



Radioactivity Analysis Report EA18-035

Requested by: ARPANSA Reg branch
38-40 Urunga Parade
Miranda NSW 2228
Attention: Loch Castle

Order no.: Request received 14/03/2018

Type: Soil
Number of samples: 9
Date received: 14/03/2018
Sample pre-treatment: None
Sampling: Samples tested as received
Date analysis started: 05/04/2018

Analysis requested: Cs-137, Pb-210, K-40, Eu-152, Ra-226, Ra-228 and Th-228

Analytical method: Analysis carried out by high resolution gamma-ray spectrometry (RAS-SOP-0600).

Report prepared by: Liesel Green, Analyst

Signed: 

Date: 3 July 2018

Sandra Sdraulig, Technical Manager
For and on behalf of: Carl-Magnus Larsson CEO of ARPANSA

Radioactivity Analysis Report EA18-035 (continued)

Results:

| ARPANSA Sample Number | Client Sample Identifier | Sample Reference Date | Radioactivity Concentration (Bq/g) | | | | | | |
|-----------------------|--------------------------|-----------------------|------------------------------------|-----------------|---------------|--------------|-----------------|-----------------|-----------------|
| | | | Caesium-137 | Lead-210 | Potassium-40 | Europium-152 | Radium-226* | Radium-228* | Thorium-228* |
| EA18-035-0061 | WILD DOG CREEK KOOLI A | 27/03/2017 | <0.00059 | 0.069 ± 0.018 | 0.273 ± 0.037 | < 0.00099 | 0.021 ± 0.0023 | 0.0353 ± 0.0047 | 0.0457 ± 0.0048 |
| EA18-035-0062 | WILD DOG CREEK KOOLI B | 27/03/2017 | <0.00069 | 0.056 ± 0.015 | 0.325 ± 0.044 | <0.0014 | 0.0223 ± 0.0027 | 0.0383 ± 0.0049 | 0.0534 ± 0.0068 |
| EA18-035-0063 | WOO - HAR 1 | 27/03/2017 | 0.00194 ± 0.00038 | 0.040 ± 0.014 | 0.526 ± 0.074 | <0.0011 | 0.0315 ± 0.0039 | 0.0359 ± 0.0048 | 0.0468 ± 0.0062 |
| EA18-035-0064 | WOO - KOO 1 | 27/03/2017 | 0.00163 ± 0.00039 | 0.069 ± 0.022 | 0.343 ± 0.049 | <0.0016 | 0.0265 ± 0.0033 | 0.0343 ± 0.0046 | 0.0468 ± 0.0060 |
| EA18-035-0065 | WOO - RA 1 | 27/03/2017 | <0.0011 | 0.041 ± 0.019 | 0.143 ± 0.026 | <0.0017 | 0.0164 ± 0.0018 | 0.0175 ± 0.0021 | 0.0238 ± 0.0026 |
| EA18-035-0066 | WOO - RA 2 | 27/03/2017 | <0.0012 | 0.0307 ± 0.0080 | 0.261 ± 0.043 | <0.0014 | 0.0166 ± 0.0021 | 0.0238 ± 0.0038 | 0.0307 ± 0.0040 |
| EA18-035-0067 | WOO - RA 3 | 27/03/2017 | <0.0012 | 0.0354 ± 0.0092 | 0.297 ± 0.044 | <0.0019 | 0.0240 ± 0.0028 | 0.0239 ± 0.0038 | 0.0315 ± 0.0040 |
| EA18-035-0068 | WOO - RA 4 | 27/03/2017 | <0.0013 | 0.164 ± 0.041 | 0.266 ± 0.035 | <0.0018 | 0.0169 ± 0.0021 | 0.0261 ± 0.0037 | 0.0342 ± 0.0043 |
| EA18-035-0069 | WOO - RA 5 | 27/03/2017 | <0.0010 | 0.042 ± 0.016 | 0.159 ± 0.022 | <0.0015 | 0.0116 ± 0.0016 | 0.0212 ± 0.0030 | 0.0293 ± 0.0039 |

* Radionuclide concentration estimated from short-lived gamma-emitting progeny.

These results are reported on a dry weight basis.

The reported uncertainty is an expanded uncertainty (sample mass and counting uncertainties only) calculated using a coverage factor of 2. Minimum detectable activity concentration (<x): the true activity concentration is estimated to be less than x with 95% confidence, as defined by Currie (Currie, L.A., 1968 Anal. Chem. 40, 586-593)