

DRAFT



RADIATION MANAGAMENT PLAN

ANDRANANGOO CREEK WEST

and

LETHBRIDGE BAY WEST PROJECTS

Radiation Management Plan – Matilda Minerals Ltd

1. Introduction

The proposed mineral sands production operation at Andranangoo Creek West and Lethbridge Bay West on Melville Island in the Northern Territory of Australia requires a radiation management plan (RMP) for the handling and disposal of any materials classified as 'radioactive' under NT Government legislation.

This RMP proposes a programme of monitoring that covers all aspects of NT legislation and applicable Federal legislation in regard to radiation health and safety, transport, storage, export and waste management.

All reject sand arising from the process of separation of heavy minerals will be placed directly back into the pit excavation, on a continuous basis. Transport of the mineral sands for export will be by truck to a storage shed at Port Melville, for shipping. The mineral sands material is rated as EXEMPT under the transport code.

There is no provision for emergency procedures, as ionising radiation levels are so low there is no possibility that a radiation emergency could arise. There is no requirement for a controlled area.

Mining, processing and rehabilitation methods for the project are described in the Draft Environmental Impact Statement (URS November 2005).

2. Baseline Monitoring

A baseline survey was conducted by On Site Technology Pty Ltd (OST) to:

- Determine existing levels of radiation in the operational area; and
- Establish long term monitoring locations for gamma radiation, soil radon flux measurements and atmospheric radon concentrations.

The baseline work was only carried out at Andranangoo Creek because of access restrictions and time limitations. The baseline survey was undertaken in October, 2005, and the results presented in OST report 05054 dated 30th November, 2005 (Appendix 1). The equipment used in the baseline survey is listed in Appendix 2.

Gamma exposures measured are conservatively estimated to be less than 1 mSv/a (milliSievert/annum) above background, which is the level allowed for exposure to members of the public. Radon emanation rates have been measured in the area of the mineral sands deposits, and also at the proposed plant and camp area, located on the tertiary plateau.

The levels measured showed that the background radon gas emanation from the soils at the camp area is within the range of world and Australian normal emanation rates. It is notable that the background radon gas emanation from soils in the plateau area is higher than the rates measured at the mineral sands deposit areas on the beach.

The results (at 95% confidence interval) indicated levels soil radon flux levels of 0.01 to 0.04 Bq/m²/s on the plateau, compared with 0.00 to 0.01 Bq/m²/s in the sand plain area.

3. Monitoring Programme

The source of ionising radiation in the mineral sands is the natural uranium and thorium incorporated into the molecular structure of the minerals.

This RMP is designed with the prime objective of ensuring that no employees are exposed to ionising radiation exceeding the limit for workers, and to adhere to the ALARA (as low as reasonably achievable) principle.

The equipment proposed for the operational monitoring programme is listed in Appendix 3.

Area Gamma Monitoring

Area gamma monitoring will be conducted every three months in and around the mine and mill, at various locations to be determined after full plant design has been fixed. Monitoring will also be undertaken at the mine sites prior to mining and after rehabilitation of the mined areas.

Measurements are to be made with sensitive portable gamma monitors, and over three months with TLD (Thermo Luminescent Dosimeter) monitors at selected locations. Hand held meters will be calibrated annually at a laboratory approved by the Victorian Health Department Radiation Control Branch.

Personal Gamma Monitoring

Workers expected to receive the maximum exposure will wear TLD monitoring devices on all shifts worked throughout the year. For other workers, each employee category will be randomly monitored. Monitors will be issued for a period of three months.

It is unlikely that monitoring on the mine site itself will be necessary, but this will be evaluated during the mining operation to see if there are unusually high radiation levels in the mine excavation.

When not in use the TLD monitors will be stored in an area with radiation levels similar to the natural background in the area. Monitors received from the TLD service will be issued as soon as they arrive, and the used monitors will be collected and returned to the service promptly for assessment.

Position Air Sampling

Environmental dust levels will be checked following the commencement of mining operations. Sampling will be for a minimum of 100 hours at a flow rate of 70 L/min minimum. Assessment will be gravimetric with the beginning and final dry weight of the filter measured.

