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PRELIMINARY BIOGEOCHEMICAL STUDIES AT BARNS GOLD PROSPECT, GAWLER CRATON, SOUTH AUSTRALIA

M.J. Lintern

CRC LEME OPEN FILE REPORT 168

August 2004

(CSIRO Exploration and Mining Report 1238F)

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CRC LEME is an unincorporated joint venture between CSIRO-Exploration & Mining, and Land & Water, The Australian National University, Curtin University of Technology, University of Adelaide, Geoscience Australia, Primary Industries and Resources SA, NSW Department of Mineral Resources and Minerals Council of Australia.

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EXECUTIVE SUMMARY

This report describes (i) preliminary biogeochemical investigations on the role of vegetation in the mobilization and recycling of Au and other metals in the regolith and (ii) the potential of vegetation as a sample medium to see through sand cover. It forms part of the CRC LEME Project "Gold and trace metal geochemistry in calcrete-bearing and non-calcrete-bearing regolith". The site chosen for this study is the Barns Gold Prospect located in the northern Eyre Peninsula (South Australia). Here, a seif dune (with natural vegetation) overlays Au mineralization and provides an opportunity to study Au transport in a recent regolith setting.

Melaleuca and *Eucalyptus* leaves, adjoining branches and fruiting bodies were sampled (i) at about 200 m intervals along a 5 km traverse bordering a dune and (ii) at about 25 m intervals across a dune profile. Both traverses crossed mineralization occurring nearby in weathered bedrock at about 35 m depth beneath leached saprolite.

Gold concentrations reached a maximum of 1.3 ppb but not near the known extent of mineralization. However, pathfinders (Ag, Bi and Pb), and other elements not known to be associated with the deposit (Co, Sb, W and Ta), were anomalous in plant samples from over mineralization.

The Barns Gold Prospect was originally discovered from a Au in calcrete surface anomaly and this appears to be the best method of surficial sampling in this terrain. Calcrete sampling provides broad, coherent anomalies and whilst more difficult to implement in dunes, where calcrete is located deep in the profile, vegetation may not provide a practical alternative.

M.J. Lintern

Study Leader
August 2004

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PRELIMINARY BIOGEOCHEMICAL STUDIES AT BARNS GOLD PROSPECT, GAWLER CRATON, SOUTH AUSTRALIA.

M.J. Lintern

1 INTRODUCTION

1.1 Preamble

This report describes (i) preliminary biogeochemical investigations on the role of vegetation in the mobilization and recycling of Au and other metals in the regolith and (ii) its potential to see through sand cover. It forms part of the CRC LEME Project "Gold and trace metal geochemistry in calcrete-bearing and non-calcrete-bearing regolith". The site chosen for this study is the Barns Gold Prospect located in the northern Eyre Peninsula (South Australia). Here, a seif dune (with natural vegetation) overlays Au mineralization and provides an opportunity to study Au transport in a recent regolith setting.

1.2 History of discovery

As with many other recent Au discoveries in South Australia (e.g., Challenger and Tunkillia), the Barns Gold Prospect was found using calcrete. Calcrete sampling at Barns was undertaken by Newcrest Mining Ltd in 1996-97 using a 1 km grid. In 1998, infill sampling at 500 m defined a large Au anomaly covering nearly 7 km^2 (>2.5 ppb) peaking at 31 ppb. Adelaide Resources Ltd acquired the ground in 1999 and in early 2000, detailed calcrete sampling to 100 m centres resulted in a coherent anomaly over 2.5 ppb with a maximum of 49 ppb. This was followed by a 50 hole RAB bedrock drilling program that intersected two zones of mineralization: an upper intersection returned 8 m at 2.97 g/t from 35 m depth in saprolite, while a 7 m interval at 1.8 g/t from 69 m depth was recorded in saprock. Further drilling outlined three zones of bedrock mineralization with a combined strike length in excess of 1.2 km.

1.3 Location and access

Barns Gold Prospect is located in the southern Gawler Craton 340 km, NW of Adelaide and 25 km N of Wudinna at 542000E 6365500N[1] (Figure 1). Access is from the Eyre Highway then via the unsealed Barns Road after which the prospect is named.

1.4 Local geology

The following local geology description has been extracted from Drown (2003). Surface exposures of basement lithologies in the Wudinna district are scarce due to extensive Quaternary cover and deep weathering. An interpretation of the major bedrock components based on information from these limited exposures, existing drillhole logs, and company and government-acquired geophysical and geochronological data, is shown in Figure 2. The amphibolite grade granulite facies Archaean Sleaford Complex dominates the eastern part of the district, while the 1690–1680 Ma Tunkillia Suite occurs in the W. The Sleaford Complex largely comprises felsic paragneiss, mafic granulite and rare carbonate and magnetite-rich units. RAB drilling, near the western boundary of the Archaean (prospect WUD9), intersected lithologies similar to those described from the Hall Bay Volcanics which form a linear N-S belt further S on Eyre Peninsula (Teale et al., 2002). The Tunkillia Suite includes moderately to strongly deformed granodioritic gneiss at Little Pinbong Rockhole located just to the NE of the Barns deposit (Fanning, 1997). Two N–NW trending belts of Warrow Quartzite, the basal unit of the Hutchison Group, lie to the N. Numerous bodies of 1590 Ma Hiltaba Suite granite intrude the older basement rocks. The Gawler Range Volcanics (GRV), which are coeval with the Hiltaba intrusives, form low ranges to the N of the area. The proximity of the extrusive GRV and presence of features such as miarolitic cavities in some of the Hiltaba granite bodies in the Wudinna district imply that the area now exposed was at shallow crustal levels during the Hiltaba-GRV tectonothermal event (Drown, 2003).

[1] All eastings and northings in this report are from Zone 53, AGD66, UTM.

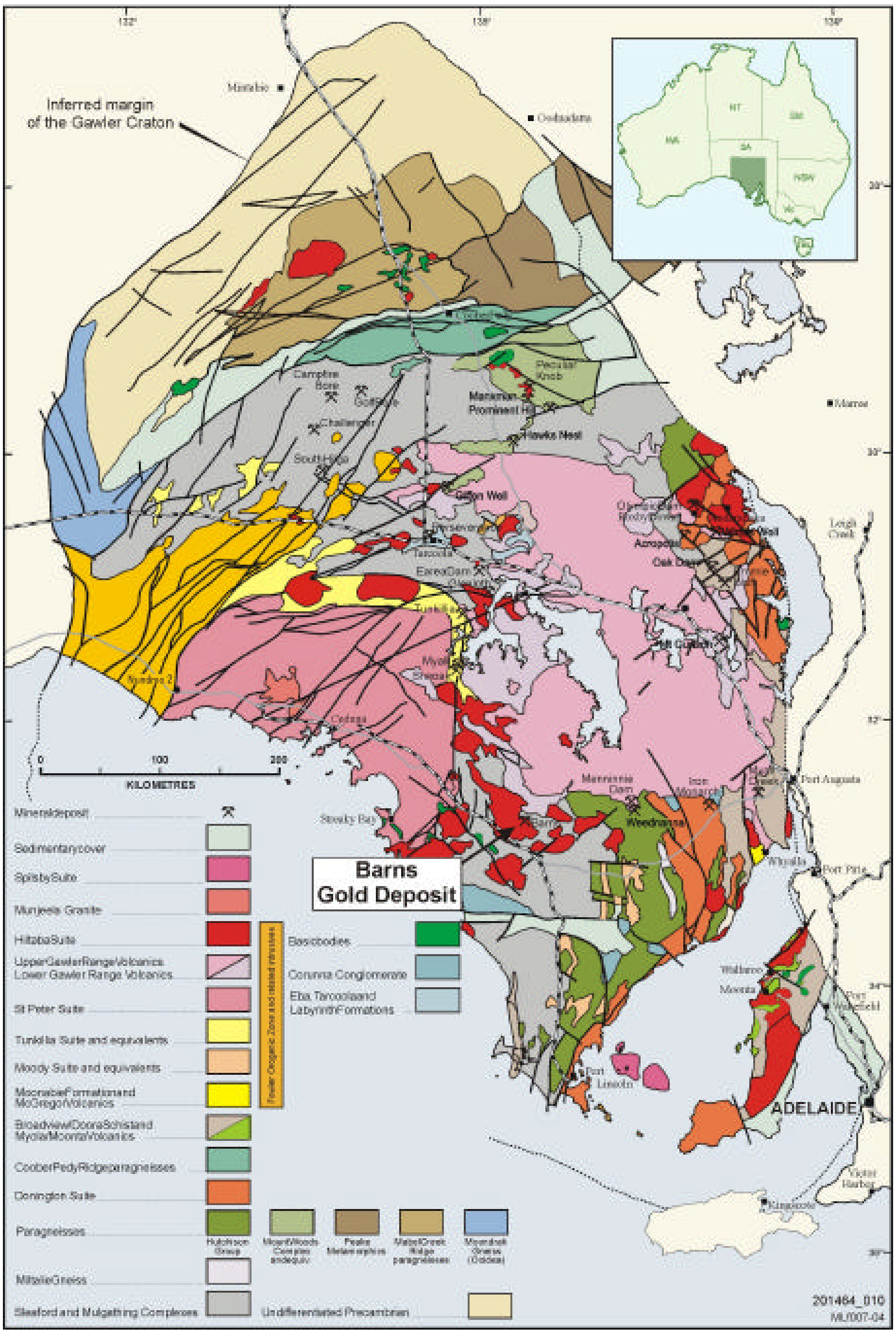


Figure 1: Interpreted subsurface geology of the Gawler Craton and location of Barns Gold Prospect. (Modified after Daly *et al*., 1998).

1.5 Mineralization

According to Drown (2003), primary gold mineralisation at Barns occurs within an extensive envelope of hydrothermal alteration. The alteration halo is asymmetrically zoned around an interpreted principal fault–shear structure at the base of the gold mineralisation, with alteration strongly developed in the structure's hanging wall but weakly developed in the footwall. Numerous, narrow gold-bearing veins (many vuggy) are present at the core of the alteration systems. Mineralogically, the veins are dominated by quartz, pyrite and sericite, with traces of chalcopyrite, galena, sphalerite, fluorite, epidote and native gold. Vein widths reach several tens of centimetres but are commonly less than 10 mm. Many of the veins are vuggy. Copper, Pb, Bi and Ag may be present in anomalous but sub-economic concentrations in the gold mineralised intervals (Drown, 2003). Gold is almost entirely depleted in the bleached clay saprolite (Drown, 2003).

1.6 Regolith

The regolith is comprised of aeolian sand to clayey sand up to 2 m thick in the swales increasing to 15 m thick in dune crests. Towards the base of the sand, pedogenic carbonate occurs as coatings to the sand and, in greater concentrations, as rhizomorphs. Nearer the unconformity with the weathered basement, carbonate and clay concentrations increase at the expense of quartz. The calcrete near and within the top of saprolite is nodular, laminar and massive. The residual regolith may be overlain with fragments of ferruginous saprolite and angular quartz and is frequently silicified and/or mottled (with Fe oxides) in its upper metre becoming less indurated and more clay-rich with depth. The residual regolith is up to 50 m thick and is comprised of whitish clays above variably coloured saprolite.

1.7 Physiography

The Barns Gold Prospect is situated in gently sloping to flat lying terrain with relief of 10-20 m. Seif (longitudinal) dunes up to 15 m high traverse the area and are orientated approximately E-W (Figure 3). Prominent hills of the Gawler Ranges occur 20 km to the N and are separated from the Barns prospect by salt lakes in a drainage.

The area has been mostly cleared for agricultural purposes (wheat) but native vegetation remains on the dunes and adjacent road verges. The dunes are covered in open shrubland of mallee (multi-stemmed) eucalyptus to 5 m (principally *Eucalyptus incrassata* subsp. *incrassata* and *E. socialis*). Other shrubs up to 3 m in height are predominantly *Melaleuca uncinata*. Smaller shrubs, herbs and grasses including spinifex occur as an understorey. The road verges in interdunal corridors support larger *Eucalyptus* spp.

The nearest weather station is located at Kyancutta, about 20 km to the SW. The area is semi-arid and has sporadic rain falling during hot summers and mild to warm winters. Heavy rainfall can occur during winter, associated with cold fronts from the SW, or during summer, associated with rain-bearing depressions from cyclones originating in the NW. Temperature means of daily maximum, daily minimum, highest maximum and lowest minimum are 25°C, 9°C, 49°C and -7°C, respectively. The mean annual rainfall and highest daily rainfall are 318 mm and 77 mm (during January), respectively (Bureau of Meteorology, 2004).

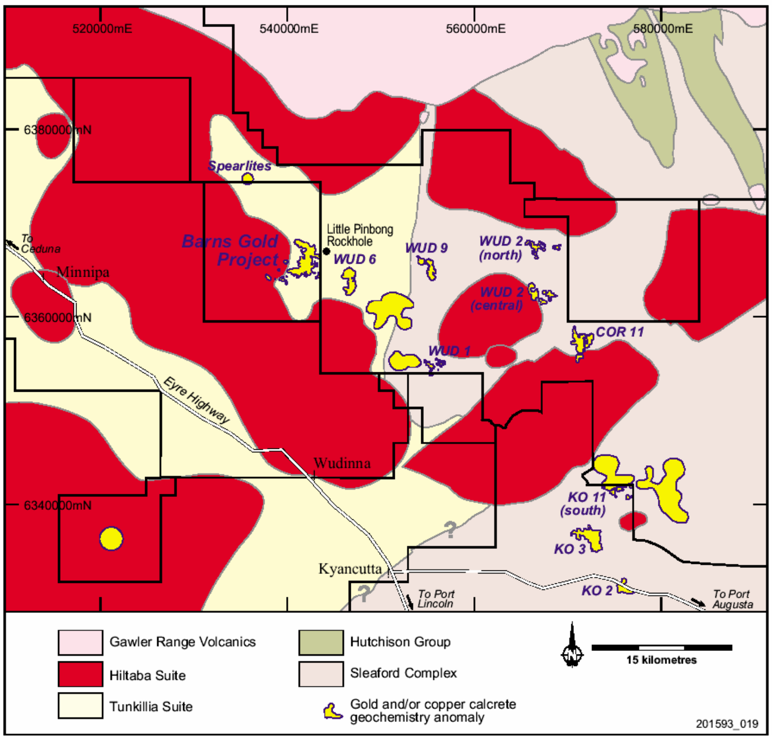


Figure 2: Wudinna district bedrock geology interpretation (from Drown, 2003).

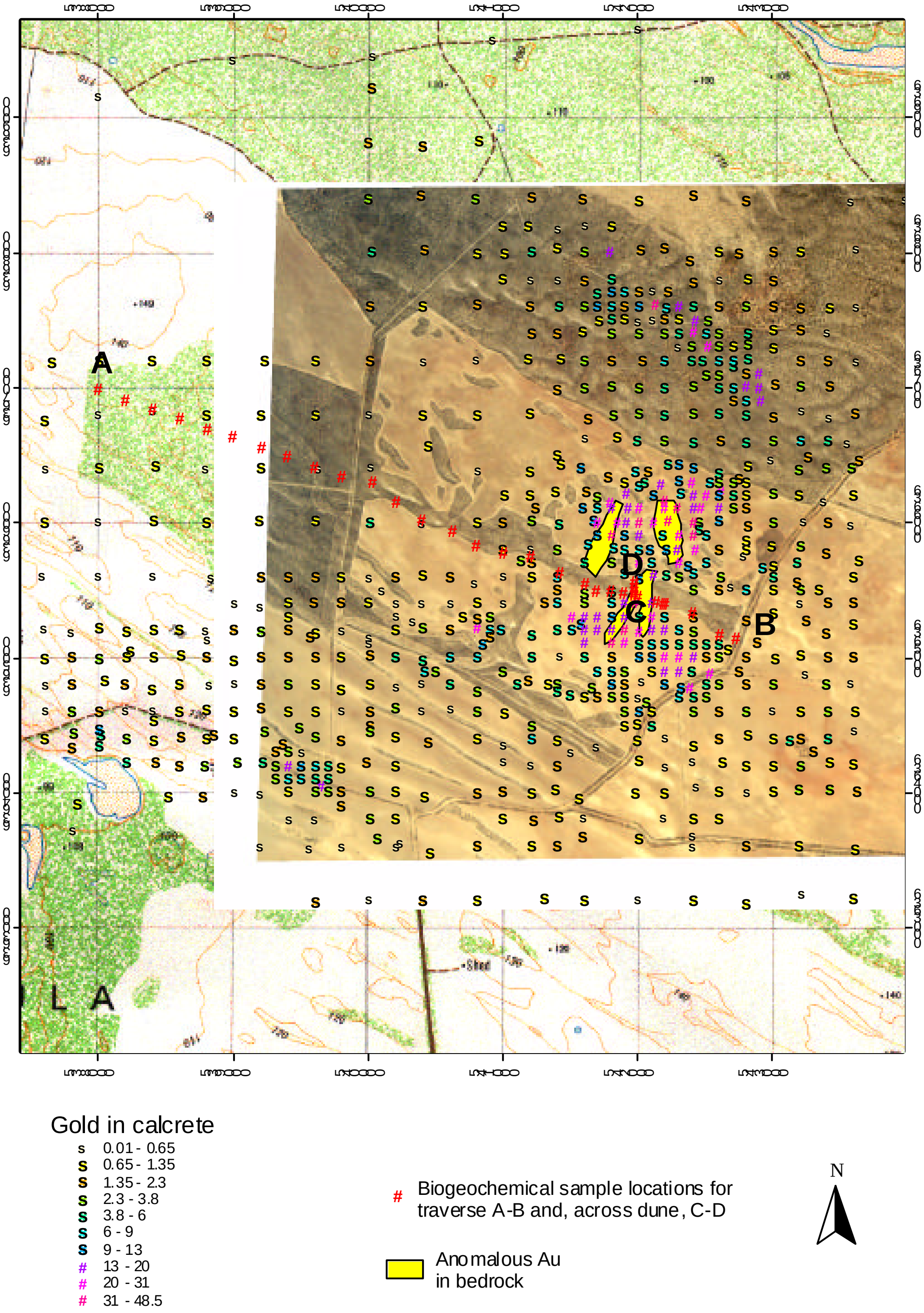


Figure 3: Aerial photograph of the Barns Gold Prospect overlaid with Au in calcrete (in ppb), biogeochemical sampling points, and anomalous Au in bedrock (from Drown, 2003). Calcrete geochemical data from Adelaide Resources Ltd. Base map is the Yaninee (5932-2) 1:50000 Topographical Series.

1.8 General work objectives

The primary objective of the project is to conduct a biogeochemical survey of the Barns Gold Prospect. Specific objectives are to:

1) identify which plant species are the most appropriate to sample;
2) examine what effect sand dunes have on the biogeochemical surface expression of mineralization;
3) determine which element(s) are effective in delineating mineralization; and
4) make recommendations on the utility of biogeochemical sampling compared with other exploration techniques in this type of terrain.

1.9 Specific work program

The Barns Gold Prospect was visited in September 2003 for the purpose of collecting vegetation for a biogeochemical study. A 5.1 km traverse crossing mineralization (A-B in Figure 3) was selected and following the southern edge of the dune that bordered a wheat paddock (Figure 4). A shorter traverse (0.1 km, C-D in Figure 3) across the dune profile above mineralization was also sampled to test the effect of dune thickness on any detected biogeochemical surface expression.

Figure 4: Photograph showing boundary between dune and wheat paddock. Sampling was confined to edge of dune except for the dune traverse.

A second sampling trip was undertaken in June 2004 to (i) collect dune samples for dating purposes and elemental analyses (which will be described in a later report) and (ii) elevation data for the dune topography.

2 METHODS

2.1 Sample collection

Seventy samples were collected from two main species (*Eucalyptus incrassata* subsp. *incrassata* and *Melaleuca uncinata*), along two traverses (long section A-B, and the short dune cross section, C-D, Figure 3); at four sites *E. socialis* was collected in place of *E. incrassata* (Figure 5). The species sampled were considered to be the most appropriate to sample as they were encountered throughout the dune system. Sampling was confined to the last 20 to 30 cm of each plant. Samples of leaves, small branches and fruiting bodies were collected using secateurs from a standard height (approximately 1.5 m) and from all sides of the plant. Samples were placed into numbered calico bags which were, in turn, put into breathable polyweave bags. These bags limited moisture build up and mould deterioration. All samples were transferred to the CSIRO Exploration and Mining Sample Preparation Laboratory for sorting, drying and splitting.

