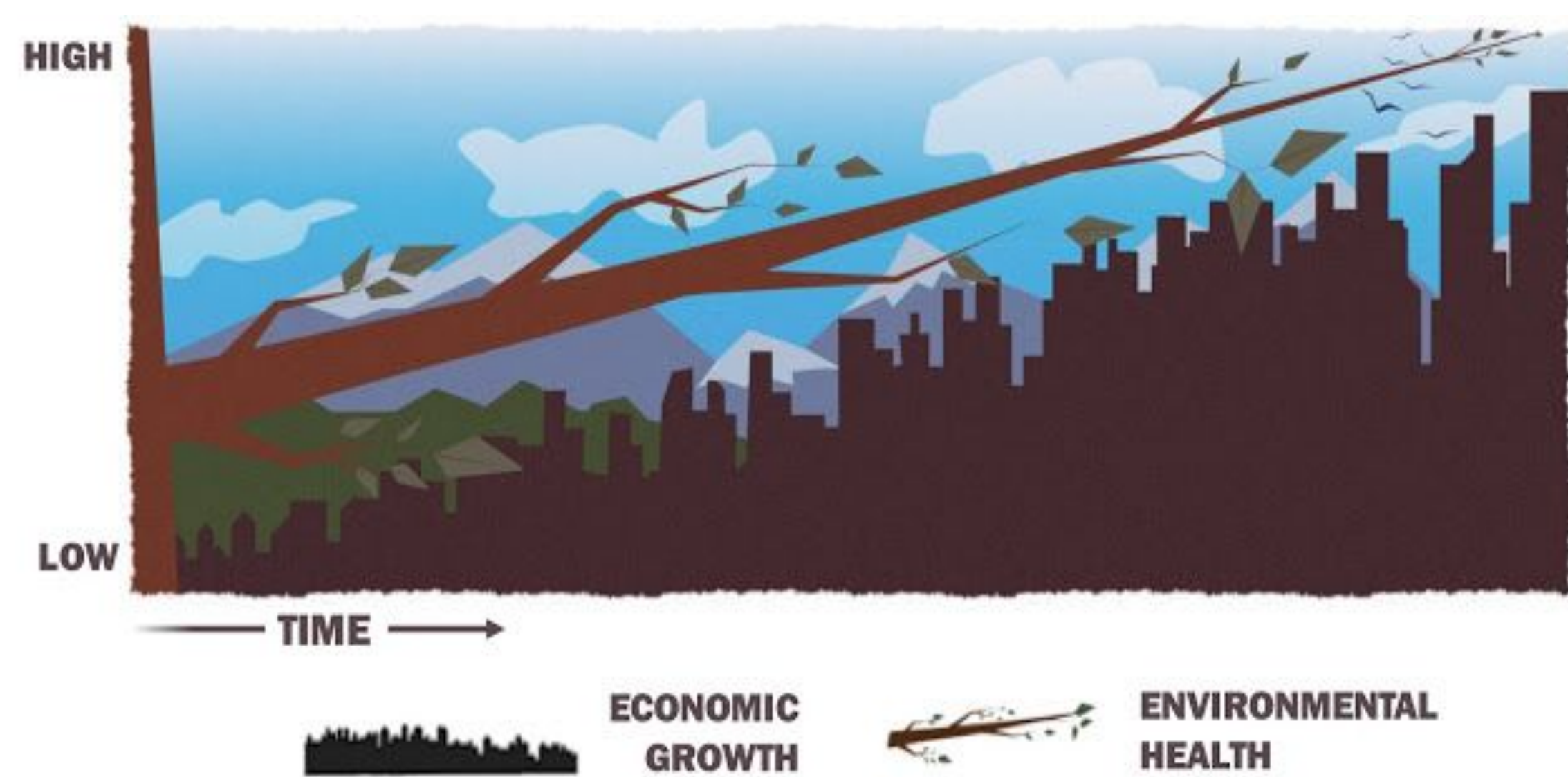


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Waste Sites & The Environmental Paradox

Thousands of contaminated properties and industrial waste sites in the United States cause air, water and soil pollution. Yet, operation of groundwater remediation systems (GWR) can contribute to greenhouse gas emissions. Power systems, necessary to ensure effectiveness of the systems, can also contribute to greenhouse gas emissions.