Gross alpha measurements will be made on the filter samples, determined from small (about 37 mm disks) punched out of the main filter. Similar monitoring will be conducted inside the separation plant, at locations to be determined. This monitoring will be reviewed after six months of sampling to see whether further monitoring will be required.

Personal Air Sampling

Monitoring of personal air samples for radioactivity is not considered necessary unless nuisance dust levels are seen to rise above the limit of 10 mg/m³. If such measurements are deemed to be necessary, they will be conducted in accordance with the appropriate Australian Standard (AS3640).

Radon Monitoring

Environmental radon monitoring will be conducted for the first six months of operation of the mine and separation plant, at locations similar to those used for environmental dust sampling.

These will be measured with passive TED (Track Etch Dosimeters) radon monitors and after six months an assessment will be made about the usefulness of continuing such monitoring.

Radio-nuclides in Ground Water

Ground water samples will be taken from boreholes (in positions to be determined) at the commencement and following completion of mining, and annually. The samples would be analysed for radium 226, radium 228 and potassium. In addition the pre-mining analysis would include uranium and thorium.

APPENDICES

APPENDIX 1

**Radiological Survey of Matilda Minerals Ltd Andranangoo Lease
At Melville Island, Northern Territory**

On Site Technology Pty Ltd

REPORT NO. 05054

30th November 2005



Our Ref. 05054_r.doc/pjw

21st October 2005

Ms Julie Marris
Associate Environmental Scientist
URS Australia Pty Ltd
Level 1, Arkaba House
The Esplanade
DARWIN NT 0800

On Site Technology Pty Ltd
ACN 079 329 025

PO Box 5143
ALBERTON
SA 5014

Telephone 08 8447 4833
Facsimile 08 8241 2079
Mobile 0417 846 826

Report Number 05054
Your Order email dated 28th September 2005

**Report Title Radiological Survey of
Matilda Minerals Ltd
Andranangoo Lease
Melville Island, NT**

Report by John Waters

Authorized

A handwritten signature in black ink, appearing to read "John Waters". The signature is fluid and cursive, with a long, sweeping underline.

DipAppSc (Chem), MRACI, CChem, MARPS

Contents

1	Introduction	3
2	Method	3
2.1	Gamma Survey	3
2.2	Geo-referencing	3
2.3	Soil Radon Flux	4
2.4	Long Term Monitoring	4
3	Results and Discussion	5
3.1	Gamma Survey	5
3.2	Soil Radon Flux	13
3.3	Long Term Monitoring	14

Tables

1	Gamma Dose Rate at Long Term Monitoring Locations	5
2	Gamma Readings for Survey 1	5
3	Gamma Readings for Survey 2	7
4	Gamma Readings for Survey 3	7
5	Gamma Readings for Survey 4	8
6	Gamma Readings for Survey 5	9
7	Summary of Statistical Results for Gamma Dose Rates	11
8	Soil Radon Flux Results	13

Figures

1	Monitoring Locations, Andranangoo Creek West	6
2	Gamma Survey 1	10
3	Gamma Survey 2	10
4	Gamma Survey 3	10
5	Gamma Survey 4	11
6	Gamma Survey 5	11

Introduction

Matilda Minerals Limited hold a mineral lease at Andranangoo Creek West on Melville Island in the Northern Territory. The lease is being developed for the extraction and concentration of mineral sand.

On Site Technology Pty Ltd was engaged by URS Australia Pty Ltd to undertake a baseline gamma survey, radon soil flux measurements and to establish a number of monitoring locations for long term determination of gamma dose and atmospheric radon values.

Long term monitoring locations were established and fitted with gamma dosimetry badges supplied by Radiation Wise Pty Ltd. Atmospheric radon monitors were not available at the time of the site visit, these will be supplied to Matilda Minerals staff for field deployment as soon as they become available Expected to be at the end of October).

It was originally intended to also undertake surveys of another lease located at Lethbridge Bay West. However this work was not undertaken because of access restrictions and time limitations during the site visit.

Monitoring at Andranangoo Creek West was undertaken on the 12th and 13th of October 2005.

Method

Gamma Survey

The gamma survey was undertaken with a Ludlum model 19 dose rate meter (serial number 141466). The meter has been calibrated by Applied X-Ray Instrument Services according to the requirements of regulations of the South Australian Radiation Protection Act (1982). The calibration is traceable to the national standard and is valid until 7th January 2006.

