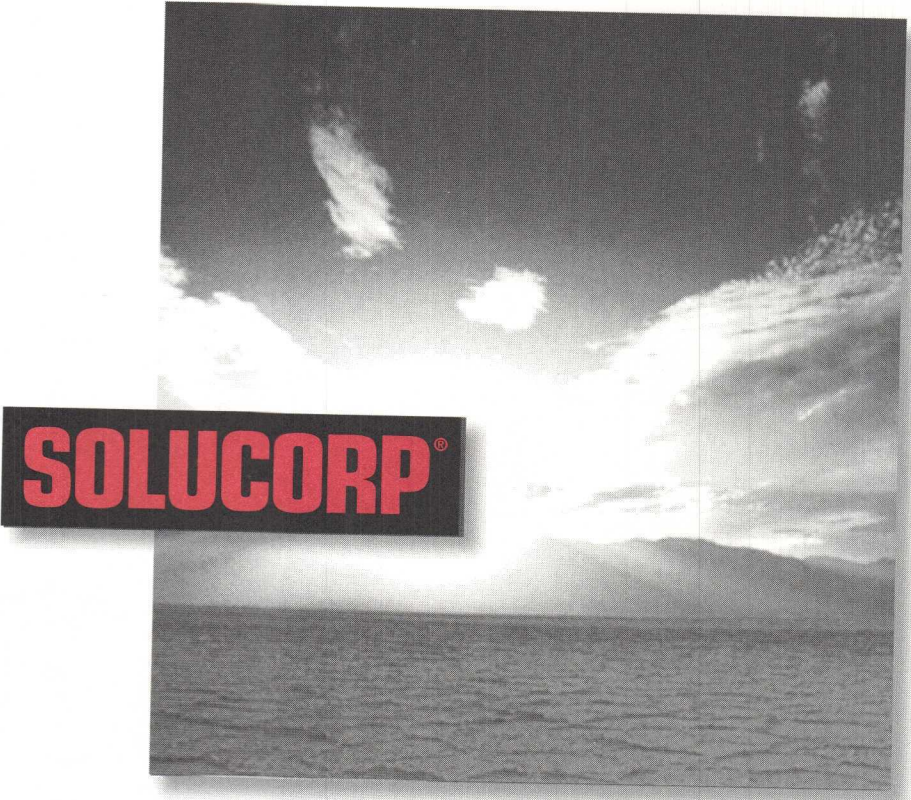


REMEDIATION TECHNOLOGY COMPARISON MATRIX

VARIABLE	MBS PROCESS	LIME/PORTLAND CEMENT/CKD
CHEMISTRY	Chemical reagents are mixed with hazardous materials to form an insoluble metallic compound which prevents leaching in the natural environment.	Chemical additives neutralize the acid in the TCLP test (or in an acidic disposal environment) to produce a final pH that is near the minimum solubility for the metal concerned.
CHEMICAL COST	Chemical expense is usually lower due to low chemical dose.	Chemical expense usually high due to high dosage requirements.
VOLUME/BULKING	<2% volume change.	Typically 15%-30% or more increase in bulk.
MATERIALS HANDLING	No physical change in soil characteristics; low volume addition improves production rate thus shortening project duration. No curing time.	High bulking factor increases material handling which decreases production rate, resulting in a longer project duration. Curing time necessary.
TRANSPORTATION AND DISPOSAL	Lower transportation and disposal cost due to less material to be transported and disposed.	High transportation and disposal cost due to significant increase in treated material.
TOTAL PROJECT COST	Savings of up to 50% or more are feasible.	Higher costs due to chemicals, material handling, transportation and disposal expenses.

COMMERCIAL PROJECT SUMMARY

WASTE TYPE	LEAD CONTAMINATED SOIL	LEAD AND CADMIUM CONTAMINATED SOIL. ELEVATED LEVELS OF ZINC AND COPPER.	LEAD CONTAMINATED COPPER ASH	LEAD CONTAMINATED SOIL	LEAD CONTAMINATED SOIL
SOURCE OF POLLUTION	PIGMENT DYE MANUFACTURER	BRASS MANUFACTURER	BURNING OF COPPER WIRE	LEAD PAINT CHIPS	SKEET SHOOTING RANGE
PRE-TCLP	LEAD 77PPM	LEAD 33PPM CADMIUM 6 PPM	LEAD 62 PPM	LEAD 66 PPM	LEAD 34 PPM
POST-TCLP	LEAD <0.25PPM	LEAD <0.10 PPM CADMIUM <0.01 PPM	LEAD 0.92 PPM	LEAD 0.34 PPM	LEAD <0.1 PPM
REGULATORY LIMIT	LEAD 5.0 PPM	LEAD 5.0 PPM CADMIUM 1.0 PPM	LEAD 5.0 PPM	LEAD 5.0 PPM	LEAD 5.0 PPM
% TCLP REDUCTION	99.7%	LEAD 99.7% CADMIUM 99.8%	98.5%	99.5%	99.7%
VOLUME ADDITION	1.8%	1.6%	2.0%	1.85%	1.75%



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