The Growth-Environment Paradox: An Illustrated Guide (Adam Gibbard, 2016)

Licensed Site Professionals

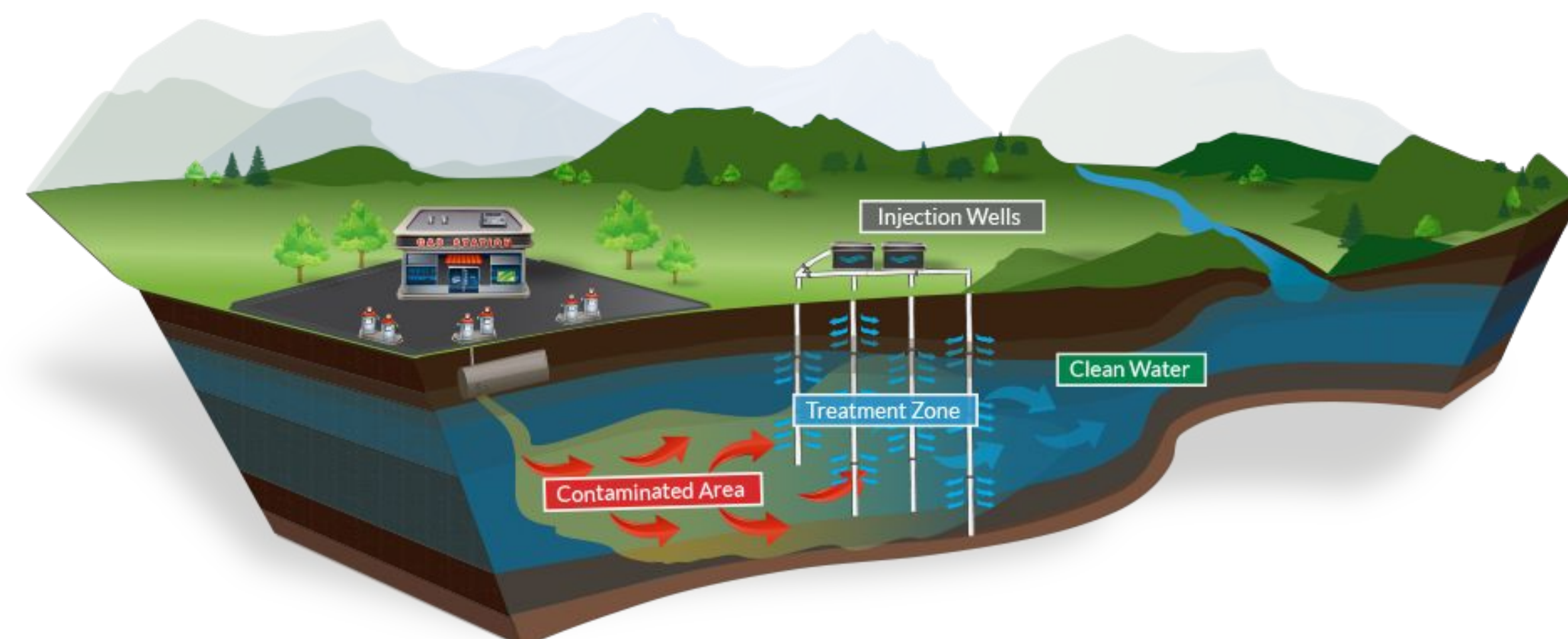
- LSPs are certified individuals who are in charge of assigned waste sites.
- They lead the waste site cleanup process and make decisions on how to clean sites.
- LSPs are encouraged to reduce the overall net environmental footprint of cleanups through Greener Clean Best Management Practices.

Project Goal

Assist MassDEP in promoting renewable energy through solar power and energy efficient waste site remediation techniques for contaminated locations that utilize groundwater remediation systems.