Calibration establishes that the meter reads within 5% relative at the 95% confidence limit for the Cs¹³⁷ calibration source. The dominant energy of the calibration source is 662 keV, this is close to the dominant energy of gamma radiation in the uranium decay chain (i.e. 609 keV for the Bi²¹⁴ daughter of Rn²²²). The calibration is considered suitable for the determination of gamma dose rate from naturally occurring uranium and thorium minerals.

The survey was conducted by taking a reading over one minute at a height of one meter above ground level. The reading was taken as the visual average of the meter deflexion over the minute reading time. The quantification limit for the meter is 0.005 µGy per hour on the most sensitive scale. The estimated error (95% confidence limit) of readings less than 0.25 µGy per hour is 0.005 µGy per hour.

Geo-referencing

All sample locations were recorded with a Garmin model GPS 76 (serial number 80304307) running Garmin version 2.04 software (ID 2770531524). The location format used was UTM UPS and the map datum was WGS 84 (equivalent to GDA 94).

The GPS software calculated the positional accuracy was in the range 4 to 8 meters in the horizontal direction. However comparison with GPS position with exploration drilling peg lines indicated that a positional accuracy of the order of 2 meters was generally achieved.

Soil Radon Flux

Soils radon flux was determined by the charcoal cup method. This method is widely used and accepted for the determination of soil radon flux.

The method involves the use of an inverted, sealed container (in this case 22 cm in diameter) to collect radon emitted from the soil surface. The radon is absorbed onto an activated charcoal trap.

The charcoal absorber is counted on a low resolution gamma spectrometer (using a 3" NaI(Tl) detector and 512 channel multi channel analyser). Radon is quantified using the 609 keV Bi²¹⁴ photopeak. The results are corrected for radon decay during sampling, between sampling and counting and during counting to provide an average soil radon flux during the sampling period.

The low resolution gamma spectrometer is calibrated using a Canadian CRM uranium ore standard (BL-4) known to be in secular equilibrium. The calibration standard contains 214.9 Bq of radium mixed with charcoal in the same geometry as the charcoal absorption traps used in the field.

Triplicate preparation of the calibration standard indicates that the calibration error (at the 95% confidence limit) is 5% relative.

Multiple counting of blanks, standards and samples indicates that the error (at the 95% confidence limit) associated with counting, decay correction and sample handling is 10% relative with a detection limit of 0.01 Bq/m²/s.

Preparation of an independent quality assurance standard with a nominal value of 185.8 Bq provided a result of 181 +/- 18 Bq. This result and the duplicates and replicates reported in Table 7 are consistent with the calibration and counting errors discussed above.

Long Term Monitoring

Long term monitoring for atmospheric radon and gamma dose is being undertaken using proprietary monitors supplied by Radiation Wise Pty Ltd. These monitors are processed by Landaur Incorporated who hold NVLP accreditation. Via a memorandum of understanding NVLP accreditation is accepted as being equivalent to NATA accreditation in Australia.

The long term monitors are;

Luxel monitors for gamma dose
Type DRNF for atmospheric radon

Matilda Minerals Ltd personnel have been instructed on the deployment and change over of the monitors. This change over will occur every three months for the next twelve months.

Results

Gamma Survey

Gamma survey results are provided in Tables 1 to 6 with a graphical representation provided in Figures 2 to 6. Long term monitoring locations and linear gamma survey locations are shown in Figure 1.

Location #	Location UTM WGS 84			Gamma $\mu\text{Gy}/\text{hour}$	Location Description	Gamma Badge #
		mE	mN			
1	52 L	0699191	8743216	0.04	Top Soil Next to Costean 1	2969991
2	52 L	0699206	8743204	0.13	In Costean 1	2969993
3	52 L	0699286	8743402	0.05	Quaternary Strand Plain	2969992
6	52 L	0700234	8743138	0.20	In Costean 2 (edge of deposit)	2969987
7	52 L	0700228	8743114	0.09	Tertiary Plateau next to 6	2969988
8	52 L	0700135	8743456	0.04	Quaternary Strand Plain	2969989
9	52 L	0701918	8743892	0.11	In Costean	2969984
11	52 L	0701921	8743850	0.05	Top Soil Next to Costean	2969694
13	52 L	0700369	8743012	0.09	Camp Site (Tertiary Plateau)	2969986

Table 1 Gamma Dose Rate at Long Term Monitoring Locations

In Tables 2 to 6 the coloured bar to the right of the gamma readings is taken from Figure 1. Yellow represents non mineralised areas, red represents mineralised areas and green represents low lying wet areas.

