



Iluka Resources Limited Mineral Sands By-Product Disposal

Planning Permit 15-105

**Crown Allotments 91, 94, 95, 96
Parish of Telangatuk**

Incoming Waste Monitoring Plan Report H2– 2019

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1 Executive Summary

Iluka Resources Limited (Iluka) operates the Pit 23 by-products disposal facility located at the Douglas Mine in the Kanagulk area and within the municipality of the Horsham Rural City. Pursuant to Planning Permit 15-105 issued by Horsham Rural City Council (HRCC), and the subsidiary Pit 23 Incoming Waste Monitoring Plan (IWMP), the Pit 23 facility is approved for the disposal of:

- non-liquid waste by-products associated with or sourced through mineral sands processing undertaken at the Iluka Hamilton Mineral Separation Plant (MSP) containing or contaminated with Naturally Occurring Radioactive Material (NORM);
- used dust filter bags from the Hamilton MSP containing or contaminated with NORM; and
- NORM-contaminated concrete and steel associated with plant and infrastructure from nominated Iluka sites within Victoria.

This report is submitted in accordance with Section 6 of the IWMP and provides a summary of the wastes received into Pit 23 (origin, volumes/weights and radioactive properties) and records of incidents and remedial actions applicable to the reporting period of 1st July 2019 to 31st December 2019.

Key commentary on monitoring outcomes and performance against compliance objectives in the IWMP for the H2 2019 reporting period:

- a total of two (2) loads of MSP By-products were disposed into Pit 23 on the 4th December 2019, totalling 50 tonnes;
- the average concentration for Uranium (U) and Thorium (Th) for the by-product waste received into Pit 23 was 112ppm and 380ppm, respectively; and
- no transport incidents or spillages occurred.

Summary incoming waste data and incident information is provided in Section 3.

2 Introduction

Iluka Resources Limited (Iluka) operates the Pit 23 by-products disposal facility located at the Douglas Mine in the Kanagulk area and within the municipality of the Horsham Rural City (Figure 1 and Figure 2).

Pursuant to Planning Permit 15-105 issued by Horsham Rural City Council (HRCC), and the subsidiary Pit 23 Incoming Waste Monitoring Plan (IWMP), the Pit 23 facility is approved for the disposal of mineral separation by-products and used dust filter bags from the Iluka Hamilton Mineral Separation (MSP) which contain or are contaminated with Naturally Occurring Radioactive Material (NORM), and concrete and steel which contains or is contaminated with NORM associated with plant and infrastructure from nominated Iluka sites within Victoria.

2.1 Planning Permit 15-105

Under the Horsham Planning Scheme the subject land is in the Farming Zone and under the provisions of that zone a permit is required for use and development for Industry (Refuse Disposal). On 25th February 2017 Planning Permit 15-105, (the Permit) was issued by the Horsham Rural City Council as the Responsible Authority to allow:

Use and development of the land for the disposal of waste by-products associated with or sourced through mineral sands processing undertaken at the Hamilton Mineral Separation Plant (MSP), including waste by-products and contaminated materials resulting from the processing and transport operations as follows:

- *By-products from the processing of heavy mineral concentrate at the Hamilton MSP;*
- *used dust filter bags from the Hamilton MSP; and*
- *Other chemically inert material contaminated with naturally occurring radioactive material.*

in accordance with the endorsed plans.

2.2 Commencement of the Permit

Condition 1 of the Permit states:

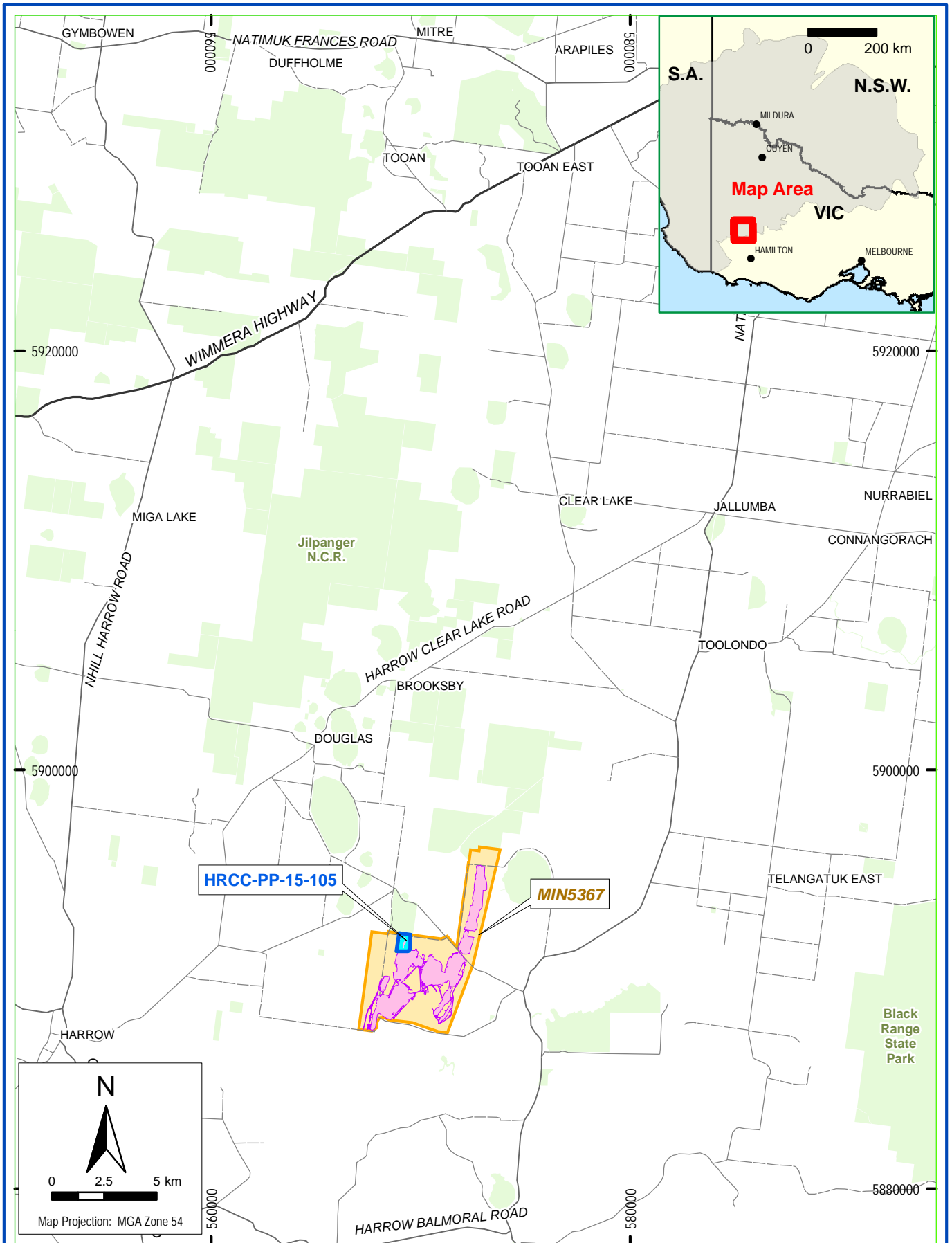
This permit does not come into operation until:

- a. *Iluka has applied to the Department of Economic Development, Jobs, Transport and Resources to vary the 2003 Work Plan to identify a new end uses utilisation of Pit 23 and to vary the rehabilitation plan; and*
- b. *Iluka has applied to the Minister to surrender part of MIN 5367¹ (Pit 23); and*
- c. *The Department of Economic Development, Jobs, Transport and Resources has approved the Work Plan Variation; and*
- d. *The Minister has registered the partial surrender of MIN 5367.*

The permit comes into operation on the same day the Work Plan Variation is approved, and the partial surrender of MIN 5367 is registered.

The Variation to the 2003 Douglas Mine Work Plan was approved on the 13th April 2017, and the partial surrender of MIN 5367 was registered on 11th May 2017, this being the date of commencement of the Permit.