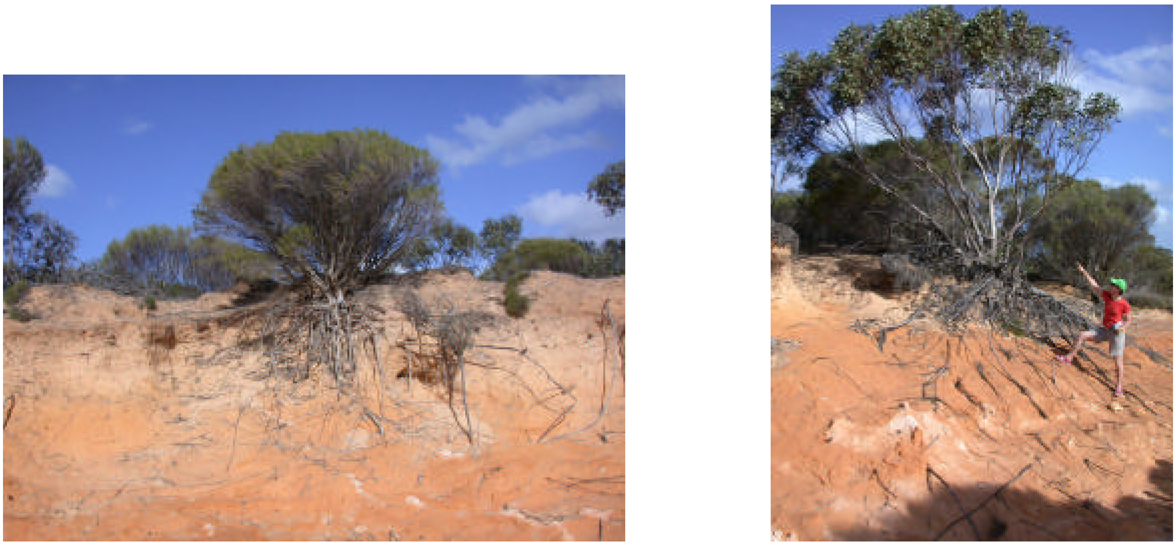


Figure 5: Photographs of *Melaleuca uncinata* (left) and *Eucalyptus incrassata* (subsp. *incrassata*) (right) in road cutting through a nearby dune. Note whitish patches in dunes are calcareous rhizomorphs and powdery calcareous coatings on sand grains.

2.2 Sample preparation and analyses

Samples were dried at 105 ^{o}C before pulverizing at CSIRO in a cross beater mill using a 1 mm screen. Sub-samples were dispatched to Actlabs Pacific Pty Ltd (Perth) and thence to Activation Laboratories Ltd (Ancaster, Ontario) for analysis by two methods and using internal standards (detection limits in ppb in parentheses unless stated):

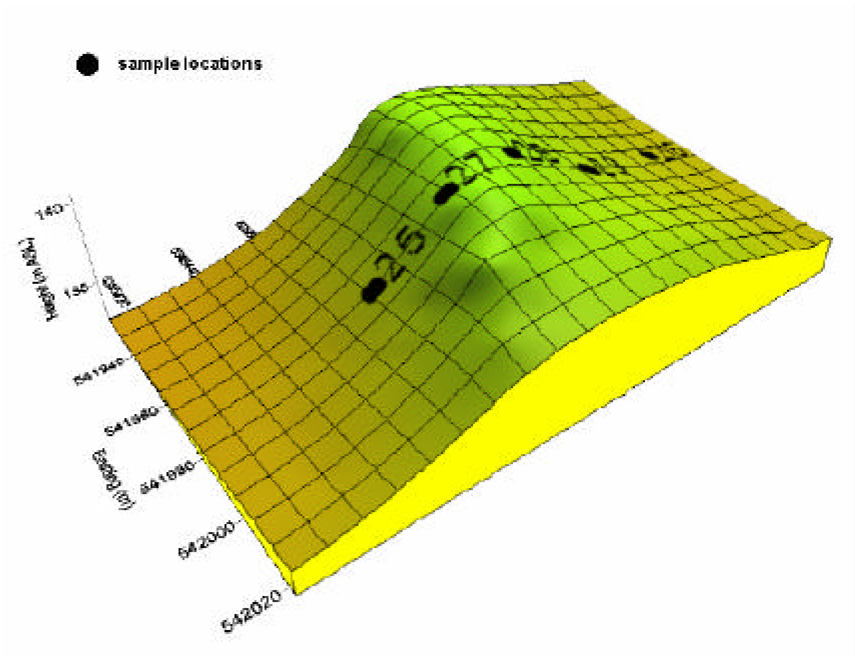
(i) approximately 15 g of sample was compressed into a briquette. The briquettes were irradiated and their gamma ray spectra measured and quantified for Ag (0.3), As (20), Au (0.1), Ba (5 ppm), Br (10), Ca (0.01%), Ce (100), Co (100), Cr (300), Cs (50), Eu (50), Fe (50 ppm), Hf (50), Hg (50), Ir (0.1), K (100), La (10), Lu (1), Mo (50), Na (1000), Nd (300), Ni (2000), Rb (1000), Sb (5), Sc (10), Se (100), Sm (1), Sr (10 ppm), Ta (50), Tb (100), Th (100), U (10), W (50), Yb (5), and Zn (2000);

(ii) 1 g of dried sample was digested using aqua regia in Teflon bombs then analysed using HR-ICP-MS (Finnegan Mat ELEMENT 2) for Ag (1), Au (0.1), Ba (1 ppm), Be (0.1), Bi (1), Ca (0.2%), Cd (0.05), Ce (200), Co (0.5), Cr (500), Cs (0.1), Cu (15), Dy (0.03), Er (0.03), Eu (0.1), Fe (400), Ga (10), Gd (1), Ge (100), Hf (2), Hg (2), Ho (0.01), In (0.1), K (500), La (0.2), Lu (0.2), Mg (500), Mn (10), Mo (1), Na (10 ppm), Nb (0.5), Nd (0.2), Ni (100), Pb (6), Pd (0.2), Pr (0.5), Pt (0.1), Rb (10), Re (0.1), Ru (0.5), Sb (0.2), Sc (1), Se (250), Sm (0.1), Sn (40), Sr (15), Ta (0.1), Tb (0.02), Te (1), Th (3), Ti (14), Tl (0.5), Tm (0.02), U (10), V (10), W, 5), Y (0.2), Yb (0.4), Zn (200) and Zr (50).

2.3 Dune topography

Elevation data for the dune was collected using a Sokkia DGPS post processing unit and processed using LOCUS software (Ashtech). Post processing gave accuracies better than 5 mm. The dune profile in the vicinity of the dune traverse was constructed from this data (Figure 6).

a)



b)

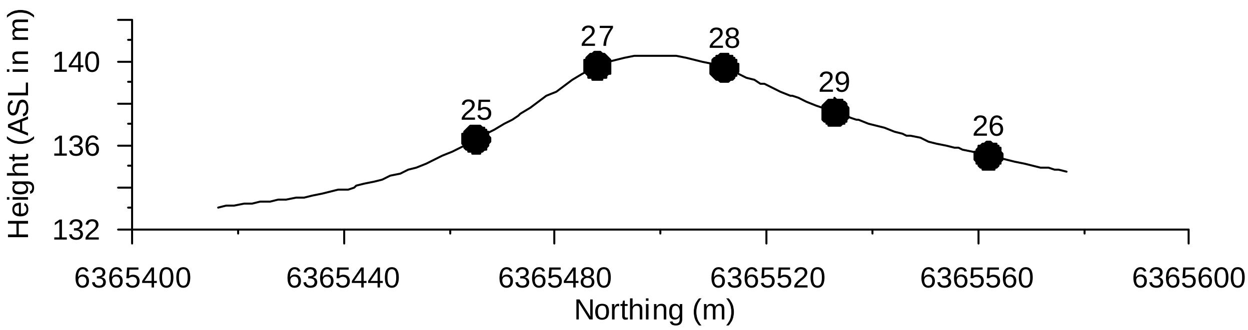


Figure 6: Dune morphology (a) and cross section (b) of the dune with "dune traverse" biogeochemical sample locations labelled 25-29. Vertical height exaggeration x40.

3 GEOCHEMICAL RESULTS

Plotted results and tabulated data for all elements (dry weight) are located in the Appendix. Selected plots, including pathfinders associated with mineralization, are shown in Figure 7 for *Eucalyptus* and Figure 8 for *Melaleuca*. The results show:

1) For *Eucalyptus*, at least one sample over mineralization is anomalous in Ag (maximum 22 ppb), Bi (32), Pb (210), Sb (14) and W (150). Apical, or one sample anomalies, occur for Au, Ba, Cs, Ga, Hf, Nb, Sb, Sc, Se, Ta, Th, Tl, Zn, Zr and REE. There is a broad Br anomaly towards the E half of the traverse.
2) For *Melaleuca*, at least one sample over mineralization is anomalous in Co (maximum 600 ppb), Pb (215) and Ta (2). Apical, or one sample anomalies, occur for Ba, Be, Cd, Cr, Cs, Fe, Hf, Nb, Ni, Rb, Sb, Sr, Th, Tl, U, V, Zn, Zr and REE
3) There is generally poor agreement between INAA and HR ICP MS data for the same element e.g., Au (Figure 9). This suggests incomplete dissolution (for ICP MS), sample inhomogeneiity or other analytical/sample preparation problems e.g., contamination. Higher concentrations were reported for some elements for the partial analysis (aqua regia HR ICP MS) compared with the total analysis by INAA. The very high degree of discrepancy between the two data sets for

certain elements e.g. Na (Figure 9) probably precludes sample inhomogeneiity and that higher concentrations were found with some partial digest suggests there may be other factors involved (Figure 9). The data for *Eucalyptus* appear to be in better agreement than *Melaleuca*; the reason for this is unclear.

4) Lower metal contents are expected in vegetation growing at the top of the dune compared with the base of the dune since tap roots may not always reach the comparatively element-rich saprolite. While this pattern is observed in W (*Eucalyptus*), Ta (*Melaleuca*), and Au (*Melaleuca*), there is no consistent relationship between dune height and element concentration for many elements (see "dune traverse" data in Figure 7, Figure 8 and the Appendix). This suggests that elements are not primarily sourced via long tap roots reaching beneath the sand.
5) For Au, the highest concentrations (0.8 ppb for *Eucalyptus*, and 1.3 ppb for Melaleuca) occur away from known Au mineralization. However, it needs to be established whether these are false anomalies (as suggested by a low Au in calcrete response) or whether their Au concentration in vegetation indicates the presence of further Au mineralization. In Western Australia, concentrations of Au in vegetation >2 ppb appear to be anomalous (Butt *et al*., 1997).
6) Many anomalies are not coherent and rarely spread beyond 200 m for any element. In comparison, the Au in calcrete anomaly is coherent over several hundred metres in this area (Figure 3).

4 CONCLUSIONS

1. Leaves, twigs and fruiting bodies are anomalous in pathfinders and other metals (Ag, Co, Bi, Pb, Sb, W, Ta) associated with mineralization.
2. *Eucalyptus* is superior to *Melaleuca* for sampling as it tends to produce stronger anomalies in more elements, particularly pathfinders. This is probably due to the presence of long tap roots which are able to source elements deeper in the regolith.
3. Biogeochemical anomalies are not coherent and rarely spread more than 200 m (one or two samples) in size. Often, anomalously high metal concentrations are adjacent to background concentrations making interpretation and effective sampling strategies more difficult than other techniques such as calcrete sampling.
4. Biogeochemical sampling was not effective for Au. At Barns, pathfinders (present in higher concentrations than Au) have provided anomalies, but they may not always be present at other prospects. Therefore, explorers may run the risk of missing mineralization if relying on this approach alone.
5. Sample analysis and preparation are on going issues with the biogeochemical approach. As metal concentrations are low, samples have to be carefully collected and prepared to avoid contamination. Inconsistencies are apparent in the data that have not been resolved between the two analytical techniques tested here. HR ICP MS is not currently readily available in Australia although its ability to detect low concentrations of metals e.g., Bi at 1 ppb indicates its potential usefulness over other techniques such as INAA and standard ICP MS.
6. Calcrete appears to be a more reliable sampling medium than plants.

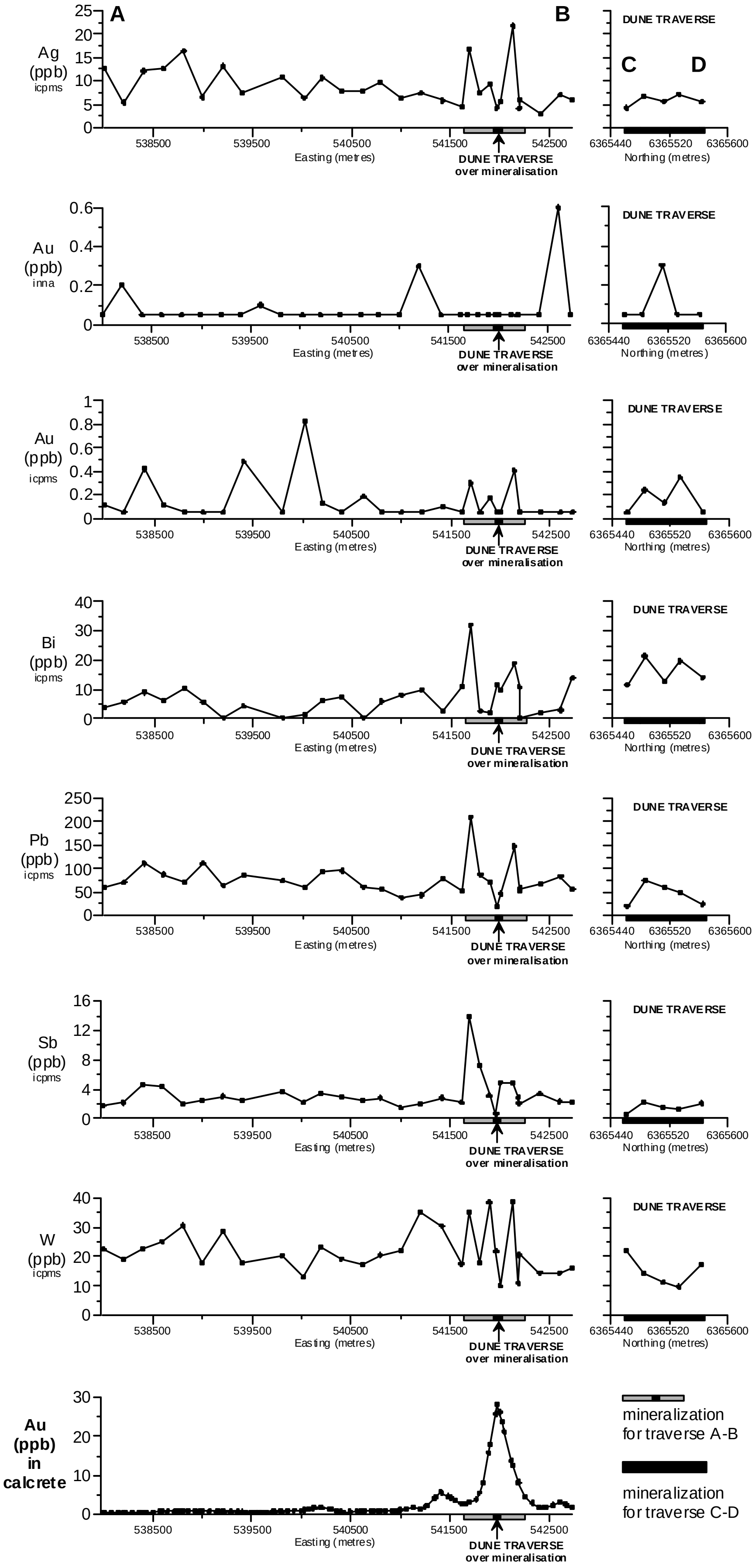


Figure 7: Concentrations of selected elements across mineralization in *Eucalyptus* leaves, twigs and fruits at Barns. Interpreted Au in calcrete is shown for comparison. See Figure 3 for locations of traverses.

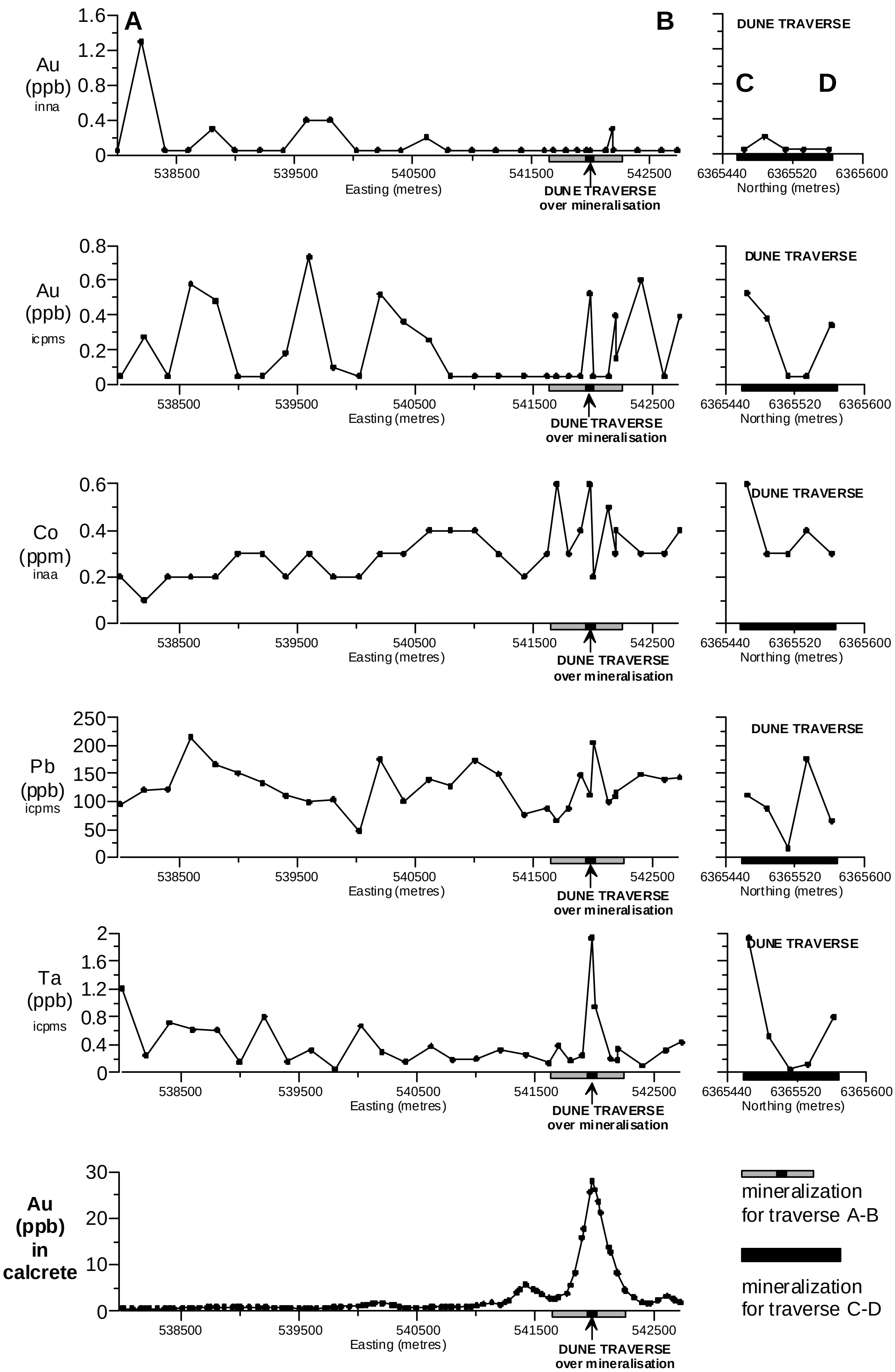


Figure 8: Concentrations of selected elements for traverse A-B and C-D in *Melaleuca* at Barns. Interpreted Au in calcrete is shown for comparison. See Figure 3 for locations of traverses.