UTM WGS 84		Gamma $\mu\text{Gy}/\text{hour}$	
mE	mN		
8742996	698414	0.070	
8743018	698416	0.070	
8743040	698420	0.055	
8743062	698439	0.040	
8743078	698442	0.040	
8743098	698439	0.040	
8743118	698439	0.030	
8743142	698448	0.035	
8743166	698448	0.025	
8743188	698438	0.020	
8743210	698423	0.020	
8743228	698419	0.020	
8743250	698420	0.025	
8743272	698426	0.030	
8743300	698425	0.025	

Table 2 Gamma Readings for Survey 1

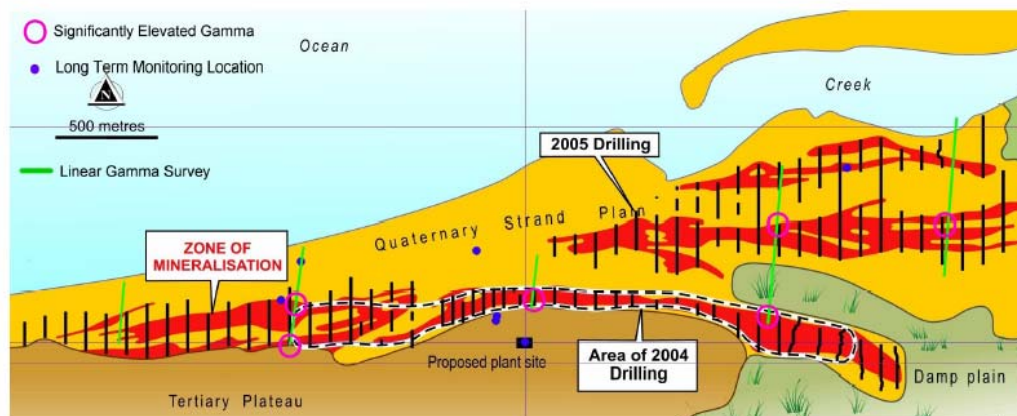


Figure 1 Monitoring Locations, Andranangoo Creek West

UTM WGS 84		Gamma μGy/hour	
mE	mN		
8742994	699312	0.100	
8743014	699312	0.110	
8743036	699306	0.100	
8743058	699306	0.080	
8743080	699238	0.060	
8743102	699302	0.050	
8743124	699305	0.050	
8743150	699305	0.065	
8743172	699306	0.170	
8743196	699306	0.130	
8743218	699303	0.080	
8743244	699300	0.080	
8743266	699299	0.055	
8743288	699302	0.040	
8743314	699302	0.040	
8743336	699305	0.040	
8743358	699298	0.035	
8743404	699301	0.040	
8743444	699285	0.050	
8743470	699278	0.130	

Table 3 Gamma Readings for Survey 2

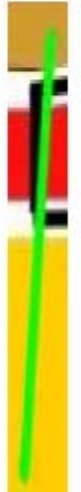
UTM WGS 84		Gamma μGy/hour	
mE	mN		
8743148	700418	0.070	
8743166	700415	0.100	
8743198	700405	0.130	
8743220	700399	0.160	
8743236	700401	0.180	
8743256	700402	0.085	
8743272	700402	0.070	
8743294	700399	0.050	
8743322	700403	0.070	
8743336	700412	0.060	
8743356	700413	0.040	
8743366	700416	0.035	
8743396	700421	0.035	
8743430	700436	0.035	

