

# **VETIVER SYSTEM FOR MINE AND QUARRY REHABILITATION**

**THE VETIVER NETWORK (INTERNATIONAL)**



## Threshold levels of heavy metals to vetiver growth as compared with other species

Heavy Metals	Threshold levels in soil (mgKg <sup>-1</sup> )		Threshold levels in plant (mgKg <sup>-1</sup> )	
	Vetiver	Other plants	Vetiver	Other plants
Arsenic	100-250	2.0	21-72	1-10
Cadmium	20-60	1.5	45-48	5-20
Copper	50-10	Not available	13-15	15
Chromium	200-600	Not available	5-18	0.02-0.20
Lead	>1 500	Not available	>78	Not available
Mercury	> 6	Not available	>0.12	Not available
Nickel	100	7-10	347	10-30
Selenium	>74	2-14	>11	Not available
Zinc	>750	Not available	880	Not available



**Australia: Highly erodible alkaline and sodic overburden of open cut coal mine in central Queensland**



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**Australia: This coal mine waste rock dump remains mostly bare after 50 years**



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**One year after  
vetiver planting**

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**Australia: This Bentonite waste dump is barren with an extremely erodible surface which has low water infiltration and high runoff rates.**



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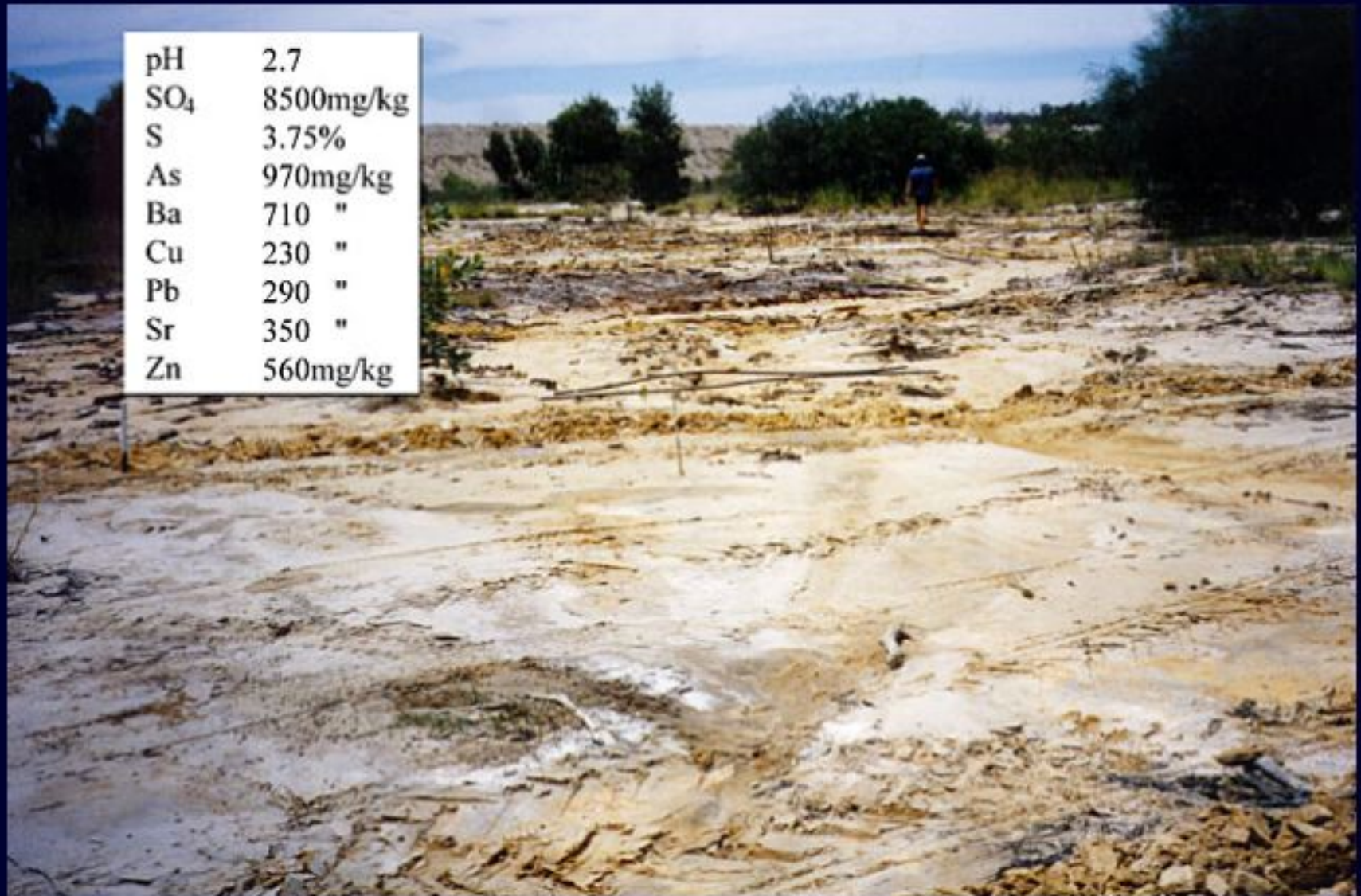
**Fourteen months after planting, note the growth of other species**