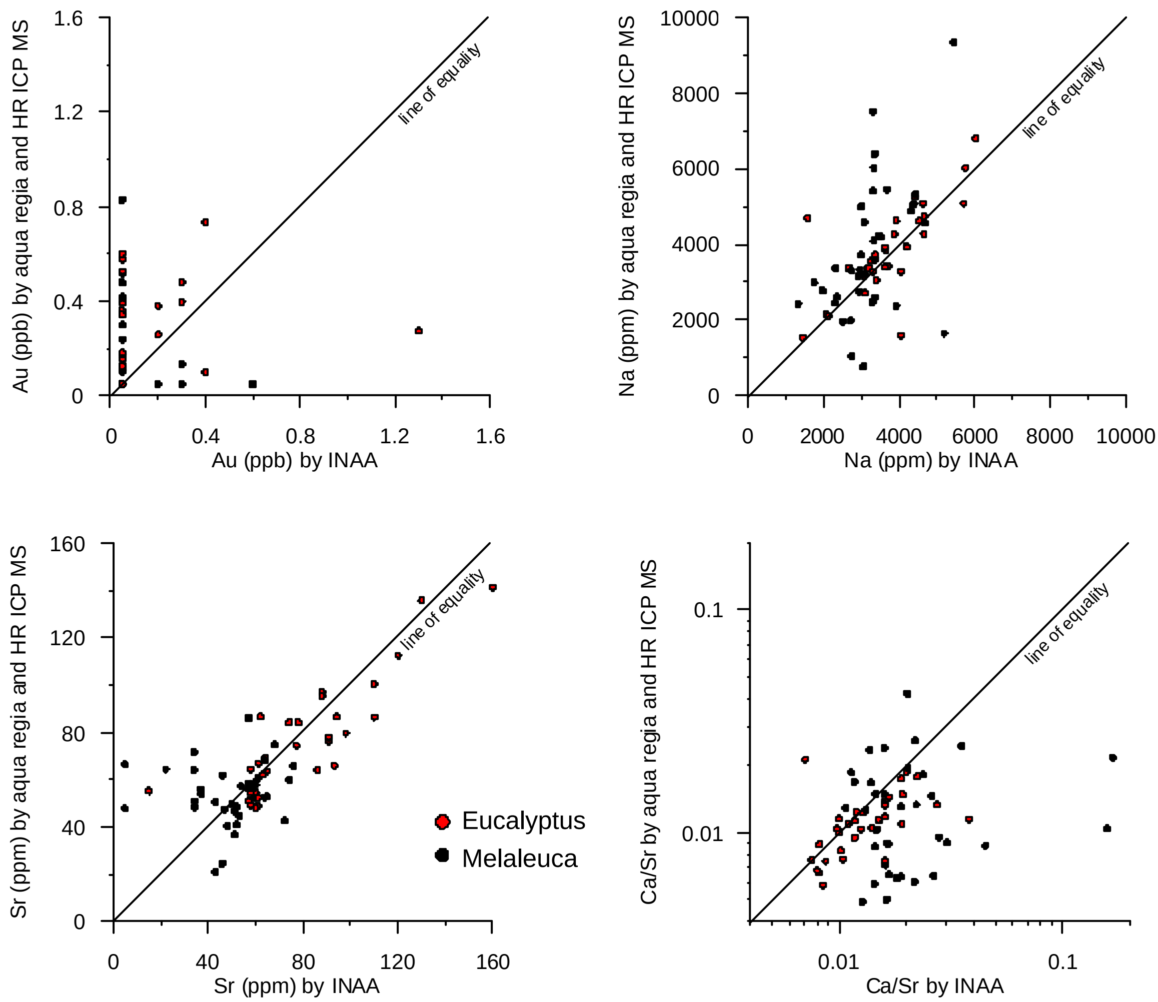


Figure 9: Comparison of analytical methods for selected elements.

5 IMPLICATIONS FOR EXPLORATION

Although vegetation can play a role in the adsorption and deposition of elements (including Au and pathfinders) in the regolith, concentrations are generally low in pathfinders and anomalies do not robustly reflect mineralization. Vegetation gives no advantage as a sampling medium over calcrete in this type of terrain. The Barns Gold Prospect was originally discovered using calcrete. The Au anomaly in calcrete is strong, centred over mineralization and coherent whilst that for *Melaleuca* and *Eucalyptus* is weak or absent. The problem with calcrete at Barns is that it is mostly buried beneath sand (0.5 to 15 m thick) and only patchily developed within the thicker sand sequences. However, vegetation does not provide a viable alternative sample medium to calcrete in such areas as the anomalies in the pathfinders are narrow, weak and not readily interpreted. Furthermore, for biogeochemistry to be a practical alternative, pathfinders associated with the target mineralization have to be known since Au-only targets may not be easily identified using biogeochemistry because of their low concentrations. Vegetation sampling preparation and analysis is more complicated (and expensive) than for mineral samples. Digging or auger drilling to calcrete in thicker dune sequences or sampling between the dunes remains, at this point in time, the only viable exploration choice. Thus, calcrete is a preferable sampling medium than *Eucalyptus* or *Melaleuca* leaves, twigs and fruiting bodies.

6 SUMMARY

Biogeochemical sampling was undertaken at the Barns Gold Prospect (Eyre Peninsula, South Australia). *Melaleuca* and *Eucalyptus* leaves, adjoining branches and fruiting bodies were sampled (i) at about 200 m intervals along a 5 km traverse bordering a dune and (ii) at about 25 m intervals across a dune profile. Both traverses crossed mineralization occurring nearby in weathered bedrock at about 35 m beneath leached saprolite.

Gold concentrations reached a maximum of 1.3 ppb but not near the known extent of mineralization. However, pathfinders (Ag, Bi and Pb) and other elements not known to be associated with the deposit (Co, Sb, W and Ta), were anomalous in plant samples from over mineralization.

The Barns Gold Prospect was originally discovered from Au in calcrete sampling and this appears to be the best method of first pass geochemical exploration in this terrain. Calcrete sampling provides broad, coherent anomalies and whilst more difficult to implement in dunes, where calcrete is located deep in the profile, vegetation may not provide a practical alternative.

7 ACKNOWLEDGEMENTS

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8 REFERENCES

Bureau of Meteorology, 2004. http://www.bom.gov.au/.

Butt, C.R.M., Gray, D.J., Robertson, I.D.M., Lintern, M.J., Anand, R.R., Britt, A.F., Bristow, A.P.J., Munday, T.J., Phang, C., Smith, R.E. and Wildman, J.E. 1997. Geochemical exploration in areas of transported overburden, Yilgarn Craton and environs, Western Australia: Final Report. CSIRO Exploration and Mining Restricted Report 333R. 163p. (Reissued as Open File Report 86, CRC LEME, Perth, 2001).

Daly, S.J., Fanning, C.M. and Fairclough, M.C., 1998. Tectonic evolution and exploration potential of the Gawler Craton. AGSO Journal of Australian Geology and Geophysics 17:145-168.

Drown, C.G., 2003. The Barns Gold Project – discovery in an emerging district. Quarterly Earth Resources Journal of Primary Industries and Resources South Australia. MESA Journal 28: 4-9.

Fanning, C.M., 1997. Geochronological synthesis of southern Australia. Part II: the Gawler Craton. Preliminary draft prepared for The Gawler Craton Excursion, 21–26 September, 1997 (unpublished).

Teale, G.S., Schwarz, M.P. and Fanning, C.M., 2002. Potential for Archaean VHMS-style mineralisation and other targets in southern Eyre Peninsula. *MESA Journal,* 18:17-21.