Table 4 Gamma Readings for Survey 3

UTM WGS 84		Gamma μGy/hour
mE	mN	
8743092	701575	0.080
8743114	701587	0.100
8743134	701594	0.110
8743164	701605	0.120
8743188	701613	0.065
8743212	701619	0.090
8743232	701617	0.060
8743262	701610	0.050
8743292	701610	0.040
8743312	701604	0.040
8743326	701600	0.055
8743338	701599	0.070
8743362	701597	0.065
8743386	701599	0.055
8743420	701602	0.055
8743440	701610	0.030
8743466	701617	0.040
8743488	701623	0.050
8743510	701622	0.050
8743534	701615	0.065
8743558	701605	0.055
8743586	701599	0.360
8743610	701599	0.130
8743624	701599	0.050
8743652	701598	0.055
8743670	701593	0.030
8743692	701588	0.035
8743716	701580	0.030
8743738	701573	0.035
8743758	701569	0.040
8743784	701567	0.040
8743802	701564	0.040
8743814	701560	0.060
8743834	701551	0.055
8743854	701545	0.040

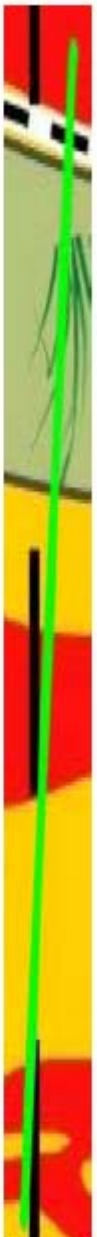


Table 5 Gamma Readings for Survey 4

UTM WGS 84		Gamma μGy/hour
mE	mN	
8743322	702401	0.025
8743338	702405	0.030
8743364	702407	0.030
8743386	702412	0.030
8743402	702418	0.040
8743422	702412	0.065
8743448	702412	0.040
8743470	702412	0.045
8743486	702412	0.060
8743508	702412	0.080
8743528	702412	0.075
8743550	702412	0.150
8743570	702412	0.220
8743594	702412	0.100
8743612	702412	0.210
8743636	702412	0.055
8743658	702412	0.040
8743682	702412	0.025
8743704	702412	0.030
8743724	702412	0.045
8743742	702412	0.065
8743764	702419	0.030
8743784	702416	0.025
8743806	702419	0.025
8743828	702413	0.020
8743850	702412	0.025
8743872	702412	0.040
8743894	702416	0.040
8743916	702421	0.085
8743934	702429	0.040
8743956	702439	0.030
8743976	702445	0.030
8743998	702450	0.050
8744020	702453	0.055
8744042	702458	0.055
8744066	702461	0.045
8744088	702462	0.040