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# Australia: An extremely acidic gold mine tailings in north Queensland



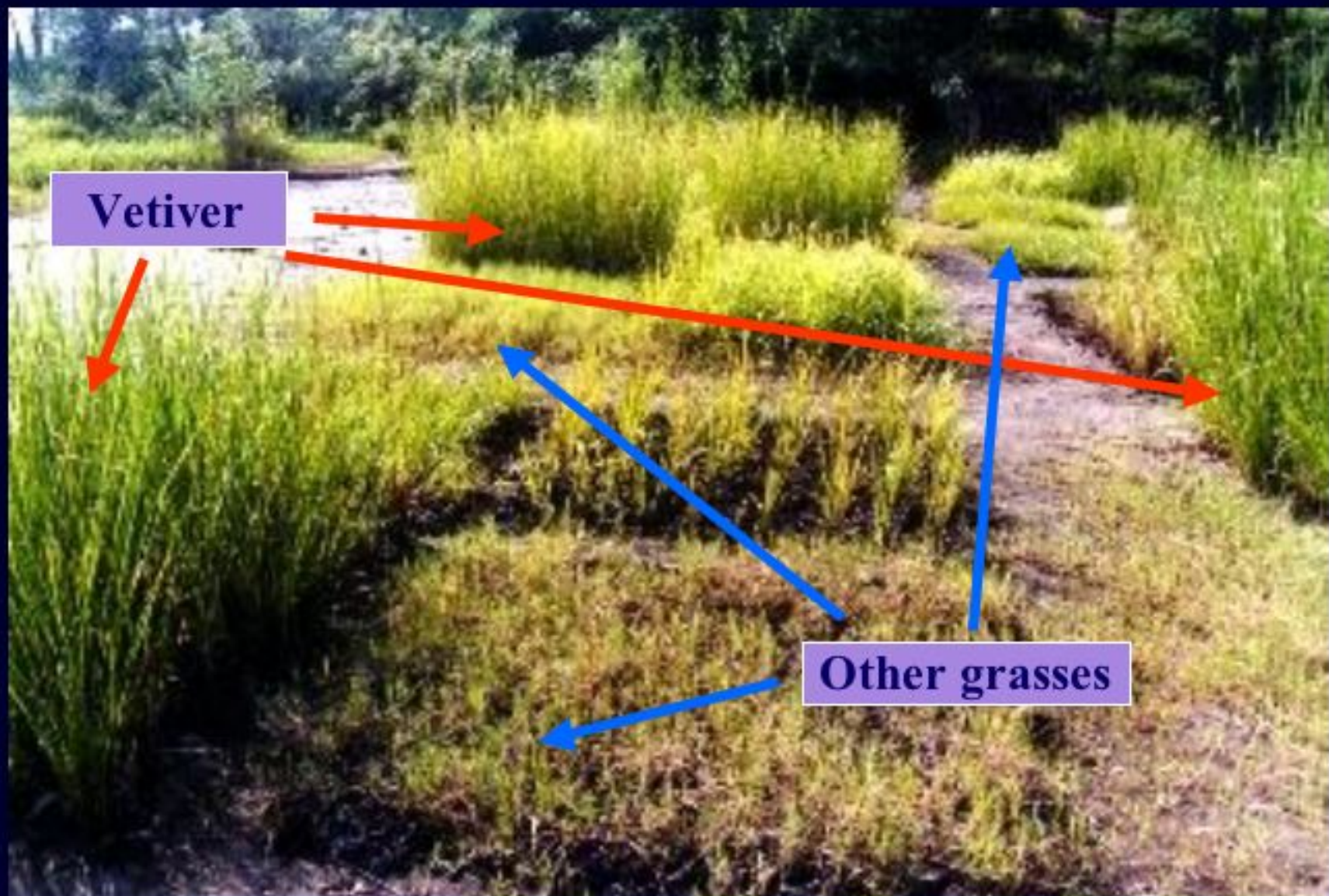
**Good establishment and growth with some lime and fertiliser application**



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# China: Pb – Zn tailings rehabilitation with vetiver grass and other grasses



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## Australia: Waste rock dump of an old quarry in north Queensland



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## China: A quarry waste dump in Guangdong



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**Six months after planting**



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## REHABILITATION OF A BAUXITE MINE IN VENEZUELA



Top left - Before. Top right  
planting!  
Bottom 12 months after planting

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**Eighteen months after planting**



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**Eighteen months after planting**



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