¹ Iluka Resources Douglas Mine – Mining Licence No. 5367 ('MIN 5367')



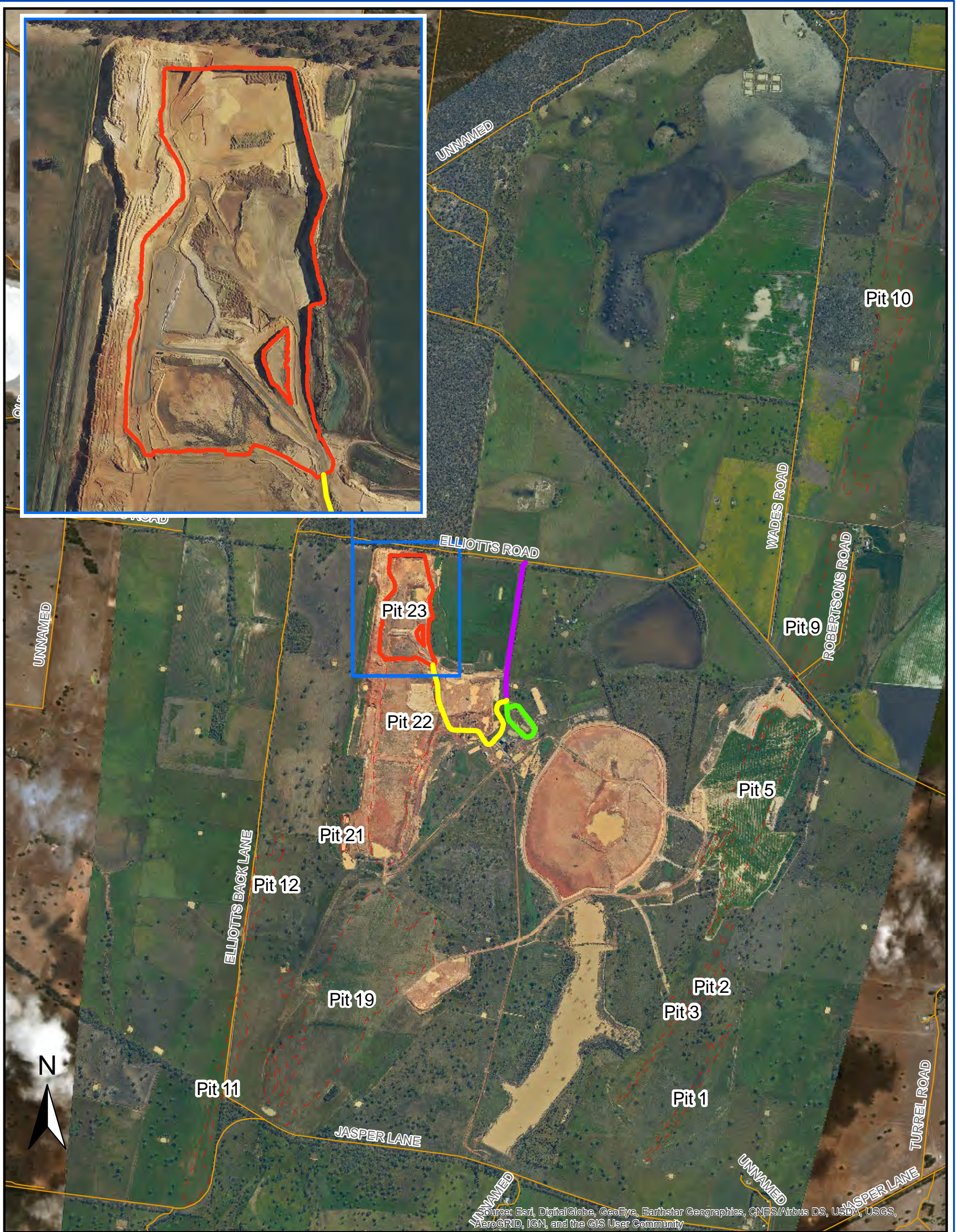
Legend

- Douglas mine
- Pit 23
- HRCC-PP-15-105
- MIN5367 tenement

DOUGLAS

LOCATION PLAN

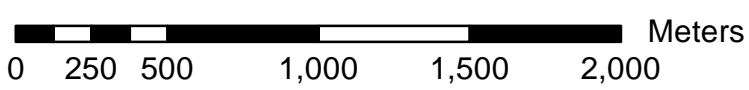




Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Pit 23 haul road
- Mine Access Road
- Truck wash circuit
- Pit 23 crest
- Pit Crests
- Roads