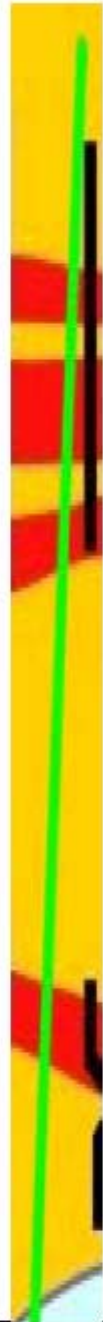


Table 6 Gamma Readings for Survey 5

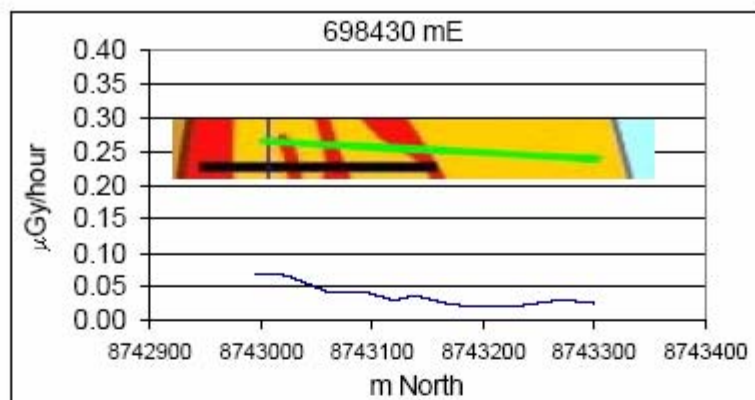


Figure 2 Gamma Survey 1

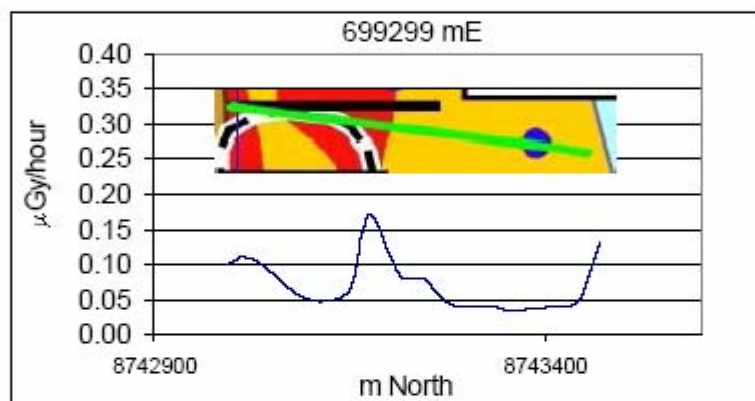


Figure 3 Gamma Survey 2

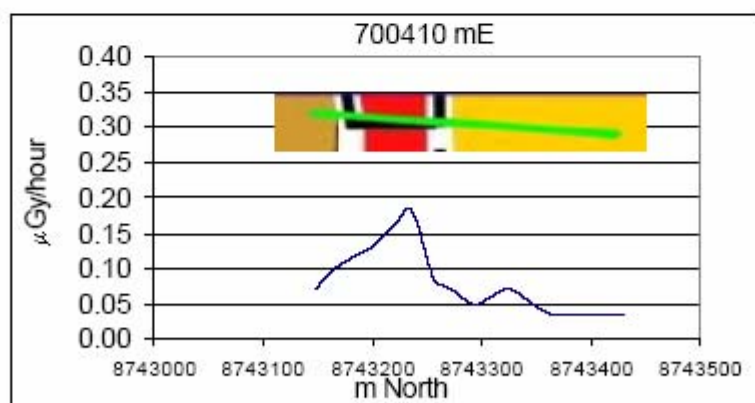


Figure 4 Gamma Survey 3

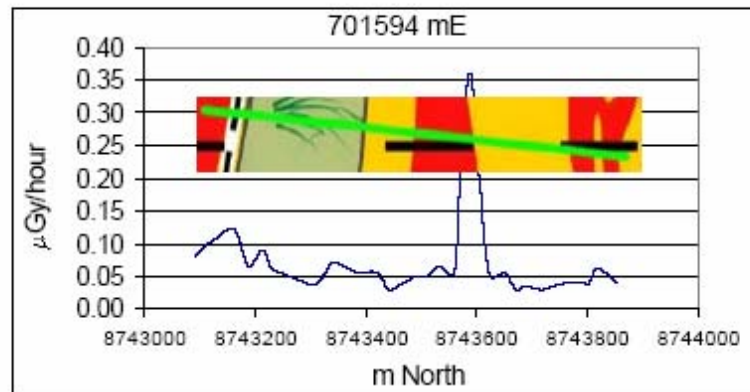


Figure 5 Gamma Survey 4

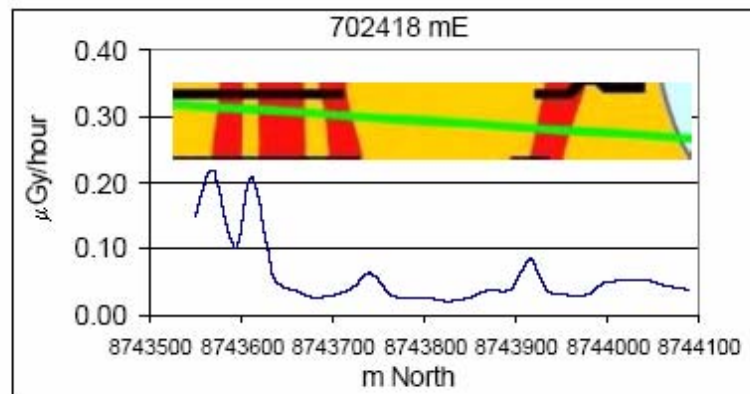


Figure 6 Gamma Survey 5

A statistical summary of the gamma survey results is provided in Table 7. The Table provides the average, standard deviation and 95% lower and upper confidence limits as numerical data and the 95% confidence interval as a bar chart at the right side.