9 APPENDIX

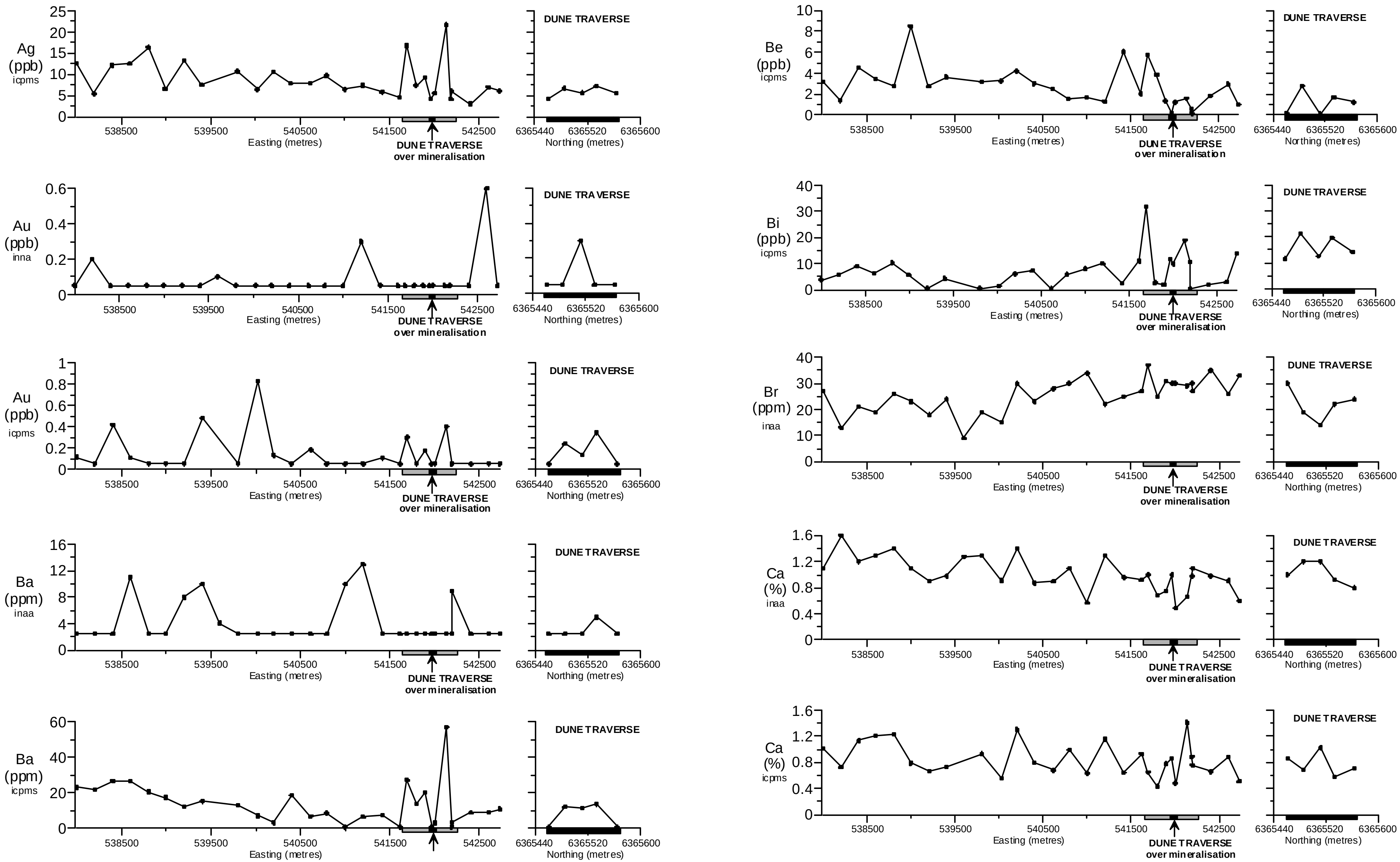

Figure A 1: Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

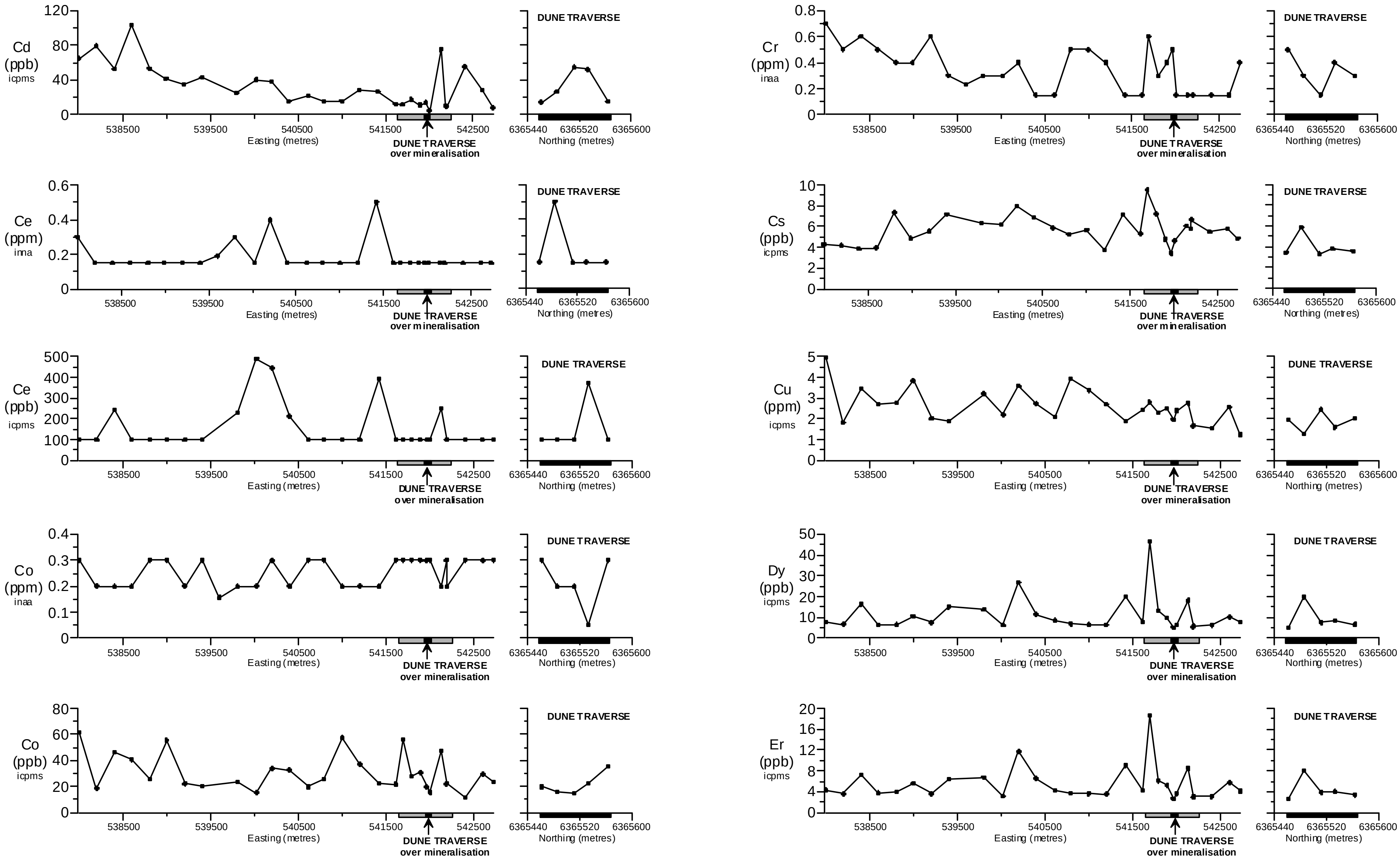

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

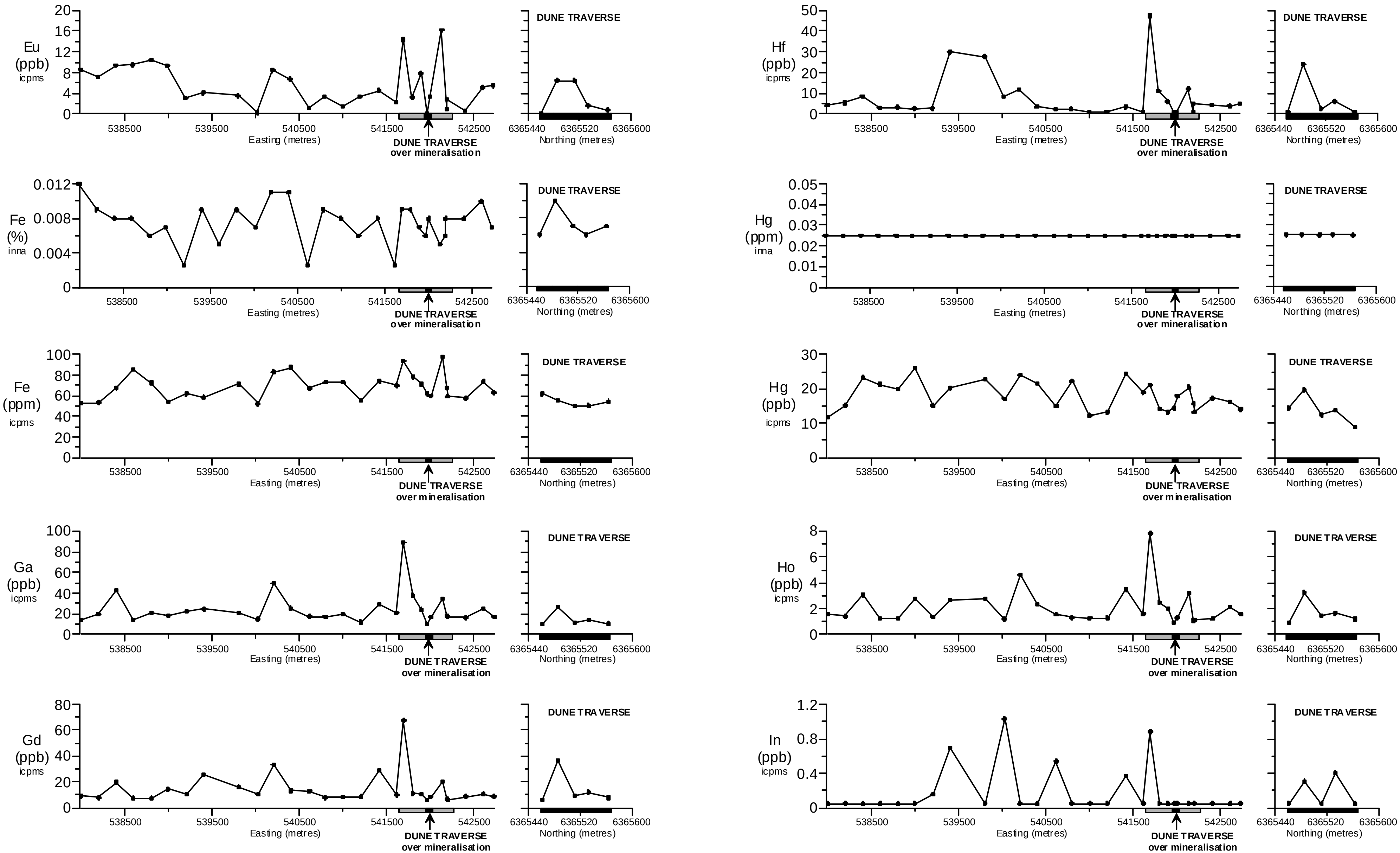

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

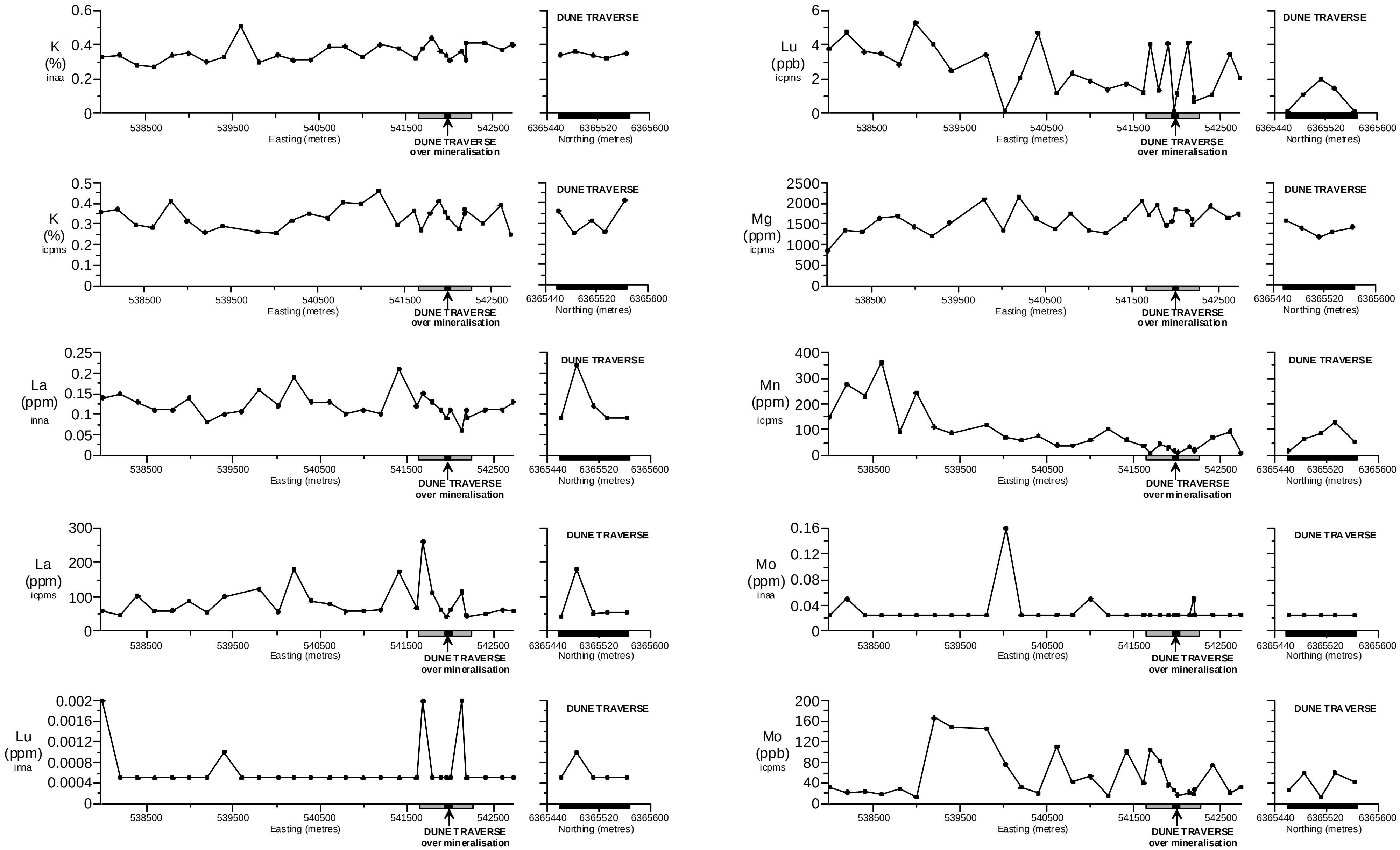

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

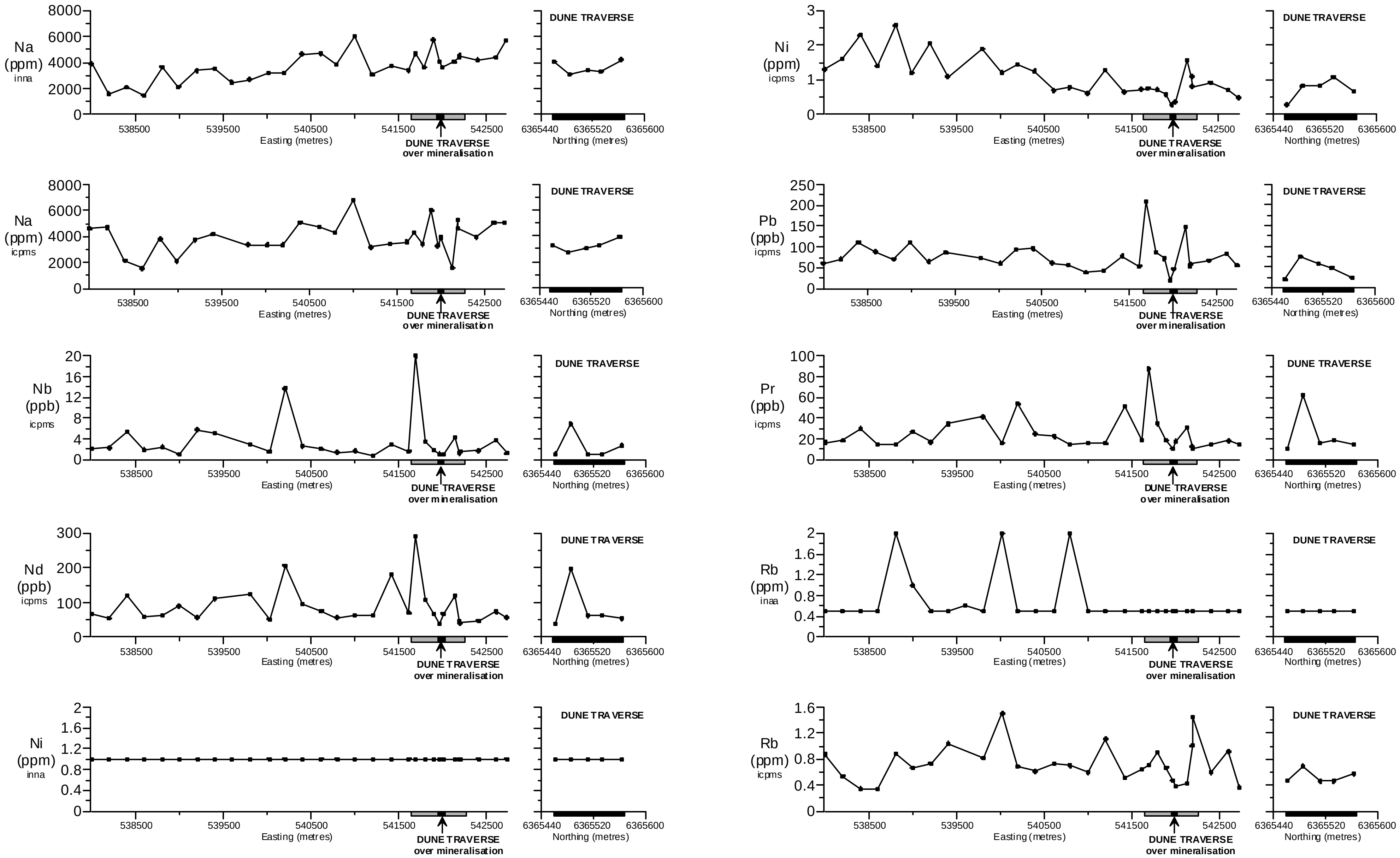

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

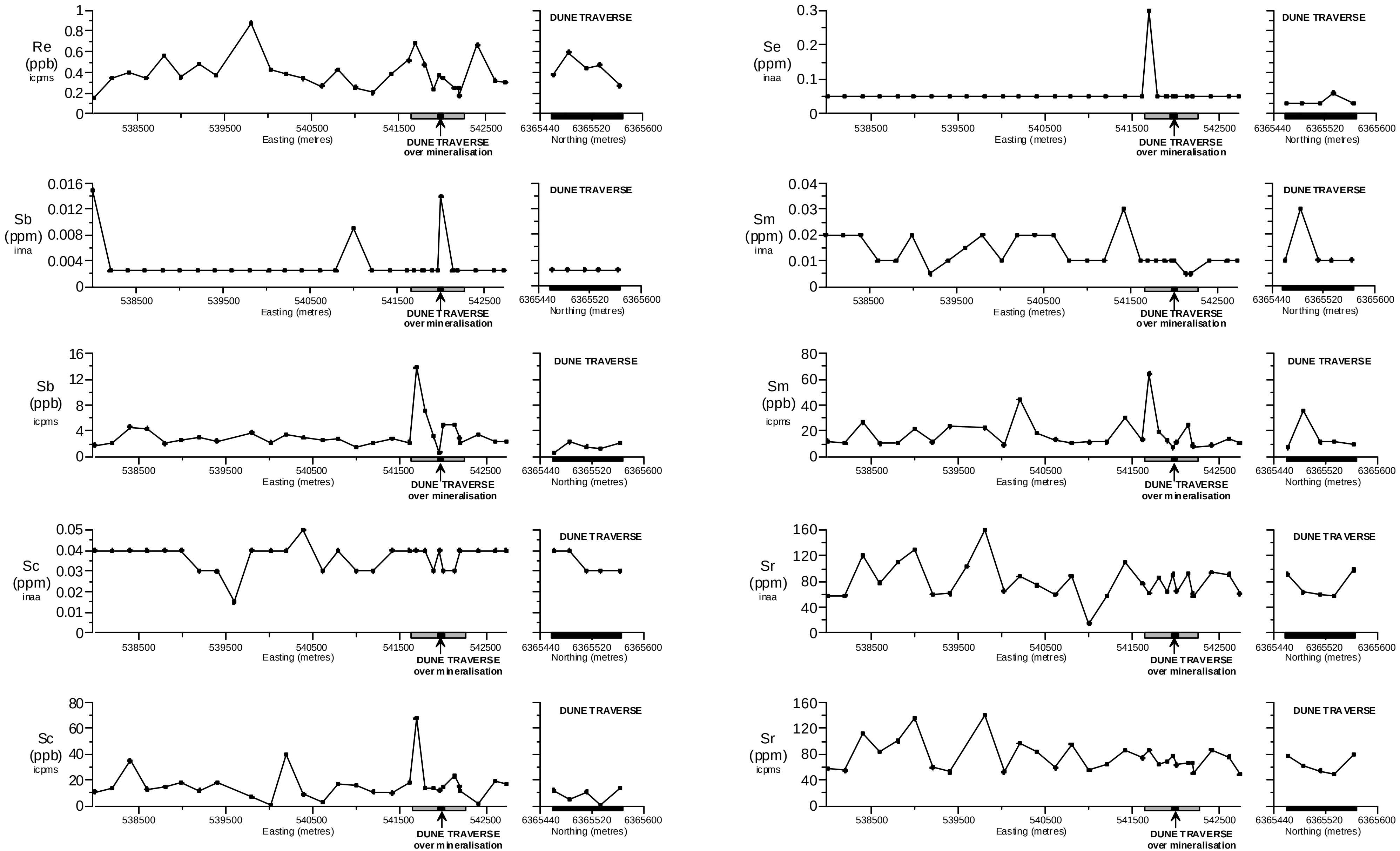

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

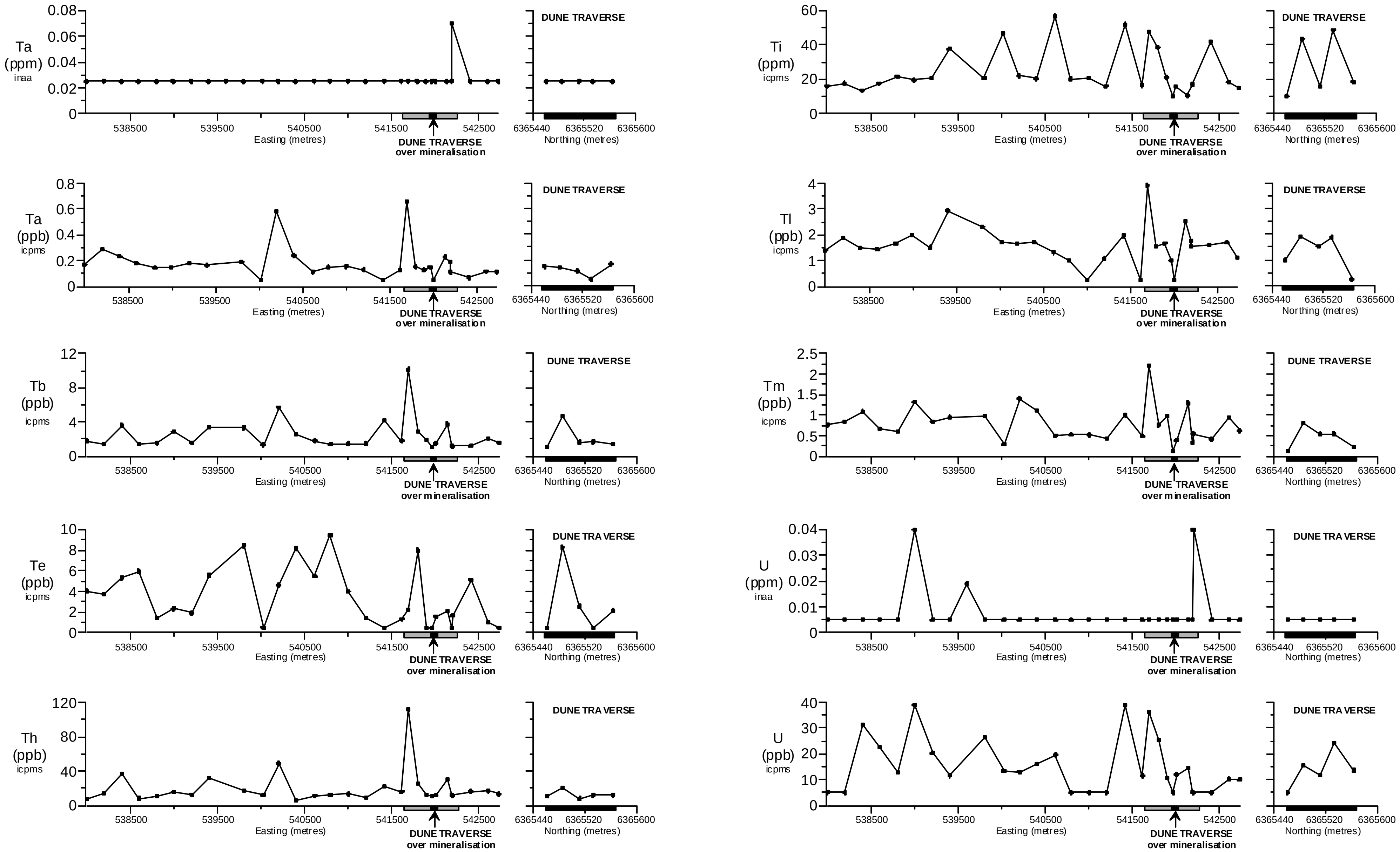

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

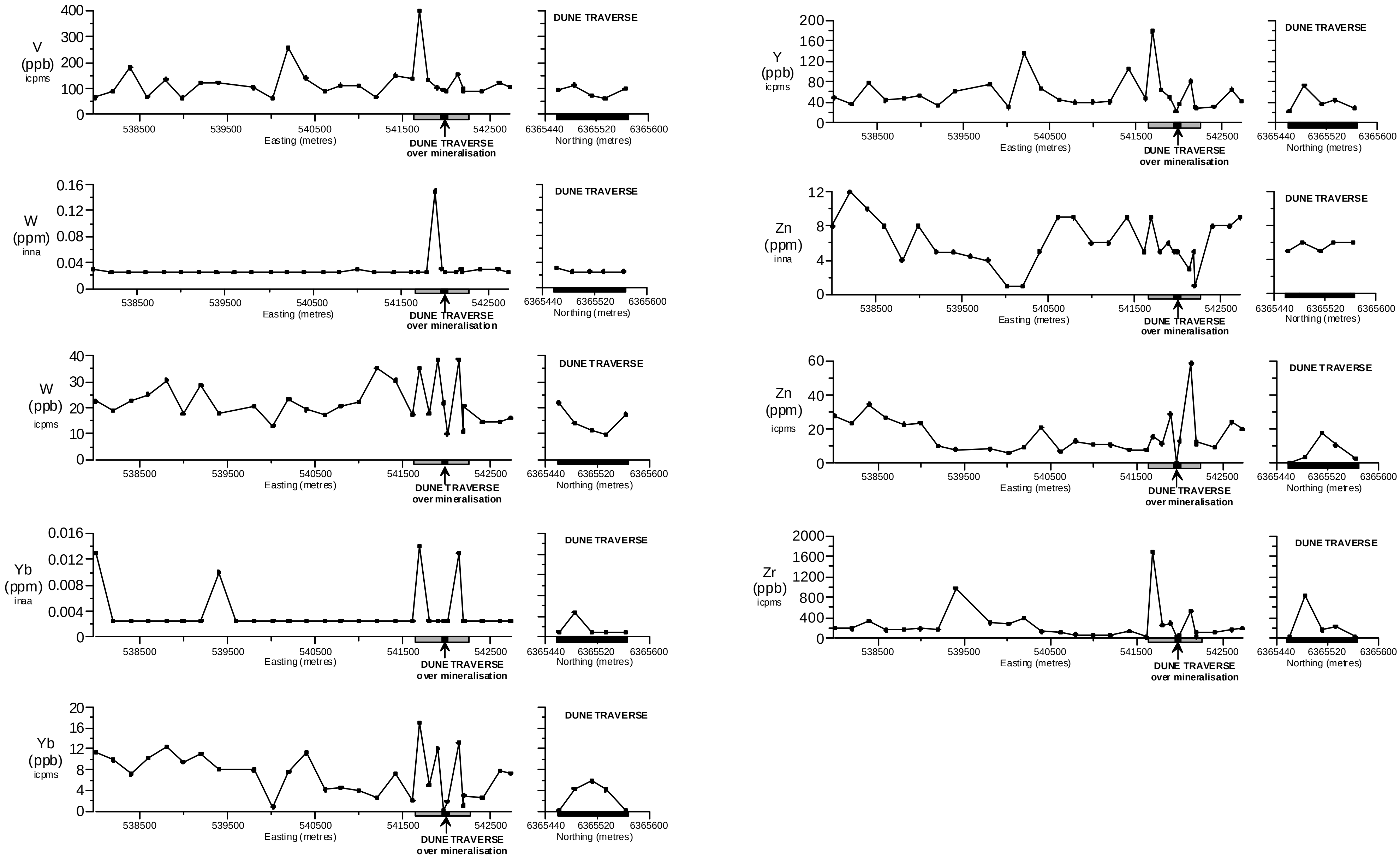

Figure A 1 (continued): Concentrations of selected elements in *Eucalyptus* at Barns Gold Prospect, Eyre Peninsula, South Australia.