LOCATION OF PIT 23



2.3 Endorsed Plans

Conditions 2, 3, 9, 14, 16 and 34 of the Permit relate to various management plans that once approved by the Responsible Authority will be endorsed to form part of the Permit, which includes:

- Incoming Waste Monitoring Plan (IWMP);
- Environmental Management Plan (EMP), incorporating;
 - Groundwater Monitoring and Management Plan (GWMMP);
 - Surface Water Monitoring and Management Plan (SWMMP);
 - Air Quality/Dust Control Plan (AQMP); and
- Rehabilitation and Vegetation Management Plan (R&VMP)

The plans were endorsed by Horsham Rural City Council on 17th July 2017.

2.4 Permit condition requirement for an IWMP

To ensure compliance with the permitted use (Section 2.1) the Permit includes the following condition concerning the requirement for and content of an IWMP:

Incoming Waste Monitoring Plan

14. *Within 90 days of the commencement of this permit operation, an Incoming Waste Management Plan (IWMP) must be prepared to the satisfaction of the Responsible Authority in consultation with the Department of Health and Human Services for the approval by the responsible authority. Three copies of the plan must be provided to the responsible authority. When approved by the responsible authority the IWMP will be endorsed and it will then form part of this permit. The IWMP must provide for*
- a) *A monitoring and reporting system for ensuring that materials disposed of to Pit 23 are limited to those approved under the conditions of this permit;*
 - b) *Recording of the origin, per load weight and radioactive properties of each incoming load;*
 - c) *Monitoring to ensure all vehicles transporting waste have fully secured and contained loads and that all waste loads have been transported in compliance with licence requirements under the Radiation Act 2005;*
 - d) *Records of any transport incidents or spill and remedial actions taken in the event of such incidents; and*
 - e) *Annual audits of records to verify compliance with the requirements of the IWMP*

2.5 IWMP reporting requirements

Section 6 of the IWMP states the following reporting requirements:

On an annual basis a report will be provided showing the following:

- *For each load:*
 - *source site;*
 - *load weight; and*
 - *material description; and*
- *For the report period:*
 - *radioactivity of by-products on a monthly basis; and*
 - *total quantities of by-products disposed of to Pit 23.*

The annual report will be provided to a suitably qualified auditor who will complete an audit of the data provided and compliance with this IWMP.

Copies of the annual report and the audit report will be submitted to the Responsible Authority.

These reporting requirements are addressed in the following sections.

3 Monitoring Results

3.1 Per load monitoring data

In accordance with Section 6 of the endorsed IWMP, data associated with each load of incoming waste is shown in Table 1. A total of two (2) loads of material were received into Pit 23 in the H2 2019 reporting period.

Table 1: Individual load data for incoming wastes to Pit 23, H2 2019

Date	Week No.	Source site	Location Code	Material Code	Load weight (t)
4/12/19	49	MSP	Pit23	Dry rejects	25
4/12/19	49	MSP	Pit23	Dry rejects	25

3.2 Reporting period monitoring data

In accordance with Section 6 of the endorsed IWMP, the monthly average radioactivity of by-products shall be reported. However, due to the idling of the Hamilton MSP in October 2017 only two loads (totalling 50 Tonnes) of by-product were transported to Pit 23 on the 4th of December 2019. A sample was taken for radionuclide analysis with the results shown in Table 2.

Table 2: Quantities and radioactivity results for disposed MSP by-products, H2 2019

Product	Product (tonnes)	Th (ppm)	U (ppm)
Dry circuit rejects	50	380	112
Wet circuit rejects	0	n/a	n/a
Baghouse dust filter bags	0	n/a	n/a
Total	50		

3.3 Incidents and remedial actions

3.3.1 Incidents or spills

No transport incidents or spillages occurred during the reporting period

3.3.2 Remedial actions taken

None required

3.4 Other matters

None identified.