Area Description	Dose Rate $\mu\text{Sv}/\text{hour}$				95% CI Graph
	Average	Std Dev	95% LCL	95% UCL	
All undisturbed areas	0.06	0.05	0.00	0.16	
Non Mineralised areas	0.04	0.01	0.01	0.07	
Mineralised areas	0.09	0.06	0.00	0.20	
Low Mineralised areas	0.06	0.02	0.02	0.09	
High Mineralised areas	0.15	0.06	0.02	0.20	
In Costeans	0.15	0.05	0.05	0.24	

Table 7 Summary of Statistical Results for Gamma Dose Rate

A number of conclusions can be drawn from the gamma survey data, particularly the statistical data presented in Tables 1 and 7.

At the 95% confidence limit there is no significant difference between areas that have been identified as mineralised and those identified as non mineralised. There are some mineralised areas with higher gamma activity (depicted as  in Figure 1), however there is little statistical reason to treat these as a separate data sub set.

There is an elevated gamma dose rate (compared to background) in the costeans, where the mineral bearing sand has been exposed. This elevation is also evident at the coast in locations where black sand has been concentrated and exposed by wind and wave action.

When considering the average annual dose that may be received by various groups the following factors have been used;

For the local population, permanent habitation of the mineral lease area is considered unlikely, however the background dose rates in the lease area are probably typical of all areas on the island. Based on the data for all undisturbed areas in Table 7 the average background dose is estimated to be 0.53 mSv per year (95% upper confidence limit 1.4 mSv per year).

For workers currently engaged in exploration and other pre mining activities the occupational dose is estimated to be 0.44 mSv per year (95% upper confidence limit 0.73 mSv per year). This estimate is based on a 2 week on 1 week off roster with a 12 hour working day and includes a dose rate of 0.06 μ Sv per hour while working and a 0.09 μ Sv per hour while at the camp. While these estimated doses are considered occupational because they would not be received except for the working environment they are comparable to the normal background dose that would be received anywhere in Australia.

For mining operations, where the mineralised sand will be exposed, occupational exposure is estimated to be slightly higher with an average of 0.70 mSv per year (95% upper confidence limit 0.96 mSv per year). These estimates are based on the same working regime discussed above and assume the worker spends all working hours in close proximity to the exposed mineral bearing sand.

The occupational exposure estimates discussed above are considered over estimates because they include exposure while at the mining camp. Even considering this over estimation the dose rate received by current employees and expected to be received by those future employees engage in mining activities are low compared to the 1 mSv maximum permitted for members of the public and are considered typical of the normal background dose received in Australia.

The estimated annual dose rates are comparable with normal background radiation exposure in the Australian environment. For example typical backgrounds in Adelaide vary from 0.80 to 1.3 mSv per year. Typical backgrounds in Darwin based on measurements taken on 14th October range from 0.50 to 1.0 mSv per year.

Evaluation of estimated exposure for those future employees engaged in operation of the heavy mineral concentrator, waste disposal, product handling and product shipping have not been included in this report. However, the zircon concentrate to be produced at the proposed operation will contain of the order of 150 ppm uranium and 200 ppm thorium. Based on typical mineral sand industry operations with concentrates having higher uranium and thorium content it is considered unlikely that occupational exposure at the proposed operation will exceed 5 mSv per year for any worker.

Soil Radon Flux

Soil Radon Flux results are provided in Table 8. Sampling locations are shown as Long Term Monitoring Locations in Figure 1.

Sample	Location UTM WGS 84			Flux Bq/m ² /s	Location Description
		mE	mN		
0		not applicable	not applicable	<0.01	Trip Blank
1	52 L	0699191	8743216	0.01	Top Soil Next to Costean 1
2	52 L	0699206	8743204	<0.01	In Costean 1
2R				<0.01	Recount of Sample 2
3	52 L	0699286	8743402	0.01	Quaternary Strand Plain
6	52 L	0700234	8743138	0.01	In Costean 2 (edge of deposit)
7	52 L	0700228	8743114	0.04	Tertiary Plateau next to 6
7R				0.02	Recount of Sample 7
8	52 L	0700135	8743456	0.01	Quaternary Strand Plain
9	52 L	0701918	8743892	<0.01	In Costean
10	52 L	0701918	8743892	<0.01	Duplicate of 9
11	52 L	0701921	8743850	0.01	Top Soil Next to Costean
12	52 L	0701921	8743850	<0.01	Duplicate of 11
13	52 L	0700369	8743012	0.02	Camp Site (Tertiary Plateau)
blank		not applicable	not applicable	<0.01	Equipment Blank

Table 8 Soil Radon Flux Results

The data set for soil radon flux is relatively small but there is some clear conclusions that can be drawn from it.