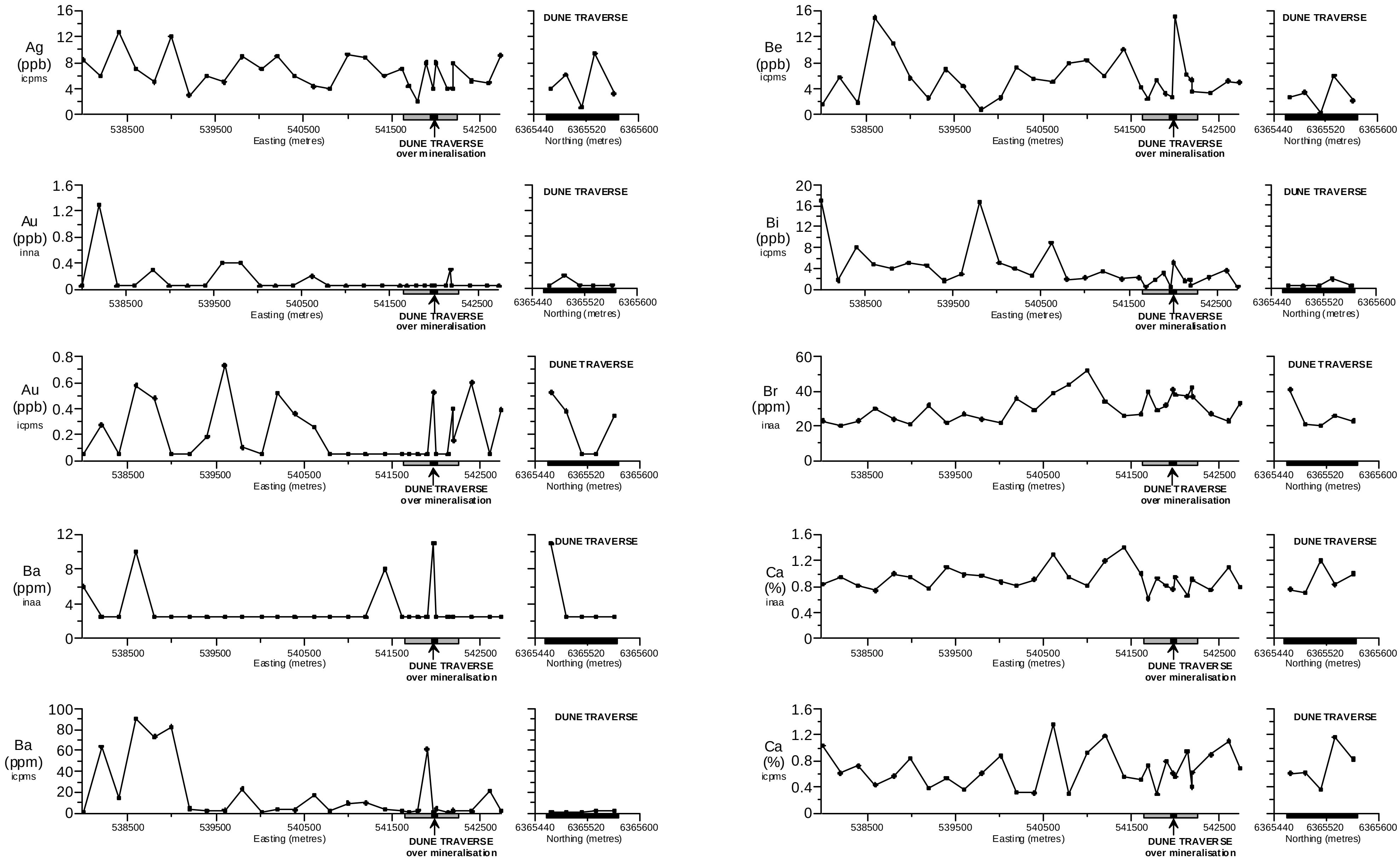

Figure A 2: Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia

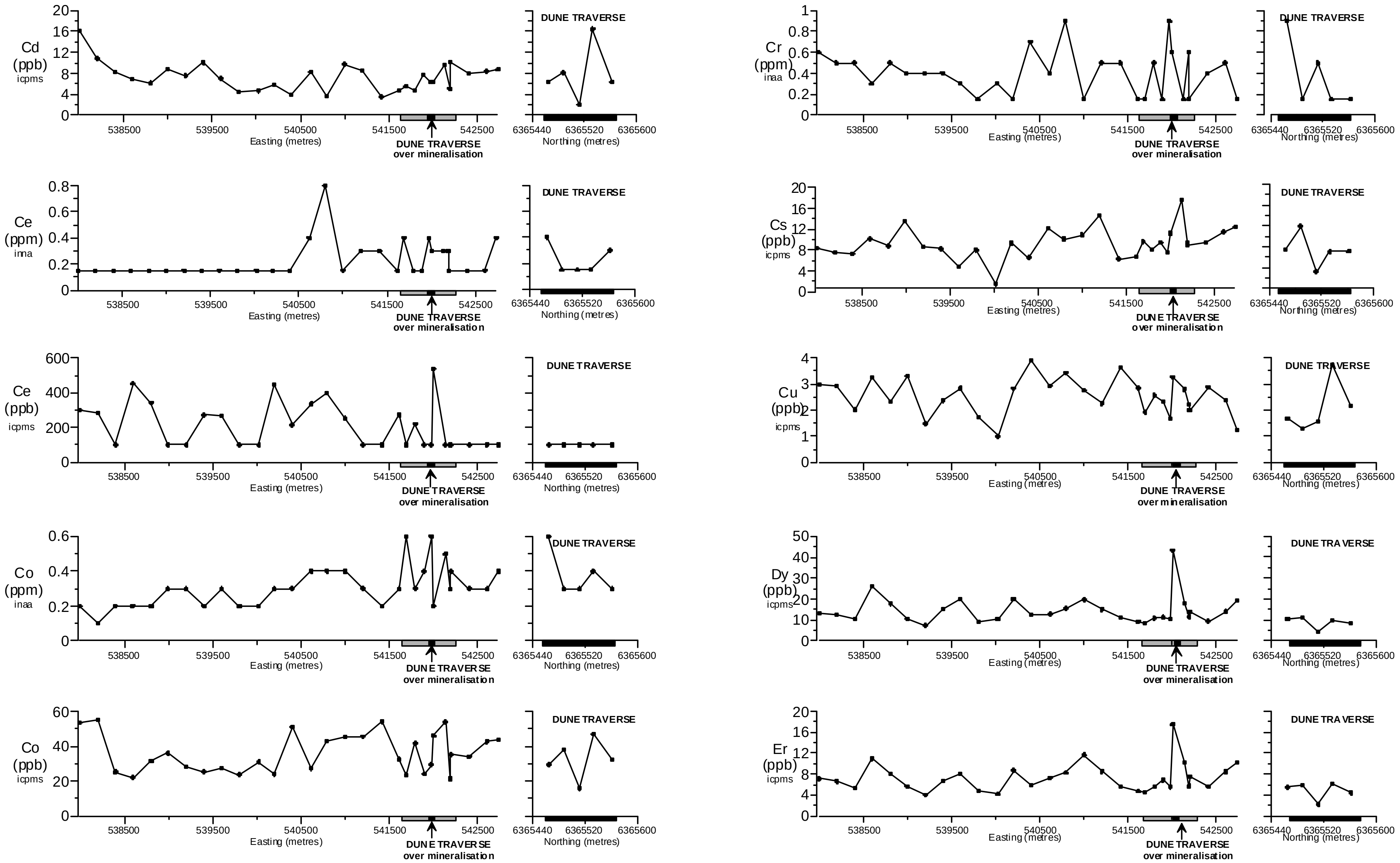

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

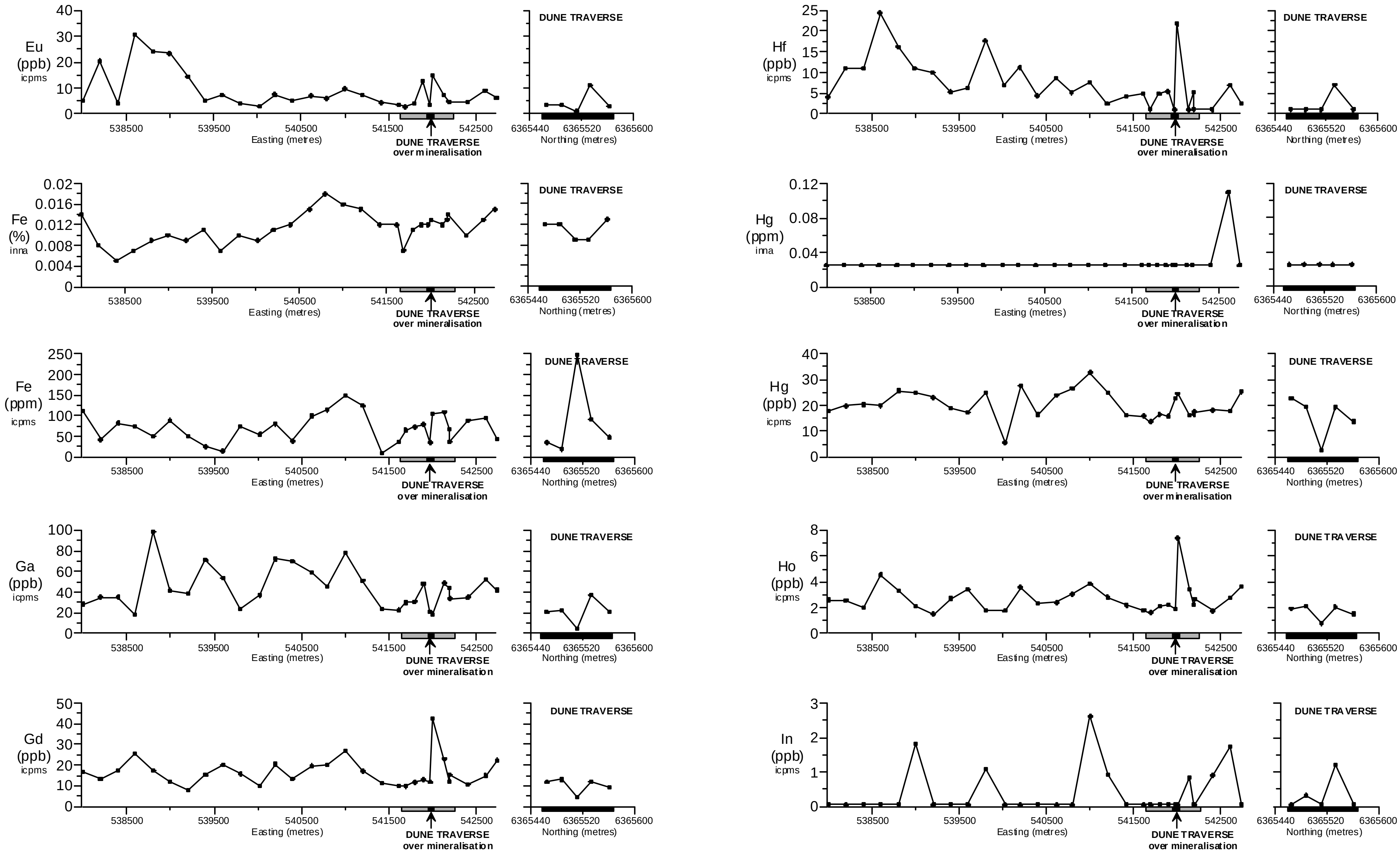

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

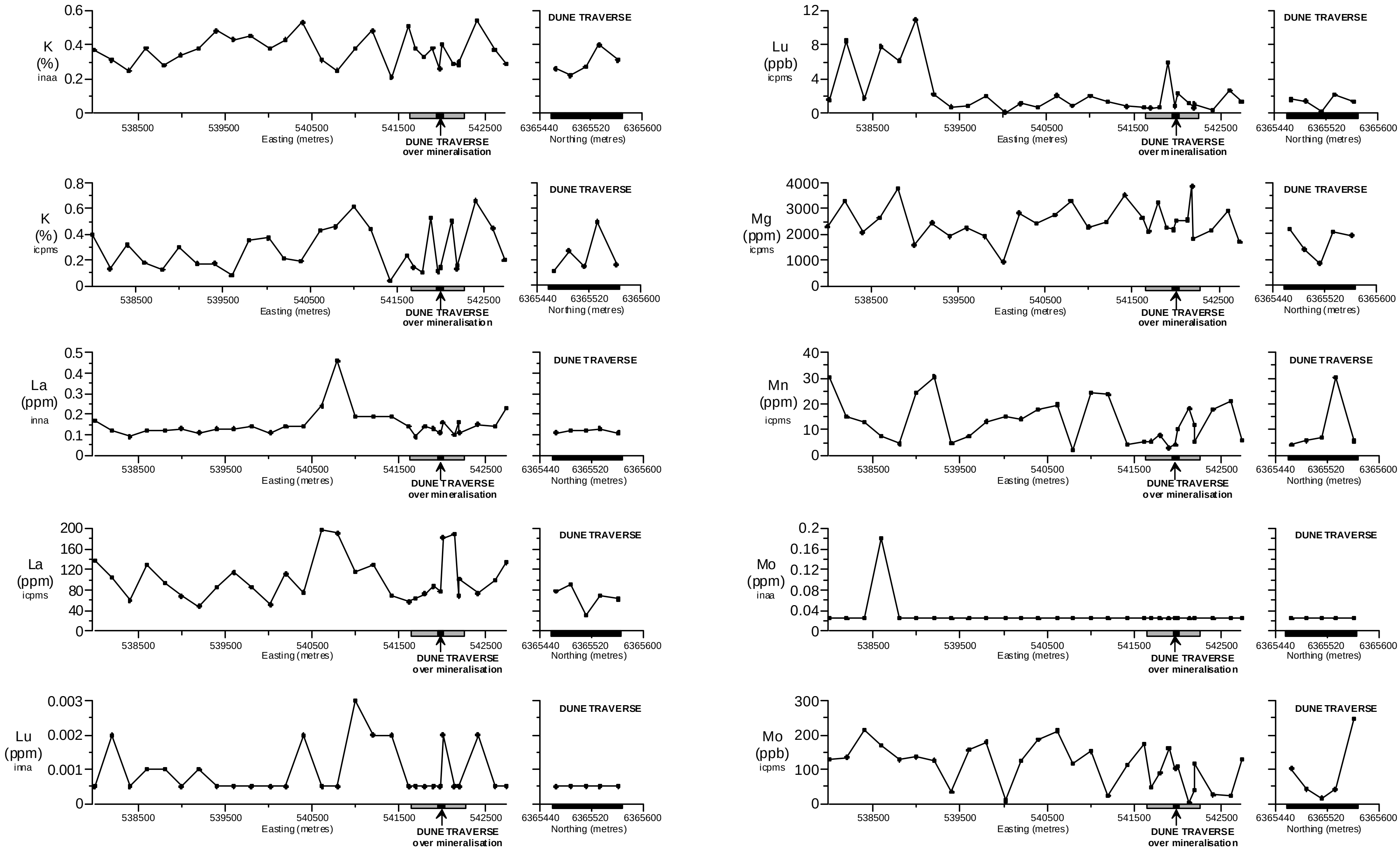

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

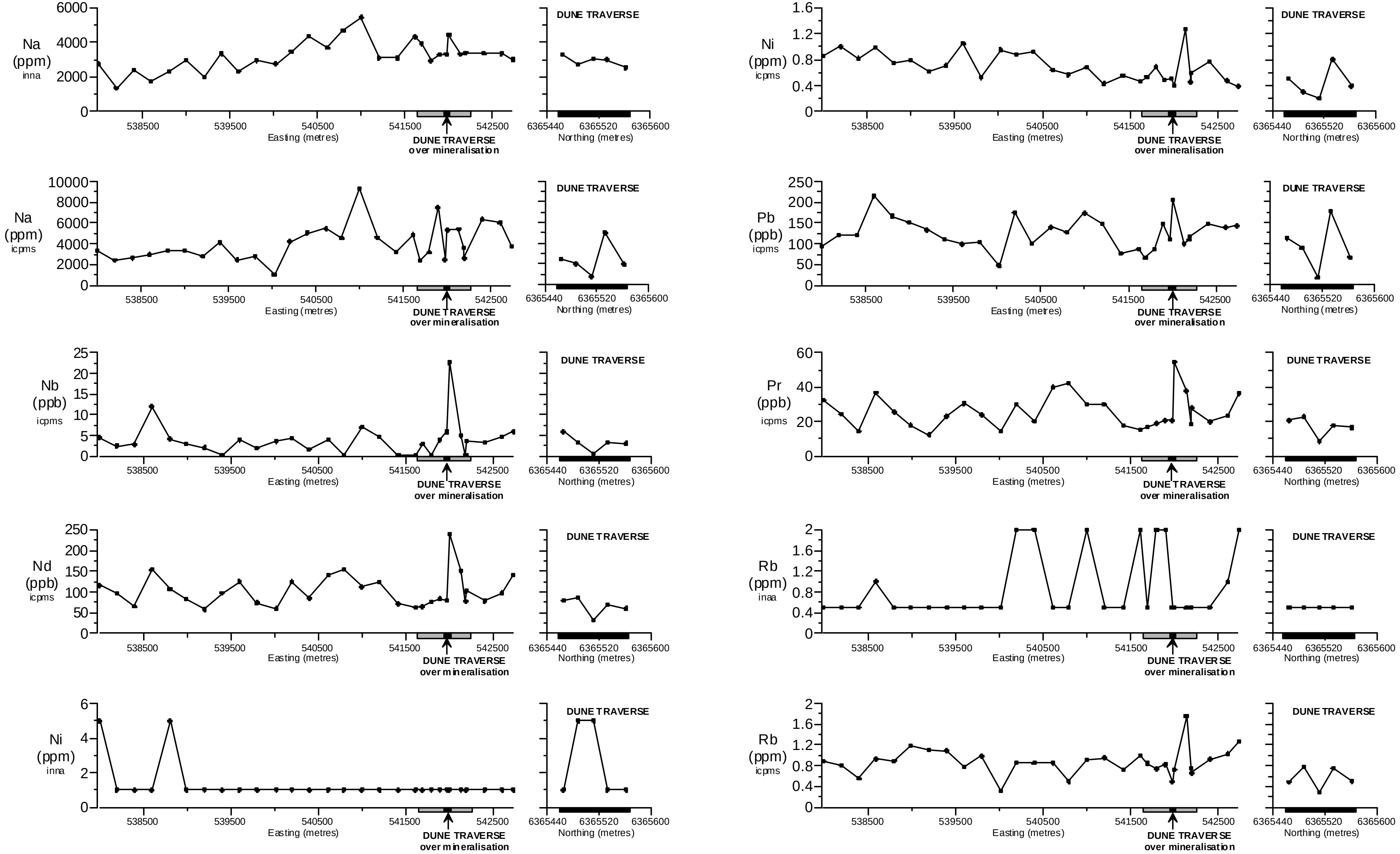

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

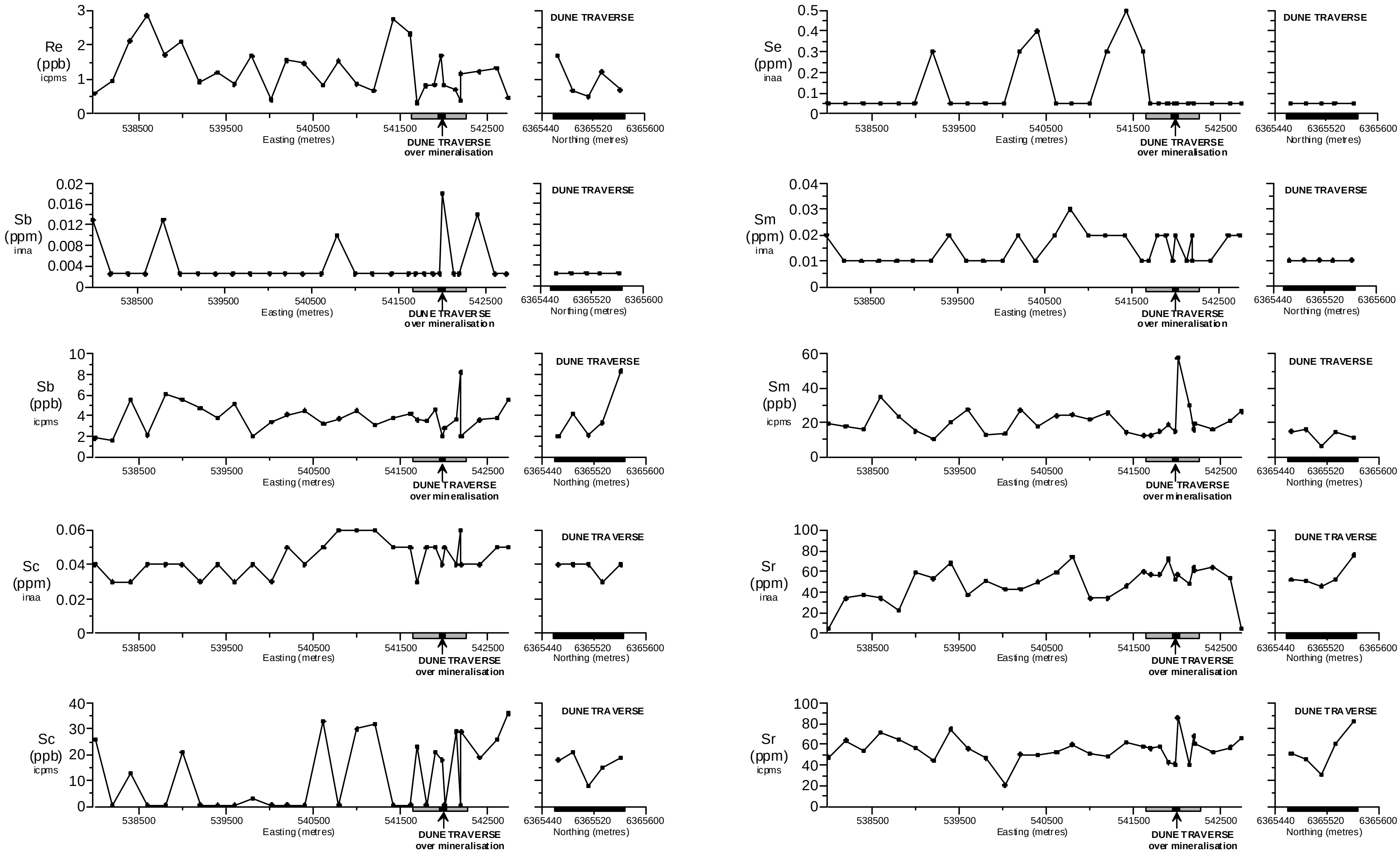

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

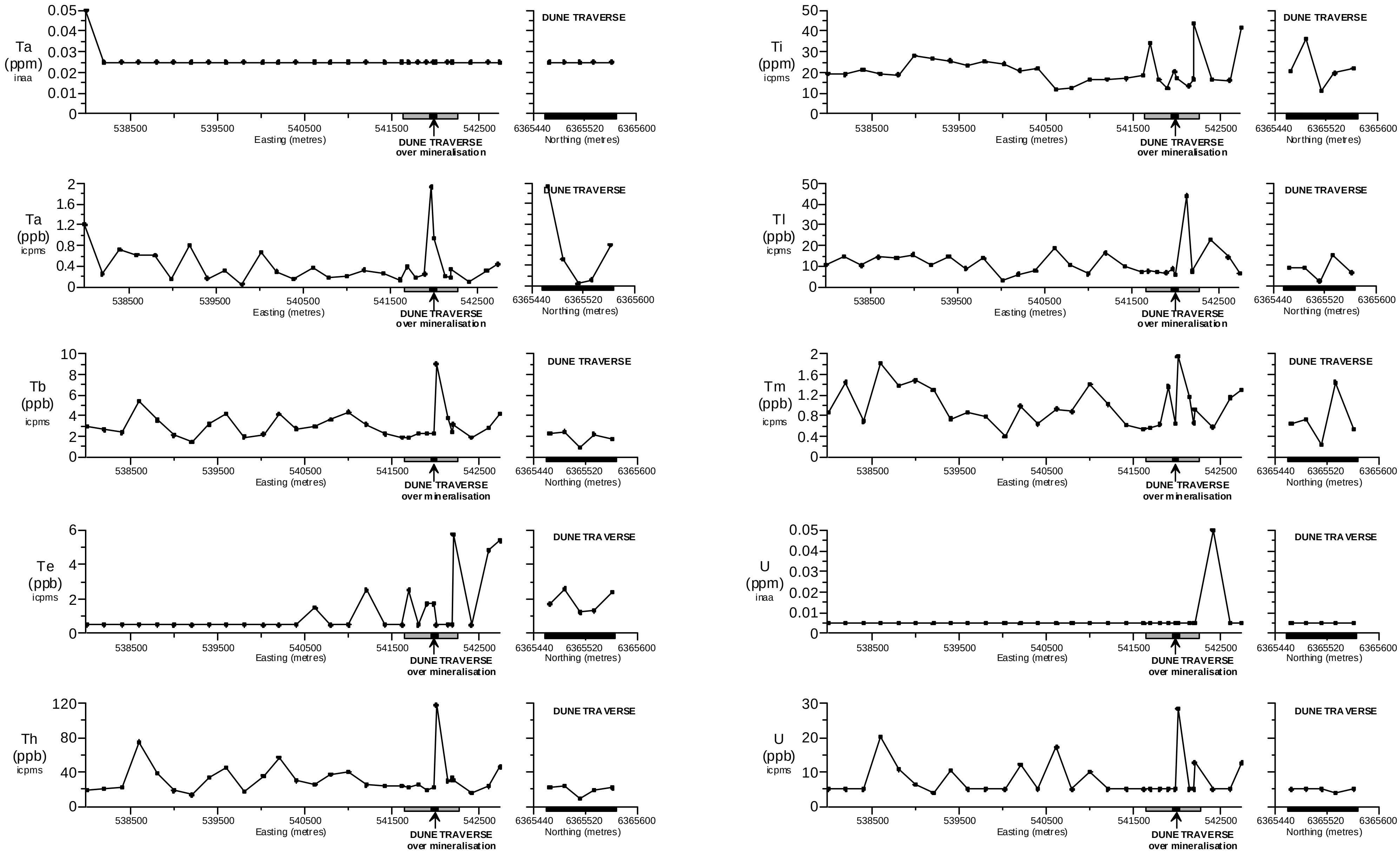

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

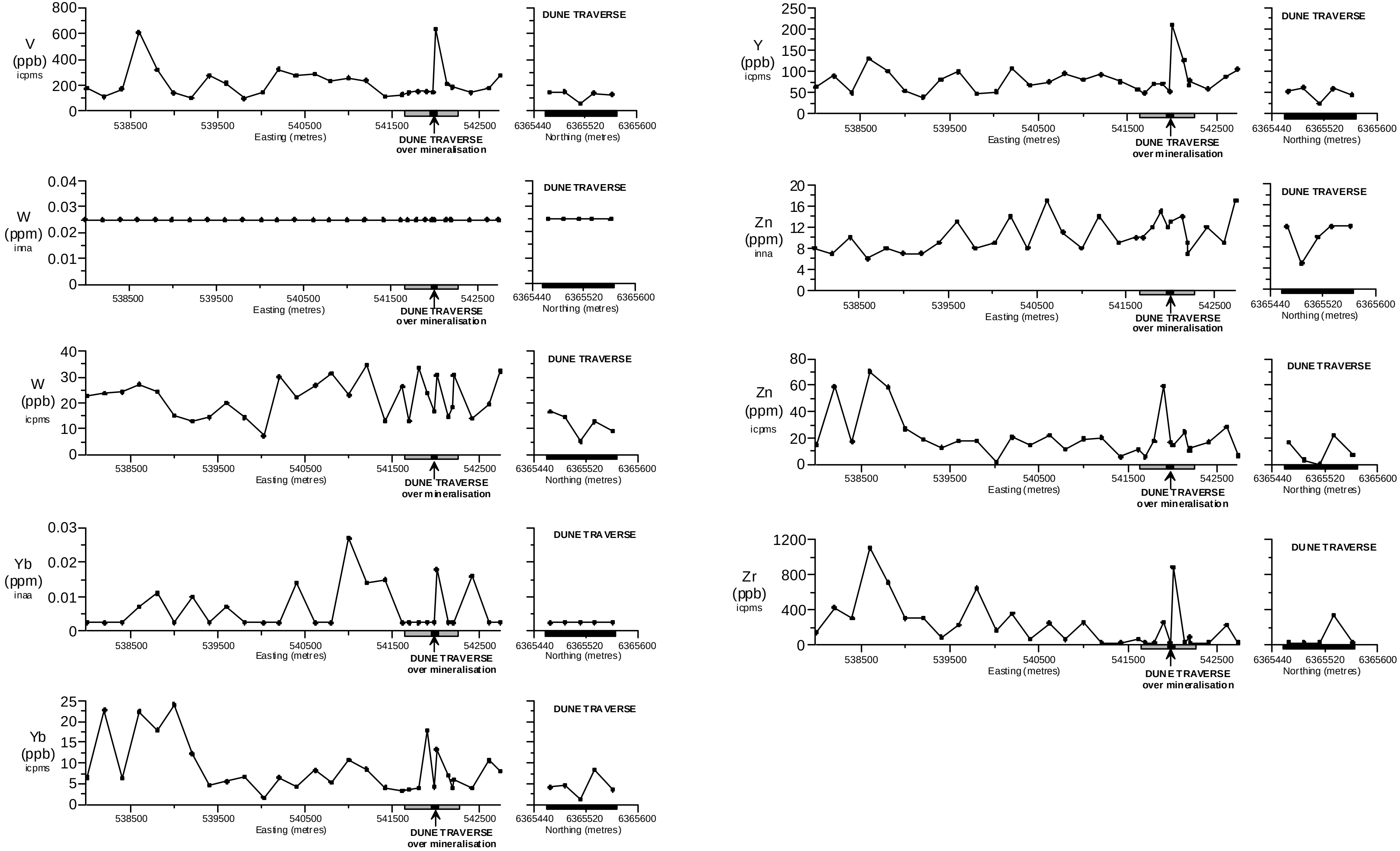

Figure A2 (continued): Concentrations of selected elements in *Melaleuca* at Barns Gold Prospect, Eyre Peninsula, South Australia.

Table A 1: Tabulated data for vegetation samples at Barns Gold Prospect, Eyre Peninsula, South Australia. Is denotes insufficient sample to perform this analysis. Data below detection limit reported as detection limit x0.5. Element suffixed n denotes analysis by INAA. Element suffixed I denotes analysis by HR ICP MS.

Field number	Sample type	EASTING	NORTHING	Ag-n	Ag-i	As-n	Au-n	Au-i	Ba-n	Ba-i	Be-i	Bi-i	Br-n	Ca-n	Ca-i	Cd-i
				ppm	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppm	%	%	ppb
B1G	*E. socialis*	537997	6366990	0.15	13	0.01	0.05	0.1	2.5	23	3.1	4	27	1.1	1.0	65
B2G	*E. socialis*	538197	6366910	0.15	5	0.01	0.2	0.05	2.5	22	1.4	6	13	1.6	0.7	79
B3G	*E. incrassata*	538400	6366841	0.15	12	0.01	0.05	0.4	2.5	27	4.6	9	21	1.2	1.1	53
B4G	*E. socialis*	538595	6366777	0.15	13	0.01	0.05	0.1	11	26	3.4	6	19	1.3	1.2	104
B5G	*E. socialis*	538804	6366689	0.15	16	0.01	0.05	0.1	2.5	20	2.8	10	26	1.4	1.2	53
B6G	*E. incrassata*	538993	6366637	0.15	7	0.01	0.05	0.1	2.5	17	8.5	6	23	1.1	0.8	42
B7G	*E. incrassata*	539201	6366554	0.15	13	0.01	0.05	0.1	8	12	2.7	0.5	18	0.9	0.7	35
B8G	*E. incrassata*	539401	6366491	0.15	8	0.01	0.05	0.5	10	15	3.6	4	24	0.98	0.7	43
B9G	*E. incrassata*	539598	6366408	0.15	is	0.11	0.1	is	4	is	is	is	9	1.28	is	is
B10G	*E. incrassata*	539801	6366338	0.15	11	0.01	0.05	0.1	2.5	13	3.2	1	19	1.3	0.9	25
B11G	*E. incrassata*	540022	6366299	0.15	6	0.01	0.05	0.8	2.5	7	3.2	1	15	0.91	0.6	40
B12G	*E. incrassata*	540200	6366150	0.15	11	0.01	0.05	0.1	2.5	3	4.2	6	30	1.4	1.3	38
B13G	*E. incrassata*	540398	6366010	0.15	8	0.01	0.05	0.1	2.5	19	3.0	7	23	0.87	0.8	16
B14G	*E. incrassata*	540615	6365933	0.15	8	0.01	0.05	0.2	2.5	7	2.5	1	28	0.9	0.7	21
B15G	*E. incrassata*	540794	6365832	0.15	10	0.01	0.05	0.1	2.5	8	1.5	6	30	1.1	1.0	16
B16G	*E. incrassata*	541000	6365784	0.15	6	0.01	0.05	0.1	10	0.5	1.7	8	34	0.57	0.6	15
B17G	*E. incrassata*	541201	6365753	0.15	7	0.01	0.3	0.1	13	6	1.3	10	22	1.3	1.2	29
B18G	*E. incrassata*	541417	6365622	0.15	6	0.01	0.05	0.1	2.5	7	6.1	2	25	0.96	0.6	26
B19G	*E. incrassata*	541614	6365541	0.15	5	0.01	0.05	0.1	2.5	0.5	2.0	11	27	0.92	0.9	12
B20G	*E. incrassata*	541796	6365498	0.15	7	0.01	0.05	0.05	2.5	14	3.8	3	25	0.69	0.4	17
B21G	*E. incrassata*	542003	6365452	0.15	6	0.01	0.05	0.1	2.5	3	1.2	10	30	0.49	0.5	4
B22G	*E. incrassata*	542191	6365390	0.15	4	0.01	0.05	0.1	2.5	1	0.6	11	30	0.98	0.9	11
B23G	*E. incrassata*	542406	6365329	0.15	3	0.01	0.05	0.1	2.5	9	1.8	2	35	0.98	0.7	56
B24G	*E. incrassata*	542606	6365175	0.15	7	0.01	0.6	0.1	2.5	9	2.9	3	26	0.91	0.9	28
B25G	*E. incrassata*	541964	6365461	0.15	4	0.01	0.05	0.1	2.5	1	0.1	12	30	1	0.9	14
B26G	*E. incrassata*	541966	6365564	0.15	6	0.01	0.05	0.1	2.5	1	1.2	14	24	0.8	0.7	15
B27G	*E. incrassata*	541970	6365485	0.15	7	0.01	0.05	0.2	2.5	12	2.8	21	19	1.2	0.7	26
B28G	*E. incrassata*	541967	6365512	0.15	6	0.01	0.3	0.1	2.5	11	0.1	13	14	1.2	1.0	55
B29G	*E. incrassata*	541974	6365533	0.15	7	0.01	0.05	0.3	5	13	1.7	20	22	0.93	0.6	52
B30G	*E. incrassata*	541895	6365480	0.15	9	0.01	0.05	0.2	2.5	20	1.3	2	31	0.75	0.8	11
B31G	*E. incrassata*	541692	6365495	0.15	17	0.01	0.05	0.3	2.5	27	5.8	32	37	1	0.7	11
B32G	*E. incrassata*	542196	6365389	0.15	6	0.01	0.05	0.1	9	3	0.1	0.5	27	1.1	0.8	9
B33G	*E. incrassata*	542135	6365406	0.15	22	0.01	0.05	0.4	2.5	57	1.6	19	29	0.66	1.4	75
B34G	*E. incrassata*	542728	6365141	0.15	6	0.01	0.05	0.1	2.5	11	1.0	14	33	0.6	0.5	8
B1E	*M. uncinata*	537997	6366990	0.15	8	0.02	0.05	0.1	6	1	1.6	17	23	0.84	1.0	16
B2E	*M. uncinata*	538197	6366910	0.15	6	0.01	1.3	0.3	2.5	64	5.7	2	20	0.95	0.6	11
B3E	*M. uncinata*	538400	6366841	0.15	13	0.01	0.05	0.1	2.5	14	1.9	8	23	0.82	0.7	8
B4E	*M. uncinata*	538595	6366777	0.15	7	0.01	0.05	0.6	10	91	15	5	30	0.74	0.4	7
B5E	*M. uncinata*	538804	6366689	0.15	5	0.01	0.3	0.5	2.5	73	11	4	24	1	0.6	6
B6E	*M. uncinata*	538993	6366637	0.15	12	0.01	0.05	0.05	2.5	83	5.6	5	21	0.94	0.8	9
B7E	*M. uncinata*	539201	6366554	0.15	3	0.01	0.05	0.05	2.5	4	2.5	5	32	0.77	0.4	8
B8E	*M. uncinata*	539401	6366491	0.15	6	0.01	0.05	0.2	2.5	2	6.9	2	22	1.1	0.5	10
B9E	*M. uncinata*	539598	6366408	0.15	5	0.01	0.4	0.7	2.5	3	4.4	3	27	0.98	0.4	7
B10E	*M. uncinata*	539801	6366338	0.15	9	0.01	0.4	0.1	2.5	23	0.8	17	24	0.97	0.6	4
B11E	*M. uncinata*	540022	6366299	0.15	7	0.01	0.05	0.1	2.5	1	2.6	5	22	0.87	0.9	5
B12E	*M. uncinata*	540199	6366143	0.15	9	0.01	0.05	0.5	2.5	4	7.3	4	36	0.82	0.3	6
B13E	*M. uncinata*	540398	6366010	0.15	6	0.01	0.05	0.4	2.5	3	5.5	3	29	0.91	0.3	4
B14E	*M. uncinata*	540615	6365933	0.15	4	0.01	0.2	0.3	2.5	17	5.0	9	39	1.3	1.4	8
B15E	*M. uncinata*	540794	6365832	0.15	4	0.01	0.05	0.1	2.5	2	7.9	2	44	0.94	0.3	4
B16E	*M. uncinata*	541000	6365784	0.15	9	0.01	0.05	0.05	2.5	10	8.4	2	52	0.81	0.9	10
B17E	*M. uncinata*	541201	6365753	0.15	9	0.01	0.05	0.05	2.5	10	5.9	3	34	1.2	1.2	8
B18E	*M. uncinata*	541417	6365622	0.15	6	0.01	0.05	0	8	3	10.0	2	26	1.4	0.6	3
B19E	*M. uncinata*	541614	6365541	0.15	7	0.01	0.05	0.1	2.5	2	4.2	2	27	1	0.5	5
B20E	*M. uncinata*	541796	6365498	0.15	2	0.01	0.05	0	2.5	2	5.3	2	29	0.93	0.3	5
B21E	*M. uncinata*	542003	6365452	0.15	8	0.01	0.05	0	2.5	4	15	5	38	0.95	0.6	6
B22E	*M. uncinata*	542191	6365390	0.15	4	0.01	0.3	0.4	2.5	3	5.4	2	42	0.92	0.4	5
B23E	*M. uncinata*	542406	6365329	0.15	5	0.01	0.05	0.6	2.5	2	3.3	2	27	0.75	0.9	8
B24E	*M. uncinata*	542606	6365175	0.15	5	0.01	0.05	0.05	2.5	21	5.1	4	23	1.1	1.1	8
B25E	*M. uncinata*	541974	6365465	0.15	4	0.01	0.05	0.5	11	1	2.7	0.5	41	0.76	0.6	6
B26E	*M. uncinata*	541969	6365562	0.15	3	0.01	0.05	0.3	2.5	2	2.1	0.5	23	1	0.8	6
B27E	*M. uncinata*	541972	6365488	0.15	6	0.01	0.2	0.4	2.5	1	3.4	0.5	21	0.71	0.6	8
B28E	*M. uncinata*	541968	6365512	0.15	1	0.01	0.05	0.05	2.5	1	0.3	0.5	20	1.2	0.4	2
B29E	*M. uncinata*	541974	6365533	0.15	9	0.01	0.05	0.05	2.5	2	6.0	2	26	0.83	1.2	16
B30E	*M. uncinata*	541895	6365480	0.15	8	0.01	0.05	0.05	2.5	61	3.2	3	32	0.82	0.8	8
