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Radionuclide Dispersion Rates by Aeolian, Fluvial, and Porous Media Transport

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Radionuclide transport was measured from high grade uranium ore boulders near the Nopal I Site, Chihuahua, Mexico. High grade uranium ore boulders were left behind after removal of a uranium ore stockpile at the Prior High Grade Stockpile (PHGS). During the 25 years when the boulder was present, radionuclides were released and transported by sheetflow during precipitation events, wind blown resuspension, and infiltration into the unsaturated zone. In this study, one of the boulders was removed, followed by grid sampling of the surrounding area. Measured gamma radiation levels in three dimensions were used to derive separate dispersion rates by the three transport mechanisms.