

**EFFECT OF HYDROGELS ON REVEGETATION FOLLOWING
BIOREMEDIATION OF A CRUDE OIL SPILL**

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Water is a critical element in the remediation of crude oil spills in soil and the subsequent revegetation following remediation. In arid and semi-arid areas where rainfall is in short supply, making the most of available rainfall or irrigation water can spell the difference between success or failure of remediation and revegetation. Compounding this issue is the hydrophobicity created in the soil by hydrocarbon coating of soil particles, making the soil difficult to water wet and setting up preferential flow paths that allow water to bypass certain zones.

Hydrogels have been used in the nursery and landscaping industries for many years to ensure availability of water to new seedlings and plant stock. Hydrogels have also been recommended by the USDA to help facilitate germination of seeds during revegetation of disturbed sites in semi-arid regions.

We have conducted an investigation of the effect of hydrogels plus stable organic matter on remediation of a spill of 42° API crude oil in a pasture in a randomized block study with various treatments in triplicate in an area with an average 36 inches of rain. Although the hydrogels had little effect on rates of bioremediation, revegetation (as measured by above ground biomass and canopy cover), was markedly improved by hydrogels.

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