B31E	*M. uncinata*	541692	6365495	0.15	4	0.01	0.05	0.05	2.5	1	2.4	0.5	40	0.61	0.7	6
B32E	*M. uncinata*	542196	6365389	0.15	8	0.01	0.05	0.2	2.5	2	3.5	1	37	0.9	0.6	10
B33E	*M. uncinata*	542135	6365406	0.15	4	0.01	0.05	0.05	2.5	1	6.1	2	37	0.66	0.9	10
B34E	*M. uncinata*	542737	6365133	0.15	9	0.01	0.05	0.4	2.5	2	5.0	0.5	33	0.79	0.7	9

Table A1 (continued): Tabulated data for vegetation samples at Barns Gold Prospect, Eyre Peninsula, South Australia. Is denotes insufficient sample to perform this analysis. Data below detection limit reported as detection limit x0.5. Element suffixed n denotes analysis by INAA. Element suffixed I denotes analysis by HR ICP MS.

Field number	Ce-n	Ce-i	Co-n	Co-i	Cr-n	Cr-i	Cs-n	Cs-i	Cu-i	Dy-i	Er-i	Eu-n	Eu-i	Fe-n	Fe-i	Ga-i	Gd-i	Ge-i	Hf-n
	ppm	ppb	ppm	ppb	ppm	ppb	ppm	ppb	ppm	ppb	ppb	ppm	ppb	%	ppm	ppb	ppb	ppb	ppm
B1G	0.3	100	0.3	62	0.7	250	0.025	4.3	5.0	7.9	4.4	0.025	8.6	0.012	53	14	9	50	0.025
B2G	0.15	100	0.2	19	0.5	250	0.025	4.2	1.8	6.7	3.6	0.025	7.2	0.009	53	20	8	50	0.025
B3G	0.15	244	0.2	47	0.6	250	0.025	3.9	3.5	16.3	7.3	0.025	9.4	0.008	67	43	20	50	0.025
B4G	0.15	100	0.2	41	0.5	250	0.025	3.9	2.7	6.4	3.8	0.025	9.5	0.008	86	14	8	50	0.025
B5G	0.15	100	0.3	26	0.4	250	0.025	7.3	2.8	6.6	3.9	0.025	10.4	0.006	72	21	8	50	0.025
B6G	0.15	100	0.3	56	0.4	250	0.025	4.9	3.8	10.6	5.6	0.025	9.3	0.007	54	18	14	50	0.025
B7G	0.15	100	0.2	22	0.6	250	0.025	5.6	2.0	7.5	3.6	0.025	3.0	0.003	62	22	11	50	0.025
B8G	0.15	100	0.3	20	0.3	250	0.025	7.2	1.9	15.0	6.4	0.025	4.1	0.009	59	24	26	50	0.025
B9G	0.19	is	0.2	is	0.2	is	0.025	is	is	is	is	0.025	is	0.005	is	is	is	is	0.025
B10G	0.3	231	0.2	24	0.3	250	0.025	6.4	3.2	13.7	6.7	0.025	3.5	0.009	71	21	16	50	0.025
B11G	0.15	489	0.2	15	0.3	250	0.025	6.2	2.2	6.2	3.1	0.025	0.2	0.007	52	15	11	50	0.025
B12G	0.4	445	0.3	34	0.4	250	0.025	8.0	3.6	26.8	11.8	0.025	8.5	0.011	83	49	33	50	0.025
B13G	0.15	212	0.2	33	0.15	250	0.070	6.9	2.7	11.5	6.5	0.025	6.7	0.011	87	26	13	50	0.025
B14G	0.15	100	0.3	20	0.15	250	0.025	5.9	2.1	8.6	4.3	0.025	1.2	0.003	67	17	13	50	0.025
B15G	0.15	100	0.3	26	0.5	250	0.025	5.2	3.9	6.8	3.6	0.025	3.4	0.009	73	17	8	50	0.025
B16G	0.15	100	0.2	58	0.5	250	0.025	5.7	3.4	6.6	3.6	0.025	1.4	0.008	73	20	8	50	0.025
B17G	0.15	100	0.2	37	0.4	250	0.025	3.7	2.7	6.5	3.5	0.025	3.3	0.006	55	12	9	50	0.025
B18G	0.5	391	0.2	23	0.15	250	0.025	7.1	1.9	20.0	9.0	0.025	4.6	0.008	74	29	29	50	0.025
B19G	0.15	100	0.3	22	0.15	250	0.025	5.3	2.5	8.1	4.3	0.025	2.3	0.003	70	21	10	50	0.025
B20G	0.15	100	0.3	28	0.3	250	0.025	7.2	2.3	13.2	6.1	0.025	3.2	0.009	78	38	11	50	0.025
B21G	0.15	100	0.3	15	0.15	250	0.025	4.6	2.4	6.5	3.6	0.025	3.3	0.008	60	17	9	50	0.025
B22G	0.15	100	0.3	22	0.15	250	0.025	5.8	1.7	5.4	2.9	0.025	0.9	0.006	68	18	7	50	0.025
B23G	0.15	100	0.3	12	0.15	250	0.025	5.5	1.6	6.2	3.1	0.025	0.7	0.008	58	16	9	50	0.025
B24G	0.15	100	0.3	30	0.15	250	0.060	5.8	2.6	10.2	5.8	0.025	5.1	0.010	74	25	11	50	0.025
B25G	0.15	100	0.3	20	0.5	250	0.025	3.4	2.0	5.1	2.6	0.025	0.1	0.006	62	10	6	50	0.025
B26G	0.15	100	0.3	36	0.3	250	0.025	3.6	2.0	6.7	3.3	0.025	0.7	0.007	54	11	8	50	0.025
B27G	0.5	100	0.2	16	0.3	250	0.025	5.9	1.3	19.8	8.1	0.025	6.5	0.010	55	26	37	50	0.025
B28G	0.15	100	0.2	15	0.15	250	0.025	3.3	2.5	7.5	3.9	0.025	6.5	0.007	50	11	9	50	0.025
B29G	0.15	374	0.05	22	0.4	250	0.025	3.8	1.6	8.5	4.1	0.025	1.6	0.006	51	14	12	50	0.025
B30G	0.15	100	0.3	31	0.4	538	0.025	4.8	2.5	10.0	5.2	0.025	7.9	0.007	71	24	10	50	0.025
B31G	0.15	100	0.3	56	0.6	250	0.025	9.5	2.8	46.6	18.7	0.025	14.4	0.009	93	89	68	50	0.025
B32G	0.15	100	0.2	22	0.15	250	0.025	6.7	1.7	6.0	3.2	0.025	2.8	0.008	59	17	6	50	0.025
B33G	0.15	251	0.2	48	0.15	250	0.025	6.1	2.7	18.3	8.5	0.025	16.2	0.005	98	35	20	50	0.025
B34G	0.15	100	0.3	23	0.4	250	0.025	4.9	1.2	7.9	4.1	0.025	5.5	0.007	63	17	9	50	0.025
B1E	0.15	301	0.2	53	0.6	250	0.070	8.4	3.0	13.2	7.1	0.025	5.2	0.014	111	28	17	50	0.025
B2E	0.15	282	0.1	55	0.5	250	0.025	7.5	2.9	12.5	6.6	0.025	20.5	0.008	42	35	13	50	0.025
B3E	0.15	100	0.2	25	0.5	250	0.025	7.3	2.0	10.7	5.3	0.025	4.2	0.005	82	35	17	50	0.025
B4E	0.15	453	0.2	22	0.3	250	0.025	10.2	3.2	26.3	10.9	0.025	30.7	0.007	74	19	26	50	0.025
B5E	0.15	342	0.2	32	0.5	250	0.025	8.8	2.3	17.8	8.0	0.025	24.1	0.009	50	98	17	50	0.025
B6E	0.15	100	0.3	36	0.4	250	0.025	13.6	3.3	10.6	5.6	0.025	23.4	0.010	89	42	12	50	0.025
B7E	0.15	100	0.3	28	0.4	250	0.025	8.6	1.5	7.4	4.1	0.025	14.3	0.009	49	38	8	50	0.025
B8E	0.15	272	0.2	25	0.4	250	0.025	8.3	2.4	15.1	6.7	0.025	5.1	0.011	25	71	15	50	0.025
B9E	0.15	269	0.3	27	0.3	250	0.025	4.8	2.8	20.0	8.1	0.025	7.1	0.007	14	54	20	50	0.025
B10E	0.15	100	0.2	24	0.15	250	0.025	8.0	1.7	9.0	4.8	0.025	4.1	0.010	74	24	16	50	0.025
B11E	0.15	100	0.2	31	0.3	250	0.025	1.5	1.0	10.5	4.2	0.025	2.8	0.009	55	37	10	50	0.025
B12E	0.15	447	0.3	24	0.15	250	0.025	9.3	2.8	19.9	8.7	0.025	7.4	0.011	80	72	20	50	0.025
B13E	0.15	215	0.3	51	0.7	250	0.025	6.5	3.9	12.6	5.9	0.025	5.0	0.012	39	70	13	50	0.025
B14E	0.4	336	0.4	27	0.4	250	0.025	12.2	2.9	12.8	7.3	0.025	6.9	0.015	100	59	20	50	0.025
B15E	0.8	397	0.4	43	0.9	250	0.025	10.1	3.4	15.6	8.3	0.025	5.9	0.018	114	45	20	50	0.025
B16E	0.15	254	0.4	45	0.15	250	0.120	10.9	2.8	19.7	11.7	0.025	9.6	0.016	149	78	27	50	0.025
B17E	0.3	100	0.3	46	0.5	586	0.025	14.6	2.3	15.0	8.5	0.025	7.1	0.015	124	51	17	50	0.025
B18E	0.3	100	0.2	54	0.5	250	0.025	6.3	3.6	11.2	5.6	0.025	4.3	0.012	10	24	11	50	0.025
B19E	0.15	273	0.3	33	0.15	250	0.025	6.8	2.8	9.1	4.7	0.025	3.5	0.012	37	23	10	50	0.025
B20E	0.15	220	0.3	42	0.5	250	0.025	8.0	2.6	10.9	5.5	0.025	4.1	0.011	73	31	12	50	0.025
B21E	0.3	538	0.2	46	0.6	250	0.025	11.2	3.3	43.3	17.6	0.025	14.9	0.013	104	18	43	50	0.025
B22E	0.3	100	0.3	21	0.6	250	0.025	9.4	2.2	11.5	5.7	0.025	4.7	0.013	68	44	12	50	0.025
B23E	0.15	100	0.3	34	0.4	250	0.025	9.4	2.9	9.4	5.6	0.025	4.5	0.010	89	35	11	50	0.025
B24E	0.15	100	0.3	43	0.5	250	0.025	11.5	2.4	14.2	8.5	0.025	9.0	0.013	94	52	15	50	0.025
B25E	0.4	100	0.6	29	0.9	250	0.025	7.5	1.7	10.3	5.5	0.025	3.4	0.012	36	21	12	50	0.025
B26E	0.3	100	0.3	32	0.15	250	0.025	7.1	2.1	8.3	4.4	0.025	2.9	0.013	48	21	9	50	0.025
B27E	0.15	100	0.3	38	0.15	250	0.025	12.0	1.3	11.1	5.8	0.025	3.4	0.012	18	23	13	50	0.025
B28E	0.15	100	0.3	16	0.5	250	0.025	3.2	1.6	4.2	2.2	0.025	0.9	0.009	248	5	4	50	0.025
B29E	0.15	100	0.4	47	0.15	250	0.025	7.1	3.7	9.9	6.1	0.025	11.0	0.009	91	37	12	50	0.025
B30E	0.15	100	0.4	24	0.15	250	0.025	9.4	2.3	11.4	6.8	0.025	12.5	0.012	79	48	13	50	0.025
B31E	0.4	100	0.6	24	0.15	250	0.025	9.6	1.9	8.4	4.6	0.025	2.6	0.007	65	30	10	50	0.025
B32E	0.15	100	0.4	35	0.15	250	0.025	9.0	2.0	13.9	7.5	0.025	4.5	0.014	38	34	15	50	0.025
B33E	0.3	100	0.5	54	0.15	250	0.025	17.5	2.8	17.9	10.2	0.025	7.3	0.012	109	49	23	50	0.025
B34E	0.4	100	0.4	44	0.15	250	0.025	12.4	1.2	19.3	10.2	0.025	6.1	0.015	43	42	22	50	0.025