What We Did

1. We investigated how the GWR systems in selected waste sites can be more energy efficient.



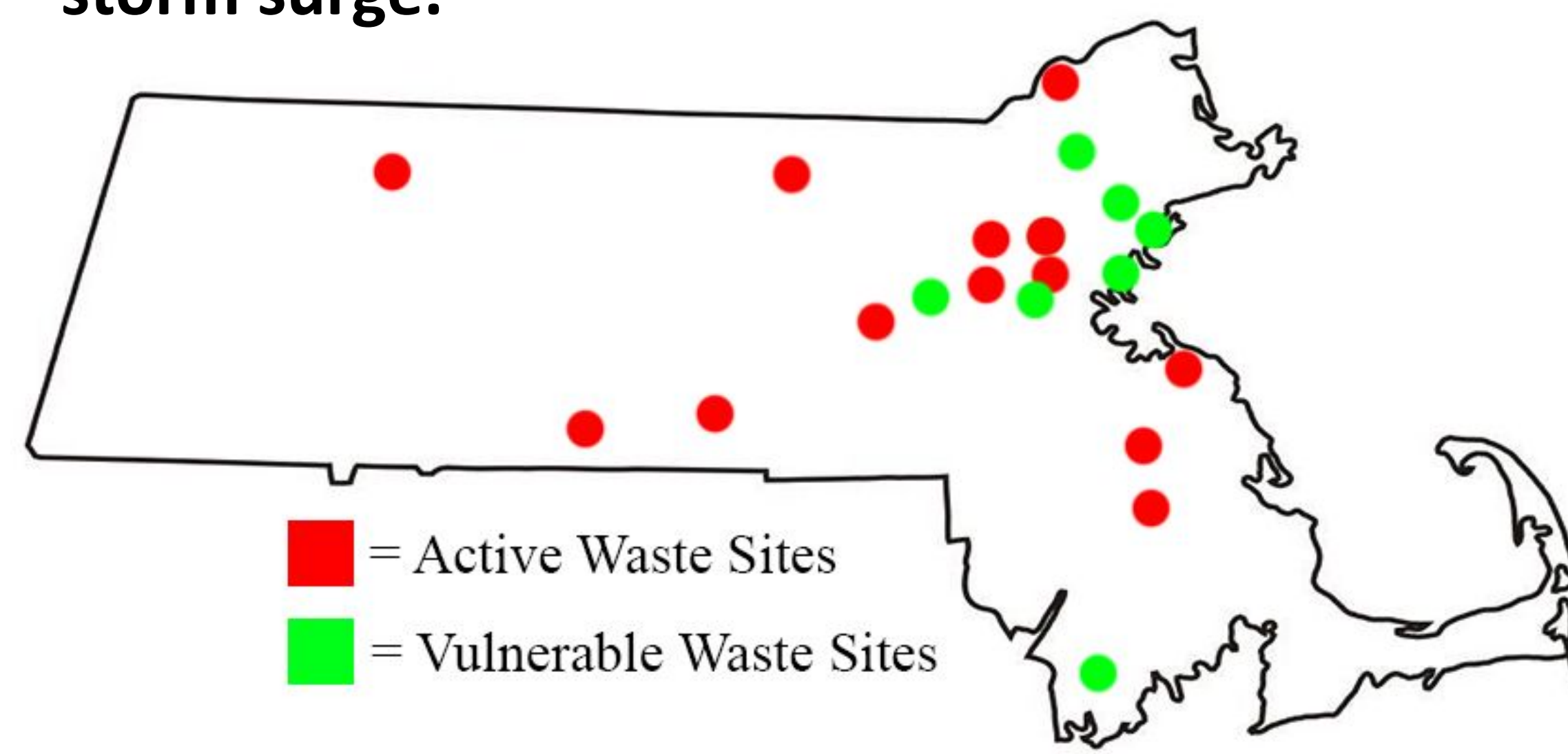
Groundwater Remediation System Sample (Envirosouth, 2018).

2. We examined the plausibility of using solar power as a renewable energy source for GWR systems.



Installing solar panels on a home in Scripps Ranch, Calif. (Reuters photo: Mike Blake, 2017)

3. We identified waste sites in MA actively utilizing GWR systems that are vulnerable to flooding and storm surge.



Map of the Commonwealth showing the locations of all active and vulnerable waste sites (Adobe Photoshop, 2018).

What We Found

- Renewable energy (solar power) is applicable to waste sites through state-funded programs that grant rebates on solar installations.
- Solar energy may not be applicable to certain waste sites due to location, time, or funding restrictions.
- The EPA and others have created best management practices (BMPs) for LSPs and site managers to utilize which can reduce energy consumption and increase GWR system efficiency.
- GWR system components are specific to each waste site so it is hard for MassDEP to recommend which parts to upgrade.

Recommendations for MassDEP

1. MassDEP should utilize the gathered remedial monitoring reports (BWSC108 and Phase IV) to assist in gathering future information on the problems LSPs and site managers may encounter with waste site remediation.
2. MassDEP should utilize and distribute the factsheets created by the EPA to promote renewable energy and energy efficient methods to LSPs and site managers.
3. MassDEP should consider promoting other renewable energy options for waste sites with different locations and available spaces.

Acknowledgments

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