Supplement for: Dry season aerosol iron solubility in tropical northern Australia

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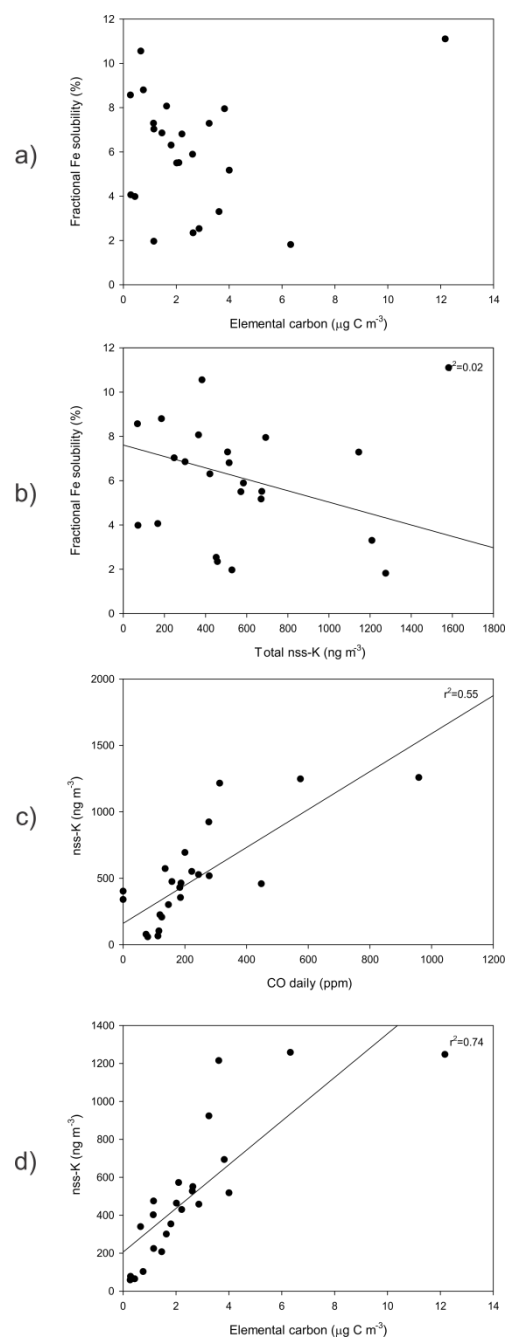
Figure S1: Scatterplots of a) fractional Fe solubility versus elemental carbon concentrations, b) fractional Fe solubility versus nss-K concentrations, c) nss-K concentrations versus CO concentrations, d) nss-K concentrations versus elemental carbon concentrations.
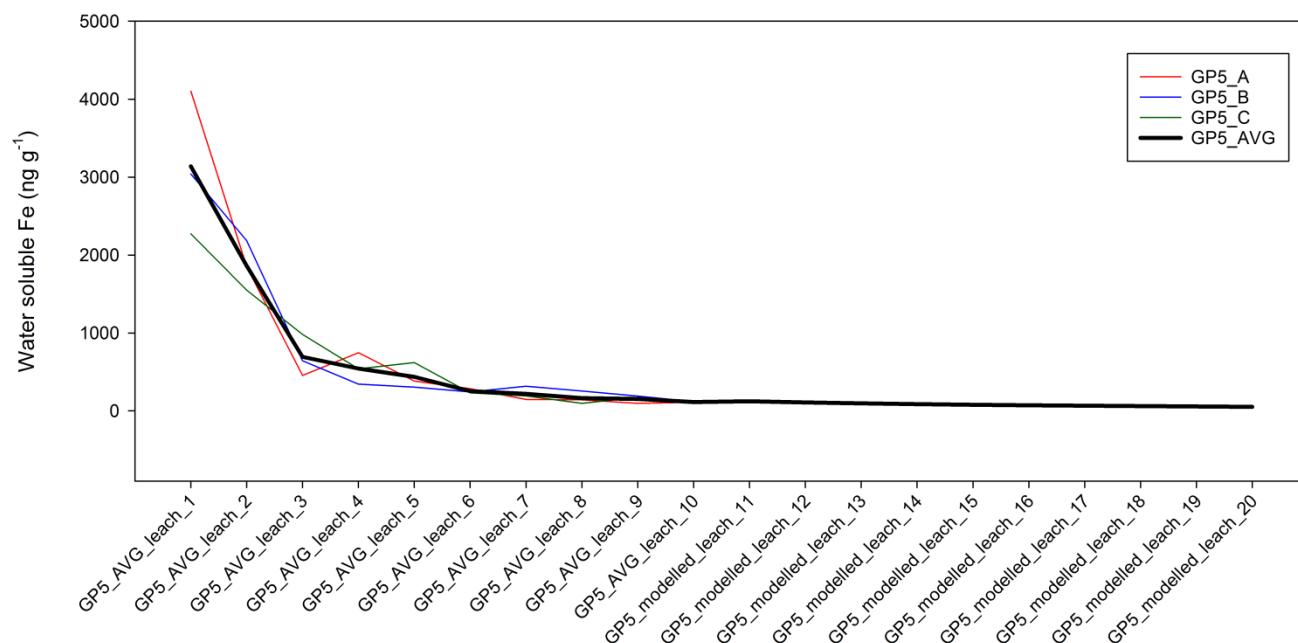
Figure S2: Sequential ultra-pure water leaches of three aliquots (A-C) of GP5. Each filter punch was leached with 10 passes of 50 mL ultra-pure water. Black lined indicates the mean soluble iron concentration of the three aliquots. Leaches 11-20 were estimated by fitting a power law curve to the average water soluble iron concentrations of the GP5 sample.

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Table S1: Recovery rates of total trace metals in certified reference materials (CRM).

CRM recovery %	Al	±	K	±	Ti	±	V	±	Cr	±	Mn	±	Fe	±	As	±	Pb	±
MESS-3	112	8	101	15	92	9	100	9	97	10	97	11	108	8	95	11	103	11
TMF	n/d		n/d		n/d		101	8	102	9	100	9	99	7	91	7	107	8

Table S2: Instrument conditions and measurement parameters.

Instrument	HR-ICP-MS, Element XR (Thermo Fisher, Germany)
Torch	Precision type, quartz o-ring free, PFA injector (Element Scientific Inc.)
Spray chamber	PC^3 chilled cyclonic spray chamber (ESI)
Nebuliser	ST micro centric PFA (ESI)
RF power (W)	~1350
Cool gas flow (L min^{-1})	~16
Auxiliary gas flow (L min^{-1})	~0.9
Sample gas flow (L min^{-1})	~0.9
Additional gas (L min^{-1})	~0.4 Ar
Guard electrode	Activated
Sample uptake	96 s (Seafast II pump auto-sampler with fast 3 sample injection valve)
Sample rinse	50 s, 3 % HCl (ultra-pure)
Pump speed during wash	10 rpm
Internal standard	1.5 ppb In, 5 % HCl (ultra-pure)
Scan type	E-scan
Elements monitored in low resolution ($m/\Delta m$ ~400)	Pb
Elements monitored in medium resolution ($m/\Delta m$ ~4000)	Na, Mg, Al, Ti, V ,Cr, Mn, Fe
Elements monitored in high resolution ($m/\Delta m$ ~4000)	K, As