There is no statistically significant difference between the radon flux in the costeans (3 locations with exposed mineral sands), the surface soil adjacent to the costeans (2 locations above the mineralisation) or the quaternary strand plain (2 locations not over mineralisation). For statistical analysis purposes these seven locations can be treated as the same data sub set.

There is a statistically significant difference between the locations on the tertiary plateau and all other locations. It can be stated with greater than 95% confidence that the tertiary plateau locations (95% confidence interval 0.01 to 0.04 Bq/m²/s) have a higher soil radon flux than at other locations (95% confidence interval 0.00 to 0.01 Bq/m²/s).

The significance of this is that the dominant regional source of radon is the tertiary plateau irrespective of the mineralisation being exposed or not. It can be concluded that the proposed mining operation at Andranangoo Creek West will not significantly impact on regional or local atmospheric radon levels.

Under these conditions exposure of workers and members of the public to radon and radon daughters from current activities and proposed mining activities will not be higher than natural background exposure in the region.

It is possible that mineral processing activities may impact on local atmospheric radon levels because the uranium containing minerals will be separated and subjected to mechanical processing. This possibility is not considered likely because the proposed HMC Separator will be operated in a well ventilated open environment and because radon is generally not an environmental or occupational concern in other Australian mineral sand operations. In any case the radon flux from stockpiled heavy mineral concentrate and tailings and the atmospheric radon and radon daughter activity will be measured as part of the operational monitoring program.

Long Term Monitoring

At the time of preparing this report no long term monitoring results were available.

Long term passive gamma monitors were deployed on 12th October 2005 and will be collected for analysis at the end of February 2006.

Long term passive radon monitors will be deployed at the end of October 2005 and will be collected for analysis at the end of February 2006.

Both sets of monitors will be replaced in February 2006 with a set due for collection at the end of May 2006.

APPENDIX 2

List of equipment for Baseline Radiation Monitoring

Equipment	Purpose
Geiger-Mueller meter with sensitivity 0.01 μ Sv/hr Ludlum Model 19 or similar	Area Gamma Monitoring
Alpha counting chamber with solid state detector and counter/timer Canberra /EG&G Ortec	Gross Alpha Counting
High Volume Sampler Control Engineering /Ecotech	Positional Air Sampling
TLD	Personal Gamma Monitoring

APPENDIX 3

Summary of Operational Monitoring Programme

Property Measured	Frequency	Technique
Uranium and thorium Content of Mined Material, Concentrate and Waste	Monthly	ICPMS measurement in Laboratory
Gamma Radiation Personal Exposure	3 monthly continuous wearing period for designated workers Selected period of three months not continuous for selected workers in other categories	TLD monitoring from ARPANSA or other supplier of TLD Services
Gamma Monitoring Area	Annually at selected locations on the mine of mill site Pre and Post mining on a 25 metre grid over the mineralized zone and 100 metre spacing over other areas. Monitoring at base of mine pit before and after disposal of waste from the Stage 2 dry separation plant	Sensitive Gamma radiation Meters
Radio-nuclides in Air Positional	Monthly at selected sites surrounding the mine and mill Two days per quarter in plant buildings	High volume air samplers at 70 litres per minute for 100 hours
Radio-nuclides in Ground Water	Annually at selected bore sites or open water	Assess for radium 226 and radium 228

REFERENCES

- 1. URS 2005. Andranangoo Creek West and Lethbridge Bay West Mineral Sand Mining Project Draft Environmental Impact Statement (November 2005).**
- 2. On Site Technology Pty Ltd 2005. Radiological Survey of Matilda Minerals Ltd Andranangoo Lease Melville Island NT (November 2005).**
- 3. ARPANSA 2005. Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing Radiation Series No.9.**
- 4. ARPANSA 2005. National Directory for Radiation Protection Edition 1.0 Radiation Protection Series No.6.**
- 5. Radiation Safety Control Act and Regulations, Northern Territory 1999**