Table A1 (continued): Tabulated data for vegetation samples at Barns Gold Prospect, Eyre Peninsula, South Australia. Is denotes insufficient sample to perform this analysis. Data below detection limit reported as detection limit x0.5. Element suffixed n denotes analysis by INAA. Element suffixed I denotes analysis by HR ICP MS.

Field number	Hf-i	Hg-n	Hg-i	Ho-i	In-i	Ir-n	K-n	K-i	La-n	La-i	Lu-n	Lu-i	Mg-i	Mn-i	Mo-n	Mo-i	Na-n	Na-i	Nb-i
	ppb	ppm	ppb	ppm	ppb	ppb	%	%	ppm	ppb	ppm	ppb	ppm	ppm	ppm	ppb	ppm	ppm	ppb
B1G	4	0.025	12	1.6	0.1	0.05	0.33	0.4	0.14	60	0.0020	3.8	846	149	0.025	32	3920	4620	2.1
B2G	5	0.025	15	1.4	0.1	0.05	0.34	0.4	0.15	47	0.0005	4.7	1340	275	0.05	22	1590	4700	2.3
B3G	9	0.025	23	3.1	0.1	0.05	0.28	0.3	0.13	103	0.0005	3.6	1310	230	0.025	24	2080	2160	5.4
B4G	3	0.025	21	1.3	0.1	0.05	0.27	0.3	0.11	60	0.0005	3.5	1640	361	0.025	17	1460	1530	1.9
B5G	3	0.025	20	1.3	0.1	0.05	0.34	0.4	0.11	60	0.0005	2.8	1690	92	0.025	29	3650	3840	2.5
B6G	3	0.025	26	2.8	0.1	0.05	0.35	0.3	0.14	88	0.0005	5.3	1430	244	0.025	13	2130	2090	1.0
B7G	3	0.025	15	1.4	0.2	0.05	0.3	0.3	0.08	55	0.0005	4.0	1210	110	0.025	166	3370	3730	5.8
B8G	30	0.025	20	2.6	0.7	0.05	0.33	0.3	0.1	101	0.0010	2.5	1530	88	0.025	149	3510	4190	5.1
B9G	is	0.025	is	is	is	0.05	0.51	is	0.11	is	0.0005	is	is	is	0.025	is	2472	is	is
B10G	28	0.025	23	2.7	0.1	0.05	0.3	0.3	0.16	122	0.0005	3.4	2100	119	0.025	146	2680	3370	2.9
B11G	8	0.025	17	1.2	1.0	0.05	0.34	0.3	0.12	57	0.0005	0.1	1340	68	0.16	76	3160	3370	1.5
B12G	12	0.025	24	4.7	0.1	0.05	0.31	0.3	0.19	180	0.0005	2.1	2150	58	0.025	31	3210	3370	13.7
B13G	3	0.025	22	2.3	0.1	0.05	0.31	0.4	0.13	89	0.0005	4.7	1630	77	0.025	20	4640	5080	2.6
B14G	2	0.025	15	1.5	0.5	0.05	0.39	0.3	0.13	79	0.0005	1.2	1370	38	0.025	111	4670	4730	2.1
B15G	2	0.025	22	1.3	0.1	0.05	0.39	0.4	0.1	57	0.0005	2.3	1760	38	0.025	43	3870	4280	1.4
B16G	1.0	0.025	12	1.3	0.1	0.05	0.33	0.4	0.11	59	0.0005	1.9	1340	59	0.05	53	6020	6790	1.7
B17G	1.0	0.025	13	1.3	0.1	0.05	0.4	0.5	0.1	61	0.0005	1.4	1280	102	0.025	16	3070	3170	0.7
B18G	3	0.025	24	3.5	0.4	0.05	0.38	0.3	0.21	173	0.0005	1.7	1620	60	0.025	101	3710	3420	2.9
B19G	1.0	0.025	19	1.6	0.1	0.05	0.32	0.4	0.12	67	0.0005	1.2	2060	38	0.025	40	3370	3590	1.6
B20G	11	0.025	14	2.5	0.1	0.05	0.44	0.4	0.13	112	0.0005	1.3	1950	44	0.025	83	3630	3400	3.4
B21G	1.0	0.025	18	1.3	0.1	0.05	0.31	0.3	0.11	63	0.0005	1.1	1860	11	0.025	16	3630	3920	1.0
B22G	1.0	0.025	16	1.0	0.1	0.05	0.31	0.4	0.11	46	0.0005	0.9	1620	22	0.05	18	4420	5260	1.2
B23G	4	0.025	17	1.2	0.1	0.05	0.41	0.3	0.11	52	0.0005	1.1	1940	69	0.025	74	4200	3940	1.8
B24G	4	0.025	16	2.1	0.1	0.05	0.37	0.4	0.11	61	0.0005	3.5	1650	93	0.025	22	4400	5070	3.7
B25G	1.0	0.025	14	0.9	0.1	0.05	0.34	0.4	0.09	43	0.0005	0.1	1570	18	0.025	26	4060	3280	1.1
B26G	1.0	0.025	9	1.2	0.1	0.05	0.35	0.4	0.09	54	0.0005	0.1	1410	52	0.025	43	4210	3930	2.8
B27G	24	0.025	20	3.2	0.3	0.05	0.36	0.3	0.22	180	0.0010	1.1	1380	65	0.025	58	3090	2720	6.9
B28G	3	0.025	12	1.5	0.1	0.05	0.34	0.3	0.12	52	0.0005	2.0	1170	85	0.025	12	3400	3040	1.1
B29G	6	0.025	14	1.6	0.4	0.05	0.32	0.3	0.09	54	0.0005	1.5	1290	128	0.025	60	3310	3280	1.0
B30G	6	0.025	13	2.0	0.1	0.05	0.36	0.4	0.11	63	0.0005	4.1	1460	29	0.025	36	5760	6030	1.8
B31G	47	0.025	21	7.8	0.9	0.05	0.38	0.3	0.15	262	0.0020	4.0	1720	10	0.025	105	4660	4280	20.0
B32G	5	0.025	13	1.1	0.1	0.05	0.41	0.4	0.09	44	0.0005	0.7	1490	18	0.025	27	4540	4620	1.5
B33G	12	0.025	20	3.2	0.1	0.05	0.36	0.3	0.06	114	0.0020	4.1	1810	33	0.025	22	4050	1590	4.3
B34G	5	0.025	14	1.6	0.1	0.05	0.4	0.2	0.13	58	0.0005	2.1	1740	9	0.025	32	5710	5080	1.2
B1E	4	0.025	18	2.6	0.1	0.05	0.37	0.4	0.17	137	0.0005	1.6	2300	30	0.025	130	2750	3300	4.5
B2E	11	0.025	20	2.6	0.1	0.05	0.31	0.1	0.12	105	0.0020	8.5	3300	15	0.025	135	1340	2430	2.5
B3E	11	0.025	20	2.0	0.1	0.05	0.25	0.3	0.09	60	0.0005	1.8	2080	13	0.025	216	2380	2610	2.8
B4E	24	0.025	20	4.6	0.1	0.05	0.38	0.2	0.12	130	0.0010	7.8	2650	7	0.18	170	1760	2980	12.0
B5E	16	0.025	26	3.3	0.1	0.05	0.28	0.1	0.12	94	0.0010	6.2	3770	5	0.025	128	2320	3370	4.1
B6E	11	0.025	25	2.1	1.8	0.05	0.34	0.3	0.13	68	0.0005	10.9	1590	24	0.025	136	2970	3330	3.0
B7E	10	0.025	23	1.5	0.1	0.05	0.38	0.2	0.11	48	0.0010	2.2	2450	31	0.025	126	1990	2780	2.1
B8E	5	0.025	19	2.7	0.1	0.05	0.48	0.2	0.13	85	0.0005	0.8	1920	5	0.025	34	3340	4100	0
B9E	6	0.025	17	3.4	0.1	0.05	0.43	0.1	0.13	114	0.0005	0.9	2240	7	0.025	157	2320	2450	3.9
B10E	18	0.025	25	1.8	1.1	0.05	0.45	0.4	0.14	86	0.0005	2.0	1920	13	0.025	180	2940	2760	2.0
B11E	7	0.025	5	1.8	0.1	0.05	0.38	0.4	0.11	52	0.0005	0.1	923	15	0.025	9	2760	1040	3.5
B12E	11	0.025	28	3.6	0.1	0.05	0.43	0.2	0.14	111	0.0005	1.1	2830	14	0.025	125	3470	4210	4.3
B13E	4	0.025	16	2.3	0.1	0.05	0.53	0.2	0.14	76	0.0020	0.7	2410	18	0.025	187	4350	5040	1.6
B14E	9	0.025	24	2.4	0.1	0.05	0.31	0.4	0.24	197	0.0005	2.1	2750	20	0.025	213	3680	5450	4.0
B15E	5	0.025	27	3.0	0.1	0.05	0.25	0.5	0.46	190	0.0005	0.9	3300	2	0.025	117	4680	4560	0
B16E	8	0.025	33	3.8	2.6	0.05	0.38	0.6	0.19	115	0.0030	2.1	2280	24	0.025	152	5450	9330	7.0
B17E	2	0.025	25	2.8	0.9	0.05	0.48	0.4	0.19	129	0.0020	1.4	2480	24	0.025	23	3090	4590	4.8
B18E	4	0.025	16	2.2	0.1	0.05	0.21	0.0	0.19	69	0.0020	0.8	3530	4	0.025	113	3090	3210	0
B19E	5	0.025	16	1.8	0.1	0.05	0.51	0.2	0.14	57	0.0005	0.7	2640	5	0.025	175	4320	4880	0
B20E	5	0.025	16	2.1	0.1	0.05	0.33	0.1	0.14	73	0.0005	0.7	3230	8	0.025	89	2930	3170	0
B21E	22	0.025	25	7.4	0.1	0.05	0.4	0.1	0.16	182	0.0020	2.3	2520	10	0.025	108	4430	5320	22.6
B22E	5	0.025	16	2.2	0.1	0.05	0.28	0.1	0.16	68	0.0005	0.6	3870	12	0.025	40	3360	3590	0
B23E	1.00	0.025	18	1.8	0.9	0.05	0.54	0.7	0.15	73	0.0020	0.4	2150	18	0.025	26	3360	6380	3.4
B24E	7	0.11	18	2.8	1.7	0.05	0.37	0.4	0.14	99	0.0005	2.6	2920	21	0.025	24	3340	6020	4.6
B25E	1	0.025	23	1.9	0.1	0.05	0.26	0.1	0.11	78	0.0005	0.8	2180	4	0.025	102	3300	2470	5.9
B26E	1	0.025	14	1.5	0.1	0.05	0.31	0.2	0.11	62	0.0005	0.7	1930	6	0.025	247	2520	1950	3.1
B27E	1	0.025	19	2.1	0.3	0.05	0.22	0.3	0.12	91	0.0005	0.7	1380	6	0.025	42	2730	1990	3.3
B28E	1	0.025	3	0.8	0.1	0.05	0.27	0.1	0.12	32	0.0005	0.1	842	7	0.025	17	3060	770	0.5
B29E	7	0.025	19	2.1	1.2	0.05	0.4	0.5	0.13	69	0.0005	1.1	2060	30	0.025	41	3000	5000	3.3
B30E	5	0.025	16	2.2	0.1	0.05	0.38	0.5	0.13	87	0.0005	5.9	2270	3	0.025	162	3310	7500	3.9
B31E	1.0	0.025	14	1.6	0.1	0.05	0.38	0.1	0.09	63	0.0005	0.6	2110	5	0.025	48	3920	2370	2.9
B32E	1	0.025	17	2.7	0.1	0.05	0.3	0.2	0.11	102	0.0005	1.1	1820	5	0.025	118	3380	2600	3.7
B33E	1.0	0.025	16	3.4	0.8	0.05	0.29	0.5	0.1	189	0.0005	1.2	2560	18	0.025	2	3310	5410	4.9
B34E	3	0.025	25	3.7	0.1	0.05	0.29	0.2	0.23	134	0.0005	1.4	1710	6	0.025	129	3000	3720	5.9

Table A1 (continued): Tabulated data for vegetation samples at Barns Gold Prospect, Eyre Peninsula, South Australia. Is denotes insufficient sample to perform this analysis. Data below detection limit reported as detection limit x0.5. Element suffixed n denotes analysis by INAA. Element suffixed I denotes analysis by HR ICP MS.

Field number	Nd-n	Nd-i	Ni-n	Ni-i	Pb-i	Pd-i	Pr-i	Pt-i	Rb-n	Rb-i	Re-i	Ru-i	Sb-n	Sb-i	Sc-n	Sc-i	Se-n	Sm-n	Sm-i
	ppm	ppb	ppm	ppm	ppb	ppb	ppb	ppb	ppm	ppm	ppb	ppb	ppm	ppb	ppm	ppb	ppm	ppm	ppb
B1G	0.25	66	1	1.3	60	0.1	17	0.1	0.5	0.87	0.2	0.3	0.0150	1.8	0.04	11	0.05	0.02	12
B2G	0.25	54	1	1.6	71	0.1	18	0.1	0.5	0.54	0.3	0.3	0.0025	2.1	0.04	14	0.05	0.02	11
B3G	0.25	121	1	2.3	111	0.1	30	0.1	0.5	0.35	0.4	0.3	0.0025	4.6	0.04	35	0.05	0.02	26
B4G	0.25	60	1	1.4	88	0.1	15	0.1	0.5	0.34	0.3	0.3	0.0025	4.4	0.04	13	0.05	0.01	10
B5G	0.25	62	1	2.6	70	0.1	15	0.1	2	0.89	0.6	0.3	0.0025	2.0	0.04	15	0.05	0.01	10
B6G	0.25	90	1	1.2	111	0.1	27	0.1	1	0.66	0.4	0.3	0.0025	2.6	0.04	18	0.05	0.02	22
B7G	0.25	56	1	2.1	65	0.1	17	0.1	0.5	0.74	0.5	0.3	0.0025	3.1	0.03	12	0.05	0.005	11
B8G	0.25	111	1	1.1	86	0.1	34	0.1	0.5	1.04	0.4	0.3	0.0025	2.4	0.03	18	0.05	0.01	23
B9G	0.25	is	1	is	is	is	is	is	0.6	is	is	is	0.0025	is	0.02	is	0.05	0.015	is
B10G	0.25	125	1	1.9	74	0.1	41	0.1	0.5	0.81	0.9	0.3	0.0025	3.7	0.04	7	0.05	0.02	22
B11G	0.25	51	1	1.2	61	0.1	16	0.1	2	1.51	0.4	0.3	0.0025	2.2	0.04	1	0.05	0.01	9
B12G	0.25	207	1	1.4	93	0.1	54	0.1	0.5	0.69	0.4	0.3	0.0025	3.4	0.04	40	0.05	0.02	44
B13G	0.25	95	1	1.3	95	0.1	25	0.1	0.5	0.61	0.3	0.3	0.0025	2.9	0.05	9	0.05	0.02	18
B14G	0.25	76	1	0.7	61	0.1	22	0.1	0.5	0.73	0.3	0.3	0.0025	2.5	0.03	3	0.05	0.02	13
B15G	0.25	56	1	0.8	56	0.1	14	0.1	2	0.70	0.4	0.3	0.0025	2.8	0.04	17	0.05	0.01	11
B16G	0.25	63	1	0.6	39	0.1	16	0.1	0.5	0.59	0.3	0.3	0.0090	1.4	0.03	16	0.05	0.01	11
B17G	0.25	62	1	1.3	43	0.1	16	0.1	0.5	1.11	0.2	0.3	0.0025	2.1	0.03	11	0.05	0.01	11
B18G	0.25	181	1	0.6	78	0.1	51	0.1	0.5	0.52	0.4	0.3	0.0025	2.8	0.04	10	0.05	0.03	30
B19G	0.25	70	1	0.7	53	0.1	18	0.1	0.5	0.65	0.5	0.3	0.0025	2.2	0.04	18	0.05	0.01	13
B20G	0.25	107	1	0.7	87	0.1	35	0.1	0.5	0.91	0.5	0.3	0.0025	7.2	0.04	14	0.05	0.01	19
B21G	0.25	67	1	0.4	47	0.1	18	0.1	0.5	0.39	0.3	0.3	0.0140	4.9	0.03	15	0.05	0.01	11
B22G	0.25	47	1	1.1	53	0.1	12	0.1	0.5	1.01	0.2	0.3	0.0025	2.9	0.04	15	0.05	0.005	9
B23G	0.25	47	1	0.9	67	0.1	15	0.1	0.5	0.59	0.7	0.3	0.0025	3.4	0.04	2	0.05	0.01	9
B24G	0.25	73	1	0.7	84	0.1	18	0.1	0.5	0.92	0.3	0.3	0.0025	2.3	0.04	19	0.05	0.01	14
B25G	0.25	39	1	0.3	20	0.1	11	0.1	0.5	0.47	0.4	0.3	0.0025	0.7	0.04	12	0.05	0.01	7
B26G	0.25	53	1	0.7	24	0.1	14	0.1	0.5	0.57	0.3	0.3	0.0025	2.1	0.03	14	0.05	0.01	10
B27G	0.25	197	1	0.8	75	0.1	62	0.1	0.5	0.70	0.6	0.3	0.0025	2.3	0.04	5	0.05	0.03	36
B28G	0.25	62	1	0.8	59	0.1	16	0.1	0.5	0.46	0.4	0.3	0.0025	1.5	0.03	11	0.05	0.01	11
B29G	0.25	63	1	1.1	48	0.1	19	0.1	0.5	0.46	0.5	0.3	0.0025	1.2	0.03	1	0.1	0.01	12
B30G	0.25	68	1	0.6	72	0.1	18	0.1	0.5	0.67	0.2	0.3	0.0025	3.1	0.03	14	0.05	0.01	12
B31G	0.25	293	1	0.8	209	0.1	88	0.1	0.5	0.71	0.7	0.3	0.0025	13.8	0.04	68	0.3	0.01	64
B32G	0.25	41	1	0.8	58	0.1	11	0.1	0.5	1.46	0.2	0.3	0.0025	2.1	0.04	12	0.05	0.005	8
B33G	0.25	118	1	1.6	147	0.1	31	0.1	0.5	0.43	0.2	0.3	0.0025	4.9	0.03	23	0.05	0.005	24
B34G	0.25	56	1	0.5	56	0.1	15	0.1	0.5	0.37	0.3	0.3	0.0025	2.3	0.04	17	0.05	0.01	10
B1E	0.25	116	5	0.9	95	0.1	32	0.1	0.5	0.88	0.6	0.3	0.0130	1.8	0.04	26	0.05	0.02	19
B2E	0.25	96	1	1.0	121	0.1	24	0.1	0.5	0.81	1.0	0.3	0.0025	1.6	0.03	1	0.05	0.01	18
B3E	0.25	65	1	0.8	122	0.1	14	0.1	0.5	0.56	2.1	0.3	0.0025	5.6	0.03	13	0.05	0.01	16
B4E	0.25	154	1	1.0	215	0.1	37	0.05	1	0.93	2.9	0.3	0.0025	2.1	0.04	1	0.05	0.01	35
B5E	0.25	107	5	0.8	167	0.1	26	0.05	0.5	0.89	1.7	0.3	0.0130	6.1	0.04	1	0.05	0.01	23
B6E	0.25	84	1	0.8	151	0.1	18	0.1	0.5	1.19	2.1	0.3	0.0025	5.6	0.04	21	0.05	0.01	15
B7E	0.25	58	1	0.6	133	0.1	12	0.05	0.5	1.10	0.9	0.3	0.0025	4.7	0.03	1	0.3	0.01	10
B8E	0.25	97	1	0.7	110	0.1	23	0.05	0.5	1.09	1.2	0.3	0.0025	3.8	0.04	1	0.05	0.02	20
B9E	0.25	126	1	1.1	99	0.1	30	0.05	0.5	0.77	0.9	0.3	0.0025	5.1	0.03	1	0.05	0.01	28
B10E	0.25	74	1	0.5	103	0.1	24	0.1	0.5	0.99	1.7	0.3	0.0025	2.0	0.04	3	0.05	0.01	13
B11E	0.25	60	1	1.0	47	0.1	14	0.05	0.5	0.31	0.4	0.3	0.0025	3.4	0.03	1	0.05	0.01	14
B12E	0.25	125	1	0.9	176	0.1	30	0.05	2	0.85	1.5	0.3	0.0025	4.1	0.05	1	0.3	0.02	27
B13E	0.25	85	1	0.9	101	0.1	20	0.05	2	0.86	1.5	0.3	0.0025	4.5	0.04	1	0.4	0.01	18
B14E	0.25	141	1	0.6	140	0.1	40	0.1	0.5	0.85	0.8	0.3	0.0025	3.2	0.05	33	0.05	0.02	24
B15E	0.25	156	1	0.6	128	0.1	42	0.05	0.5	0.50	1.5	0.3	0.0100	3.7	0.06	1	0.05	0.03	25
B16E	0.25	112	1	0.7	174	0.1	30	0.1	2	0.92	0.9	0.3	0.0025	4.5	0.06	30	0.05	0.02	22
B17E	0.25	124	1	0.4	149	0.1	30	0.1	0.5	0.95	0.7	0.3	0.0025	3.1	0.06	32	0.3	0.02	26
B18E	0.25	72	1	0.6	77	0.1	18	0.05	0.5	0.72	2.7	0.3	0.0025	3.8	0.05	1	0.5	0.02	14
B19E	0.25	63	1	0.5	88	0.1	15	0.05	2	1.00	2.3	0.3	0.0025	4.2	0.05	1	0.3	0.01	12
B20E	0.25	76	1	0.7	87	0.1	19	0.05	2	0.74	0.8	0.3	0.0025	3.5	0.05	1	0.05	0.02	15
B21E	0.25	239	1	0.4	206	0.1	55	0.05	0.5	0.72	0.8	0.3	0.0180	2.8	0.05	1	0.05	0.02	58
B22E	0.25	77	1	0.5	110	0.1	19	0.05	0.5	0.76	0.4	0.3	0.0025	8.2	0.06	1	0.05	0.02	16
B23E	0.25	78	1	0.8	148	0.1	20	0.05	0.5	0.93	1.2	0.3	0.0140	3.6	0.04	19	0.05	0.01	16
B24E	0.25	98	1	0.5	139	0.1	24	0.05	1	1.03	1.3	0.3	0.0025	3.8	0.05	26	0.05	0.02	21
B25E	0.25	79	1	0.5	111	0.1	21	0.05	0.5	0.49	1.7	0.3	0.0025	2.0	0.04	18	0.05	0.01	15
B26E	0.25	61	1	0.4	65	0.1	17	0.05	0.5	0.50	0.7	0.3	0.0025	8.3	0.04	19	0.05	0.01	11
B27E	0.25	86	5	0.3	88	0.1	23	0.05	0.5	0.78	0.7	0.3	0.0025	4.2	0.04	21	0.05	0.01	16
B28E	0.25	31	5	0.2	16	0.1	8	0.05	0.5	0.28	0.5	0.3	0.0025	2.1	0.04	8	0.05	0.01	6
B29E	0.25	70	1	0.8	177	0.1	18	0.1	0.5	0.75	1.2	0.3	0.0025	3.3	0.03	15	0.05	0.01	15
B30E	0.25	84	1	0.5	148	0.1	21	0.1	2	0.83	0.8	0.3	0.0025	4.6	0.05	21	0.05	0.02	19
B31E	0.25	65	1	0.5	66	0.1	17	0.05	0.5	0.85	0.3	0.3	0.0025	3.6	0.03	23	0.05	0.01	12
B32E	0.25	102	1	0.6	117	0.1	28	0.05	0.5	0.66	1.2	0.3	0.0025	2.0	0.04	29	0.05	0.01	19
B33E	0.25	150	1	1.3	99	0.1	38	0.1	0.5	1.76	0.7	0.3	0.0025	3.7	0.04	29	0.05	0.01	30
B34E	0.25	141	1	0.4	143	0.1	36	0.05	2	1.26	0.5	0.3	0.0025	5.5	0.05	36	0.05	0.02	26

Table A1 (continued): Tabulated data for vegetation samples at Barns Gold Prospect, Eyre Peninsula, South Australia. Is denotes insufficient sample to perform this analysis. Data below detection limit reported as detection limit x0.5. Element suffixed n denotes analysis by INAA. Element suffixed I denotes analysis by HR ICP MS.

Field number	Sn-i	Sr-n	Sr-i	Ta-n	Ta-i	Tb-n	Tb-i	Te-i	Th-n	Th-i	Ti-i	Tl-i	Tm-i	U-n	U-i	V-i	W-n	W-i	Yb-n	Yb-i
	ppb	ppm	ppm	ppm	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppm	ppb	ppm	ppb
B1G	20	58	58	0.025	0.2	0.05	1.8	4	0.05	8	16	1	0.76	0.005	5.0	65	0.03	22	0.013	11
B2G	20	58	55	0.025	0.3	0.05	1.5	4	0.05	14	18	2	0.84	0.005	5.0	89	0.03	19	0.003	10
B3G	20	120	113	0.025	0.2	0.05	3.6	5	0.05	37	13	2	1.09	0.005	31	180	0.03	23	0.003	7
B4G	20	78	84	0.025	0.2	0.05	1.5	6	0.05	8	18	1	0.67	0.005	23	68	0.03	25	0.003	10
B5G	20	110	101	0.025	0.1	0.05	1.5	1	0.05	11	21	2	0.60	0.005	13	135	0.03	31	0.003	12
B6G	20	130	136	0.025	0.1	0.05	2.9	2	0.05	15	20	2	1.32	0.040	39	64	0.03	18	0.003	9
B7G	20	60	59	0.025	0.2	0.05	1.6	2	0.05	13	21	2	0.84	0.005	20	121	0.03	29	0.003	11
B8G	20	61	53	0.025	0.2	0.05	3.4	6	0.05	32	38	3	0.96	0.005	12	122	0.03	18	0.010	8
B9G	is	103	is	0.025	is	0.05	is	is	0.05	is	is	is	is	0.019	is	is	0.03	is	0.003	is
B10G	20	160	141	0.025	0.2	0.05	3.3	8	0.05	17	21	2	0.99	0.005	26	103	0.03	20	0.003	8
B11G	20	65	53	0.025	0.1	0.05	1.3	1	0.05	12	47	2	0.29	0.005	13	63	0.03	13	0.003	1
B12G	20	88	97	0.025	0.6	0.05	5.7	5	0.05	49	22	2	1.40	0.005	13	255	0.03	23	0.003	8
B13G	20	74	84	0.025	0.2	0.05	2.6	8	0.05	6	20	2	1.11	0.005	16	140	0.03	19	0.003	11
B14G	20	60	59	0.025	0.1	0.05	1.8	5	0.05	11	57	1	0.50	0.005	20	89	0.03	17	0.003	4
B15G	20	88	95	0.025	0.2	0.05	1.4	9	0.05	12	20	1	0.53	0.005	5.0	113	0.03	21	0.003	5
B16G	20	15	55	0.025	0.2	0.05	1.5	4	0.05	13	21	0	0.52	0.005	5.0	111	0.03	22	0.003	4
B17G	20	58	64	0.025	0.1	0.05	1.5	1	0.05	9	16	1	0.44	0.005	5.0	66	0.03	35	0.003	3
B18G	20	110	87	0.025	0.1	0.05	4.2	1	0.05	23	52	2	1.00	0.005	39	150	0.03	31	0.003	7
B19G	20	77	75	0.025	0.1	0.05	1.8	1	0.05	16	16	0	0.50	0.005	11	137	0.03	17	0.003	2
B20G	20	86	64	0.025	0.2	0.05	2.9	8	0.05	25	39	2	0.76	0.005	25	133	0.03	18	0.003	5
B21G	20	65	64	0.025	0.1	0.05	1.5	2	0.05	12	16	0	0.40	0.005	12	90	0.03	10	0.003	2
B22G	20	61	67	0.025	0.2	0.05	1.2	1	0.05	12	17	2	0.34	0.005	5.0	100	0.03	11	0.003	1
B23G	20	94	87	0.025	0.1	0.05	1.3	5	0.05	16	42	2	0.42	0.005	5.0	87	0.03	14	0.003	3
B24G	20	91	76	0.025	0.1	0.05	2.1	1	0.05	17	18	2	0.95	0.005	10	123	0.03	14	0.003	8
B25G	20	91	78	0.025	0.1	0.05	1.1	1	0.05	11	10	1	0.12	0.005	5.0	93	0.03	22	0.003	0
B26G	20	98	80	0.025	0.2	0.05	1.5	2	0.05	12	18	0	0.23	0.005	14	99	0.03	17	0.003	0
B27G	20	63	62	0.025	0.1	0.05	4.7	8	0.05	21	43	2	0.80	0.005	16	113	0.03	14	0.012	4
B28G	20	60	55	0.025	0.1	0.05	1.7	3	0.05	8	16	2	0.55	0.005	12	71	0.03	11	0.003	6
B29G	20	58	49	0.025	0.1	0.05	1.7	1	0.05	12	49	2	0.55	0.005	24	61	0.03	10	0.003	4
B30G	20	64	69	0.025	0.1	0.05	2.0	1	0.05	13	21	2	0.97	0.005	11	103	0.15	39	0.003	12
B31G	20	62	87	0.025	0.7	0.05	10.1	2	0.05	112	48	4	2.21	0.005	36	398	0.03	35	0.014	17
B32G	20	57	51	0.07	0.1	0.05	1.2	2	0.05	12	17	2	0.55	0.040	5.0	88	0.03	21	0.003	3
B33G	20	93	66	0.025	0.2	0.05	3.8	2	0.05	31	11	3	1.30	0.005	14	154	0.03	39	0.013	13
B34G	20	61	49	0.025	0.1	0.05	1.6	1	0.05	13	15	1	0.62	0.005	10	106	0.03	16	0.003	7
B1E	20	5	48	0.05	1.2	0.05	2.9	1	0.05	19	19	11	0.87	0.005	5.0	174	0.03	23	0.003	7
B2E	20	34	64	0.025	0.2	0.05	2.6	1	0.05	20	19	15	1.45	0.005	5	109	0.03	24	0.003	23
B3E	20	37	54	0.025	0.7	0.05	2.4	1	0.05	22	21	10	0.69	0.005	5	172	0.03	24	0.003	6
B4E	20	34	72	0.025	0.6	0.05	5.4	1	0.05	75	19	14	1.82	0.005	20	608	0.03	27	0.007	22
B5E	20	22	64	0.025	0.6	0.05	3.6	1	0.05	38	19	14	1.37	0.005	11	318	0.03	24	0.011	18
B6E	20	59	57	0.025	0.2	0.05	2.1	1	0.05	18	28	16	1.48	0.005	6	140	0.03	15	0.003	24
B7E	20	53	45	0.025	0.8	0.05	1.4	1	0.05	14	27	11	1.30	0.005	4	100	0.03	13	0.010	12
B8E	20	68	75	0.025	0.2	0.05	3.2	1	0.05	34	26	15	0.74	0.005	10	272	0.03	14	0.003	5
B9E	20	37	56	0.025	0.3	0.05	4.2	1	0.05	45	23	9	0.87	0.005	5	215	0.03	20	0.007	6
B10E	20	51	47	0.025	0.1	0.05	1.9	1	0.05	17	25	14	0.78	0.005	5	97	0.03	14	0.003	7
B11E	20	43	21	0.025	0.7	0.05	2.2	1	0.05	36	24	3	0.40	0.005	5	146	0.03	7	0.003	2
B12E	20	43	50	0.025	0.3	0.05	4.2	1	0.05	57	21	6	0.99	0.005	12	324	0.03	30	0.003	6
B13E	20	50	50	0.025	0.2	0.05	2.7	1	0.05	30	22	8	0.64	0.005	5	273	0.03	22	0.014	4
B14E	20	59	52	0.025	0.4	0.05	2.9	1	0.05	26	12	19	0.93	0.005	17	287	0.03	27	0.003	8
B15E	20	74	60	0.025	0.2	0.05	3.6	1	0.05	37	12	10	0.88	0.005	5	234	0.03	31	0.003	5
B16E	20	34	51	0.025	0.2	0.05	4.4	1	0.05	40	16	6	1.41	0.005	10	257	0.03	23	0.027	11
B17E	20	34	48	0.025	0.3	0.05	3.1	3	0.05	25	17	16	1.02	0.005	5.0	237	0.03	35	0.014	9
B18E	20	46	62	0.025	0.3	0.05	2.2	1	0.05	23	17	10	0.61	0.005	5	114	0.03	13	0.015	4
B19E	20	60	58	0.025	0.1	0.05	1.9	1	0.05	24	19	7	0.54	0.005	5	127	0.03	26	0.003	3
B20E	20	57	58	0.025	0.2	0.05	2.3	1	0.05	26	17	7	0.63	0.005	5	151	0.03	34	0.003	4
B21E	20	57	86	0.025	0.9	0.05	9.0	1	0.05	118	17	6	1.95	0.005	28	633	0.03	31	0.018	13
B22E	20	64	68	0.025	0.2	0.05	2.4	1	0.05	33	17	7	0.66	0.005	5	183	0.03	19	0.003	4
B23E	20	64	53	0.025	0.1	0.05	1.9	1	0.05	16	16	23	0.58	0.050	5.0	141	0.03	14	0.016	4
B24E	20	54	57	0.025	0.3	0.05	2.8	5	0.05	23	16	14	1.15	0.005	5	177	0.03	20	0.003	11
B25E	20	52	41	0.025	1.9	0.05	2.3	2	0.05	22	20	9	0.65	0.005	5	145	0.03	17	0.003	4
B26E	20	76	66	0.025	0.8	0.05	1.8	2	0.05	21	22	6	0.54	0.005	5	128	0.03	9	0.003	3
B27E	20	51	37	0.025	0.5	0.05	2.5	3	0.05	24	36	9	0.72	0.005	5	150	0.03	15	0.003	5
B28E	20	46	25	0.025	0.1	0.05	0.9	1	0.05	10	11	2	0.24	0.005	5	57	0.03	5	0.003	1
B29E	20	52	49	0.025	0.1	0.05	2.2	1	0.05	19	20	15	1.45	0.005	4	138	0.03	13	0.003	8
B30E	20	72	43	0.025	0.2	0.05	2.3	2	0.05	19	12	7	1.37	0.005	5	151	0.03	24	0.003	18
B31E	20	57	56	0.025	0.4	0.05	1.9	3	0.05	22	34	8	0.56	0.005	5	140	0.03	13	0.003	4
B32E	20	61	61	0.025	0.3	0.05	3.2	6	0.05	30	44	8	0.92	0.005	13	186	0.03	31	0.003	6
B33E	20	48	40	0.025	0.2	0.05	3.8	1	0.05	30	13	44	1.17	0.005	5	209	0.03	15	0.003	7
B34E	20	5	66	0.025	0.4	0.05	4.2	5	0.05	46	42	6	1.29	0.005	13	276	0.03	32	0.003	8

Table A1 (continued): Tabulated data for vegetation samples at Barns Gold Prospect, Eyre Peninsula, South Australia. Is denotes insufficient sample to perform this analysis. Data below detection limit reported as detection limit x0.5. Element suffixed n denotes analysis by INAA. Element suffixed I denotes analysis by HR ICP MS.

Field number	Y-i	Zn	Zn-i	Zr-i
	ppb	ppm	ppm	ppb
B1G	49	8	28	201
B2G	37	12	23	187
B3G	77	10	34	333
B4G	44	8	27	160
B5G	48	4	23	178
B6G	54	8	24	188
B7G	34	5	10	168
B8G	61	5	8	976
B9G	is	5	is	is
B10G	75	4	8	300
B11G	30	1	6	288
B12G	136	1	10	388
B13G	68	5	21	131
B14G	45	9	7	115
B15G	40	9	13	70
B16G	40	6	11	59
B17G	41	6	11	53
B18G	105	9	8	138
B19G	47	5	8	25
B20G	63	5	11	252
B21G	37	5	13	66
B22G	30	5	11	25
B23G	31	8	9	110
B24G	65	8	24	162
B25G	22	5	1	25
B26G	29	6	3	25
B27G	73	6	4	837
B28G	36	5	18	160
B29G	44	6	11	235
B30G	49	6	29	292
B31G	179	9	16	1680
B32G	29	1	13	113
B33G	82	3	59	536
B34G	42	9	20	193
B1E	63	8	15	141
B2E	88	7	59	422
B3E	49	10	17	302
B4E	129	6	71	1100
B5E	99	8	59	711
B6E	53	7	27	301
B7E	38	7	19	304
B8E	80	9	13	89
B9E	99	13	18	227
B10E	47	8	18	646
B11E	51	9	1	166
B12E	107	14	21	357
B13E	67	8	14	67
B14E	75	17	22	246
B15E	95	11	11	62
B16E	80	8	19	252
B17E	92	14	20	25
B18E	75	9	6	25
B19E	57	10	11	67
B20E	69	12	18	25
B21E	210	13	14	884
B22E	68	9	10	87
B23E	58	12	17	25.0
B24E	87	9	28	226
B25E	52	12	17	25
B26E	44	12	7	25
B27E	61	5	3	25
B28E	24	10	1	25
B29E	59	12	22	340
B30E	71	15	59	256
B31E	48	10	6	25
B32E	78	7	12	25
B33E	126	14	25	25
B34E	105	17	7	25